

NUCLEAR MONITOR

A PUBLICATION OF WORLD INFORMATION SERVICE ON ENERGY (WISE)
AND THE NUCLEAR INFORMATION & RESOURCE SERVICE (NIRS)

wise
World Information Service on Energy
founded in 1978



JANUARY 28, 2008 | No. 665

MONITORED THIS ISSUE:

CONFRONTING THE NUCLEAR RESURGENCE

British Government's Manoeuvres, EU Policy, and the Nuclear-Fossil Collusion

(665.5853 Special) - *European energy policy is on the brink of disaster. The European Commission published on January 23rd a policy package on energy and climate that has been heavily influenced by the UK government and by the nuclear and fossil-fuel industries, as well as by large power utilities. Not so coincidentally, the UK government announced on January 10th its intention to inject political leverage and public money into the moribund nuclear sector, enabling it to build a new generation of reactors. Both moves are part of a coherent and well-designed strategy to ensure the continuous centralisation of the energy system, and of the political and economic power associated with it.*

This article starts describing the nuclear revival in the UK, focusing particularly on its economic and political aspects. It then tracks the takeover of EU energy and climate policy by British policy-makers and bureaucrats who respond to the same interests and agenda as the UK Cabinet. It explains how they have interconnected the Directives covering promotion of renewable energy, trade in carbon emissions, and carbon capture and storage, forming a seemingly environmentally friendly package. This package is then analysed beyond the glossy surface, uncovering an intelligent strategy to strengthen the political and economic power of the nuclear and fossil industries and of the large electricity utilities, while relegating renewable energy to a marginal and tokenistic role. The conclusion presents perfectly viable alternatives based on accelerated and community-based transition to 100% renewable energy conceived and operated as a public service, and makes

concrete suggestions on how to realise these alternatives.

Nuclear Britain

The UK nuclear industry has been on a terminal crisis for several decades. No nuclear reactors have been planned since Sizewell B entered into operation in 1995, after 17 years of costly delays caused by grassroots resistance. The last reactor to come into operation before Sizewell B was Torness 2, in 1989, 14 years after receiving statutory consent from the Secretary of State. Despite Margaret Thatcher's assurance that a new nuclear power station would be built each year under her rule (1979-1990), she and the following Prime Ministers were only able to see through a handful of previously approved projects, at agonizingly slow pace and with immense added costs.

The paralysis that followed was caused mainly by a mix of public opposition and lack of economic viability, despite generous governmental support. The Non-Fossil Fuel Obligation (NFFO), created by the Electricity Act 1989, has provided billions of pounds to UK nuclear power generators and forced the electricity Distribution Network Operators in England and Wales to purchase nuclear electricity. According to Pete West of the Severn Wye Energy Agency (SWEA), "from 1990 to 1998, 98% of the Non-Fossil Fuel levy was handed over to the nuclear industry. Hansard records from January 1996 indicate Nuclear Electric had received £5.9 billion of public funding from the Non-Fossil Fuel levy during the previous 5 years." The NFFO mandate was later enlarged to include the renewable energy sector in

**SPECIAL EDITION:
CONFRONTING THE NUCLEAR
RESURGENCE**

1

WISE AMSTERDAM/NIRS

ISSN: 1570-4629

Reproduction of this material is encouraged. Please give credit when reprinting.

Editorial team: Dirk Bannink and Peer de Rijk.

This is a **special edition** of the Nuclear Monitor describing the interconnection between the takeover of the EU energy and climate policy by British policy-makers and the nuclear revival in the UK.

In this issue British English spelling is used instead of American English.

Next issue of the Nuclear Monitor will be mailed out in February.

what can only be described as a shameless greenwash operation. Renewable energy producers have received an insignificant share of the funds raised; the NFFO continues to be essentially a tool for the channelling of public funds to nuclear power and lately, illegally, to the Treasury, as denounced by the National Audit's Office.

In the last decade, due to the crisis of the nuclear sector and to changes in public opinion, more appropriate tools were introduced, such as the Climate Change Levy for non-domestic energy users (a tax which only renewable energies and cogeneration are exempted from). But the existing orders to subsidise nuclear power under the NFFO Fund, issued in September 1998, will continue in effect until it expires in 2018. In contrast, the Treasury has decided to literally steal the share of the NFFO Fund which should be used for renewable energy. As Oliver Tickell denounced in *The Guardian*⁶, "[t]he Treasury and the Department of Trade and Industry [which controls NFFO funds] justify these payments by claiming the NFFO Fund is "hereditary revenue of the Crown" - along with income arising from the Crown's traditional rights to treasure trove, swans and sturgeons. Yet despite questioning from MPs, ministers have refused to publish either legal advice or an outline of their legal argument, claiming "legal professional privilege". The NFFO Fund therefore still is essentially a funding tool at the service of nuclear reactors.

In spite of such privileges and generous subsidies, the UK nuclear sector came very close to bankruptcy. The UK government created British Energy in order to privatise the eight most modern nuclear power plants in the UK. By the end of the 1990s the company was a stock market favourite, but by 2002 it was in deep financial trouble and approached the government for financial aid. The crisis came as a result of a slump in wholesale energy prices, a failure to obtain tax exemption for nuclear power on the Climate Change Levy, and renegotiations of the nuclear waste processing and power plant decommissioning costs with British

Nuclear Fuels plc. The closure of nuclear power plants was avoided when the government made the taxpayers foot the bill (once more) and provided £3.4 billion public money to bail out the company in 2004. At the same time, the Nuclear Liabilities Fund was created by the government to assume the long-term financial liabilities from spent nuclear fuels. The Fund is a mixture of state-funding (estimated between £175m and £200m per year) and contributions from British Energy (which is required to provide 65% of its profits to the fund), and also acts as a public-funded creditor to British Energy. The Fund therefore established a limit in the private liability for nuclear waste and decommissioning and ensures government-funded profitability to whoever decides to invest in nuclear energy.

In addition to this enormous transfer of public money into the private nuclear sector, British taxpayers are also made to fund the public nuclear sector. As Pete West of the Severn Wye Energy Agency explains, "[t]he £72 billion public liability for clean up of existing nuclear plants refers to the older Magnox reactors that were unmarketable at privatisation and therefore still in the public sector. The Nuclear Decommissioning Authority is currently spending £2 billion per year of taxpayers' money on nuclear waste management."

The combination of all the direct and indirect support measures and subsidies that have been channelled into nuclear power, if applied to the renewable energy sector, would have created the most impressive green energy generating capacity in the world, enabling the closure of a substantial amount of fossil fuel and nuclear power plants, and establishing the UK as the global leader in environmental action, sustainable technological innovation, economic and geopolitical independence and green employment generation. Instead, they went into the nuclear black hole and did not create a single extra kilowatt of installed capacity, a single new job, or a single blip of new knowledge. They just fed the bank accounts of nuclear investors, while the radioactive waste stocks continued growing.

The energy bill announced on the 10th of January 2008 added some more guarantees for the nuclear sector. In a nutshell, the proposed bill assures nuclear investors that the government will pay to resolve crises, will provide even higher indirect subsidies than until now, will cover unexpected costs for handling nuclear waste and reactor decommissioning, and will ensure that new nuclear reactors are built fast, disregarding local opposition and democratic principles where necessary.

The main elements can be summarised as follows:

- The government promises "greater certainty for investors" through unilateral action to underpin the price of carbon, which becomes the main instrument for indirect nuclear subsidisation. While the primary tool for this will be the EU Emissions Trading Scheme, the government commits to "keep open the option of further measures to reinforce the operation of the EU ETS in the UK should this be necessary to provide greater certainty for investors".
- Public money is made available for decommissioning new plants and waste disposal. In theory, operators are responsible for those costs but "if the protections we are putting in place prove insufficient, in extreme circumstances the government may be called upon to meet the costs of ensuring the protection of the public and environment." Section 3.75 of the document indicates that there will be a fixed price for disposing of waste, despite the lack of any plan or strategy in that respect, which means that nobody knows what the costs will be. What is clear is that expensive action is required: last year the Royal Society warned that Britain's stocks of plutonium are kept in "unacceptable" conditions and pose a severe safety and security risk. The length of time between starting a new nuclear plant and eventually putting the waste into a geological repository could well be over 150 years. Cost projections in this context are pure speculation, but the public purse will cover all unexpected costs.
- These provisions limit the long term liabilities of private companies. Private operators do not need to worry about the financial consequences of nuclear

pollution, whether caused by waste, accidents or decommissioning; the government will meet the costs. Therefore, the proposed bill will facilitate access to loans and capital markets. In addition, the nuclear insurance premium will continue to be grossly undervalued and publicly subsidised (as everywhere else in the world).

- Other costs associated with the nuclear revival that are likely to be covered by taxpayers include the cost of adapting transmission lines to fit the highly centralised electricity generated by new reactors, security and transport of waste fuel, and protection of nuclear power stations from the effect of tidal surges. A study commissioned by British Energy said that "increases in future surge heights of potentially more than a metre could, when combined with wind speed increases, threaten some sites unless existing defences are enhanced."
- The government also announced a planning bill that will make the process of building new reactors quicker and less complex, ensuring that the costly delays in winning planning permission to build Sizewell B will not be repeated.

The reinforcement of an already outrageous and disproportionate level of taxpayers' support to the nuclear sector was the response to the conclusions reached by the 2003 Energy White Paper, which concluded that nuclear power's "current economics make it an unattractive option for new, carbon-free generating capacity and there are also important issues of nuclear waste". The Labour Cabinet now claims that there should be no artificial cap (!!) on the amount of nuclear energy generated in the UK. The proposed energy bill will provide all the (apparently non-artificial) subsidies and public guarantees to ensure that the UK remains a nuclear superpower. The Conservatives also ensured investors that the political climate will remain supportive of nuclear power in the long term.

The new energy bill presented on the 10th of January is not so new: it has been planned and prepared over the last years. According to Pete West,

Tony Blair only agreed to the publication of the 2003 Energy White Paper, which specifically ruled out new nuclear power, if there was a review in 2007 including the nuclear option if renewable energies were failing to deliver. Since then, the government applied the worst possible renewable energy regulatory framework and stole funds collected to promote renewable energy, resulting in one of the lowest shares of green power in one of the countries with the largest renewable energy potential in Europe. Last year's consultation into UK Energy Policy, which resulted in the nuclear revival, was so shamelessly manipulated by the Government that Greenpeace successfully challenged it in court: the ruling established that the government had not fairly represented consultees opinions, which were well argued responses in favour of renewables and saving, and against nuclear power. But now, on the basis of policy machinations, resource theft and illegal and dishonest consultations, the Cabinet misrepresents renewable energy as a marginal component of the energy mix, limited by high costs, public opposition and lack of reliability, and nuclear power as the unavoidable option to secure affordable, safe and clean energy. This is a showcase example of deliberate and disingenuous hypocrisy.

The uselessness of this nuclear revival is apparent from the Cabinet's own plans, according to which new nuclear reactors cannot begin to be built until 2013 or later, and no new plant would come online until 2018. Past and current experiences, such as the status of the vastly subsidised new reactor under construction in Finland, which is two years late (and £1bn over budget) after just two years' building, indicate that it is unlikely that the first new nuclear plant can open in the UK before 2021. Old reactor closures mean that the share of nuclear power in UK's electricity supply will go down from about 18% now to 3% by 2020. Therefore, the new nuclear reactors cannot respond to the energy gap created by the closure of existing ones. They also cannot respond to climate concerns: according to the 2006 report of the Sustainable Development Commission (SDC), reporting directly to

the prime minister, replacing all the existing nuclear capacity with new nuclear plants might save 7m tonnes of carbon by the late 2020s - equivalent to around 4% of total UK emissions. In contrast, as Caroline Lucas (MEP, Green Party) remarks, "the government's own figures show that there is the potential to save more than 30% of all energy used in the UK solely through energy-efficiency measures which would also save more money than they cost to implement. Moreover, about two-thirds of the energy used in electricity generation from large, centralised power stations is wasted before it ever reaches our homes, and by itself accounts for a full 20% of UK CO₂ emissions."

The nuclear revival is therefore blatantly disconnected to energy or climate considerations. It is purely based on geo-political factors and the quest to maintain a hegemonic position in the world system, combined with powerful economic interests. One can only hypothesize about the analysis and intentions behind such an irrational policy, since the official reasons will never be publicly disclosed. A later part of this article will do so, focusing especially on the rush for the last remaining (easily usable) uranium stocks, on questions around nuclear proliferation, and on the reasons why powerful economic interest need to delay the (potentially very fast) transition to renewable energies as much as possible.

Of course, the new energy bill was well received by power companies, including French giant EDF (the employer of UK Prime Minister's brother Andrew Brown), German E-on, Centrica (British Gas parent group) and others. EDF was particularly pleased with the commitment to provide a "UK mechanism" for encouraging low-carbon technologies. These corporations have been working very closely with the UK government to shape EU's energy and climate policy according to the interest of the nuclear and fossil industries.

From London to Brussels

The European Commission has just presented its proposal for an energy and climate policy package which

includes the Directive on the Promotion of the Use of Renewable Energy Sources (RES), the revision of the EU Emissions Trading Scheme (EU ETS) and a new directive on Carbon Capture and Storage (CCS).

The UK government worked hard last year to ensure that the legislative package is based on instruments that have proven totally unsuccessful in terms of promoting renewable energy (RE) deployment and reducing greenhouse gas (GHG) emissions, and that will displace existing successful policies and alternatives. It also includes an outright destructive agrofuels policy which, if implemented, will strengthen the existing trend to transform large-scale centralised RE into a source of social conflict, remove RE's potential contribution to the common good, and in some cases even turn them into a further (and potentially very powerful) contributor to environmental destruction.

On a superficial reading, the policies that are about to be disclosed seem to be based on a positive approach. They are based on the decision taken in March 2007 by the European Council (the Heads of State of all EU countries), which endorsed:

- a minimum unilateral reduction of 20% in GHG emissions for the EU (to be extended to 30% if other dirty countries reduce their emissions),
- an indicative target of 20% reduction of the EU's energy consumption compared to projections for 2020 (to be obtained through energy efficiency),
- a 20% minimum mandatory target for the share of renewable energies in overall EU energy consumption, and
- a 10% minimum mandatory target for the share of sustainably-produced biofuels in transport petrol and diesel consumption.

These targets, to be achieved by 2020, seem to reflect a sincere concern for sustainability and a strong political will to promote renewable energies through mandatory action. The policy package defines specific rules to implement these guidelines.

A closer look reveals a large number of destructive policies hidden behind a convenient green façade. The directives

are plagued with problems on their own right, but their combination makes the policy package far more damaging than the sum of its components.

Given the complexity of the policies involved, all the components will be briefly described before examining them and their interconnections in more detail.

The Commission proposes to introduce a **European market for renewable energy certificates**, which is incompatible with the only successful RE policy (known as "feed-in tariffs"). This proposal is highly lucrative for large power utilities, which will make immense windfall profits and regain complete control over the power sector by pushing out independent power producers. It denies a fair opportunity for public supply of RE at the local level, keeping it firmly in the hands of large energy companies. In addition, this virtual market will make RE more expensive and therefore less competitive in comparison with fossil and nuclear energy, delaying the necessary transition to a 100% renewable energy system. It will have a devastating effect on promising technologies (such as photovoltaic solar or thermo-electric power, wave energy, etc), condemning them to irrelevance instead of giving them the opportunity to reach the leading role that they should and can play in our energy supply.

Even more serious will be the immediate consequences of the EU's **fixation on biofuels** as the way to solve the myriad of problems that plague transport policy. Due to the limits of our planet, it is simply impossible to produce 10% of the increasing amounts of fuel that we consume from organic matter in a sustainable manner, even if more stringent criteria than the inadequate set proposed by the European Commission would be adopted.

Production of biofuels in such a scale will have immensely destructive indirect consequences along the complex web of relations that interconnect the global food system, natural and plantation forests, and biofuel production networks. Our environment and social relations will suffer immensely, since

biofuels will link the price of oil with the price of all the basic components of life-sustaining production (including food, land and water). However, it will also allow the established oil sector to maintain its power, and the car industry to continue making profits from inefficient technologies. In the face of growing ecosystem destruction, scarcity of land, water, food and fuel, and rising social tensions, it is imperative to phase out fuels (both fossil fuels and biofuels) and to base our need for mobility on electricity derived from renewable sources such as the sun, the wind and the waves.

Regarding the directive regulating the second phase of the **Emissions Trading Scheme (ETS)**, the Commission proposes to auction emission rights, instead of distributing them for free amongst the largest polluters as they did in the first phase. This could be viewed as a positive move. The free distribution of emission rights to the dirtiest industries during the first ETS phase was an outrageous example of negative redistribution, a clear contradiction of the "polluter pays principle" (turning it into "polluter gets paid principle"), and generally an insult to intelligence. However, the auctioning of polluting rights is certainly not the answer. This so-called "cap and trade system" not only accounts to a privatisation of the atmosphere: it also puts into the hands of large corporations one more powerful instrument to manipulate production costs, bring smaller competitors to bankruptcy and concentrate economic, political and physical power. It cements an emerging market where enormous speculative profit margins (the best basis for economic concentration) are only possible if a continuous demand for carbon credits is maintained. This produces a very strong incentive to keep an active carbon economy alive and kicking, and therefore contributes to the marginalisation of RE.

However, public opinion makes it difficult to keep RE in the backburner in order to sustain the carbon economy, without offering any alternative. Cosmetic measures are required in order to save face, in a context where climate change and other environmental concerns play an

increasingly important political (and electoral) role. This is the main reason for the scientifically and economically absurd push for **Carbon Capture and Storage (CCS)**. CCS offers the opportunity for the power sector to claim that they are working on supposedly "clean" fossil energy - further delaying the urgently needed (and perfectly feasible) quick transition to a 100% RE-based decentralised energy system. CCS also increases the amount of energy required to produce energy, offering a perfect vehicle to increase profits on behalf of the environment. This leads, in the case of several capture technologies, to higher levels of other pollutants being emitted to the atmosphere. But the main problem with CSS is that even if the capture technologies would work perfectly, there is simply no space to store all the carbon emitted by fossil fuel-based power plants, and no certainty that the carbon which can be stored will remain where we put it - actually, for all we know, it is far more likely that it won't. The only supposedly reliable and economically viable "solution" is pumping liquefied carbon back into oil and gas fields (or into saline underground water). This makes technically easier the extraction of the last remaining reserves out of those fields. Therefore, public funds that should be used to foster REs will instead bolster the already astronomical profits of oil corporations.

In addition, the carbon market artificially created by the ETS (and, in the UK, guaranteed by government intervention) provides the conditions on which the **nuclear industry** can present credible business plans, thus overcoming the most important obstacle to its grand renaissance. This is a brilliantly concealed way to make taxpayers foot the bill for the revival of the nuclear industry. Direct subsidies would be a political liability, since public opinion would not accept transparent payments to maintain alive a source of energy characterised by such economic, political, technical, environmental and security problems. However, state intervention to maintain the price of carbon can be sold to the public as environmental policy (despite the complete absurdity of such claim), since almost nobody understands the

obscure technicalities of this speculative market.

The policy package proposed by the European Commission keeps renewable energies in the corner, strengthens the artificial market for carbon, and presents CCS, nuclear and biofuels as the only viable alternatives to confront climate change. It therefore contains all the ingredients necessary to **increase the economic and political power of the fossil and nuclear sectors** and of the power utilities. But the package has also been designed to **foster power concentration at the national / geo-strategic / military level**. The industries and politicians behind the package, and the bureaucrats at their service, have no hesitation in sacrificing public interest in pursue of their inter-related and mutually-reinforcing interests.

This is the general picture, now the specific mechanisms of this policy package will be explained in more detail.

Certificate Trading: Making Renewable Energy Irrelevant Again

Every single study about the promotion of renewable energy (RE) reaches the same unambiguous conclusion: the only policy that has proven effective in Europe in achieving large-scale, fast and cheap RE deployment is the so-called "feed-in tariff". In countries with feed-in laws, power utilities are forced by law to buy renewable energy from all producers who meet the required quality standards, and to pay prices fixed by the law on a long-term basis. The prices are different for each technology (for instance, for solar photovoltaic energy they are higher than for wind energy) and sometimes they are also different depending on the local conditions (for instance, in Germany wind energy producers in locations near the coast get less per kWh than producers in the interior, where there is less wind). The objective is to make it possible for everyone to invest in renewable energy equipment, since the law guarantees a modest but worthwhile profit on a long-term investment - and therefore provides access to loans for such investments.

The tariff is revised every few years, generally getting reduced for new projects as the price of RE equipment goes down. The price of RE equipment goes down due to the experience and the economies of scale produced by the proliferation of independent power producers (IPPs). The combination of all these positive effects has enabled the take-off of the RE sector in the countries that apply well-designed feed-in laws on a consistent basis. All studies on this matter (including those done by the European Commission) unanimously conclude that the feed-in law has proven to be the only successful RE policy in Europe. More importantly, in countries with successful feed-in laws, small and medium-sized IPPs are rapidly growing, taking some 1,5% of the incumbent industry's market share each year.

The feed-in tariff does not create a fixed market share for RE; instead it provides the conditions in which investment in RE can happen successfully. All countries that adopted effective feed-in tariffs (in particular Denmark until 2001, Germany and Spain) have witnessed an exponential growth in the sector and the emergence of a new and dynamic RE industry. They also produce the cheapest renewable electricity and have the largest share of IPPs. The extra price paid by the power utilities is diluted in the electricity bill of all electricity users, making no impact on state finances, and is hardly noticeable for the consumers. For instance, the feed-in tariff in Germany has added an average of EUR 1,5 to the monthly electricity bill of households, and in exchange it has avoided the emission of 97 million tons of CO₂ in 2006, produced a 21.6 Billion Euro turnover (also in 2006) and created around 320.000 jobs (out of a total of around 600.000 RE- jobs in the whole world). The German industry has certainly not suffered a loss of competitiveness due to the feed-in tariff - in contrast, it has developed a very promising (and rapidly growing) new area of activity, export and expertise.

The other major policy used for the promotion of RE, only used by the UK and four other countries (Belgium, Italy, Poland and Sweden), fixes a minimum

target of renewable energy to be achieved by energy utilities and creates a market for RE certificates to be traded towards the fulfilment of this target. Sometimes there are specific targets for specific technologies (in order to avoid that all investment goes to the cheapest technologies). This system normally fosters the creation of "green electricity" markets at the consumer level too: consumers are offered the option to pay more for renewable energy (although in fact they receive the same electricity than everyone else, since they are connected to the same network), and that extra money is devoted to RE projects. The price paid for renewable electricity is normally higher in certificate-based RE schemes than in countries with feed-in laws, which makes RE unnecessarily expensive and uncompetitive. However, IPPs cannot participate in this market, since they cannot get loans for the initial investments. The reason is that the price of the electricity that they generate is uncertain, hindering the long-term planning required to finance RE projects. Therefore, this system has an extremely poor record: the targets are hardly ever reached, the renewable electricity is more expensive, and most RE projects remain in the hands of power utilities and other large corporations. Obviously, power utilities prefer this system, since they have almost complete control and make large profits from the few renewable energy projects that come into being, while in a feed-in system they simply pass on the cost to the consumers but do not (or should not) make any profit.

The results of both systems are clearly illustrated by the situation in Germany and the UK. In Germany, on-shore wind energy receives 8,36 cents per kWh, and the country installed more than 20 GW of capacity between 1999 and 2006. In the UK, the same electricity receives between 13 and 14 cents per kWh, but less than 2 GW of capacity were installed between 1999 and 2006. In Germany, with one of the worst RE potentials in the world (not much wind, not much sun, nothing much of any other RE source), the share of RE in electricity production is 12,5%, up from 4,7% in 1998. Germany reached its indicative RE target for the year 2010

already in 2007, and the sector continues growing vigorously, three and a half times faster than in the UK as far as wind energy is concerned. In contrast, only 2% of electricity production and 1,3% of the final consumption of energy in the UK is renewable (the lowest percentage of any major European country), although the UK has one of the best renewable energy potentials (including the best wind, wave and tidal potential) in Europe, and could therefore produce the cheapest RE electricity. The UK policy choices make it impossible to reach the indicative target for 2010, and much less the mandatory 2020 target: the UK Government's 2007 Energy White Paper admitted that present policies will only deliver a 5% contribution from renewables to the UK's energy by 2020. However, the Cabinet refuses to change its policy.

Despite (or due to?) the appalling record of certificate trade, last summer the UK government pushed its way through in the European Commission in order to extend its certificate-based system to the complete European Union. It proposed creating, through this Directive, a EU-wide market for tradable "Guarantees of Origin" (GO or GoO, another name for certificates) for renewable energy. This responded to the demands made by large electricity corporations. The UK government has positioned British bureaucrats in key positions in the process of drafting energy policy; therefore, last summer's operation (taking place while most people's attention was elsewhere) was successful: the first draft of the new RE Directive presented certificate trade as a *fait accompli*.

The justification for introducing this measure is that member countries need a flexibility mechanism for the fulfilment of their share in the 20% target on renewable energy, since the Council decision of March 2007 made this target mandatory. This means that all countries will need to contribute to its fulfilment - the countries that have a larger share of RE will increase their share more than the countries with little RE, but all will have to do something. And since some countries have more RE resources (such as wind, sun etc) than others, the Commission considers

that they should be allowed "to support renewable energy produced and consumed in another member state instead of deploying more expensive domestic resource."²

The problem with this argument is that certificate trade is incompatible with feed-in laws. Their coexistence is politically and economically unfeasible: you cannot ask energy consumers in one country to collectively pay the marginal extra costs of energy that will "count" towards the RE target of another country. Certificate trade undermines the basic tenants on which the feed-in tariff is based, and leads to its disappearance. This in turn has a large number of negative consequences, which ultimately render RE irrelevant.

In order to understand why this is so, one has to grasp the difference between markets characterised by scarcity and speculation, compared with markets based on plenty and security. Certificate trade is of the first kind, while feed-in laws establish the second kind of markets. This point is well explained in the following text from Tomas Kåberger, of the International Institute for Industrial Environmental Economics, Lund University, Sweden:

"The artificial market of certificates is small. The demand is non-elastic, there is strong demand to reach the compulsory quota, but then no more - not at all. As a result large suppliers can control the certificate price depending on their supply of certificates to the market. Thus the large producers can create price changes. At the same time the large companies have no problems surviving such price fluctuation on a minor part of their total market.

They will be able to hold back their investments and supply of certificates, and let the certificate price rise so as to make investors build windmills etc. Then the large power industries would start investing and sell off certificates to lower the price, wait a few months and then start buying the capacity from other investors who face cash-flow problems. That is what I would like to do if I was director of Vattenfall.

With competition in the Swedish market[,] overcapacity led to low prices. Large, often state-backed, companies bought almost all smaller competitors. Then prices increased.

Later, again, with emission trading. Power companies got a surplus of emission rights for free. They held back their emission-rights from the market to increase the price. Then increased the price of electricity as if they had to buy certificates on the margin, making billions of Euros. And then there was a chicken-race until someone started selling off the surplus emission rights and the market collapsed. They are not stupid - and they get rich."

These concerns do not exist in a country with feed-in laws. The prices are guaranteed, everyone is free to invest on the basis of a decent and secured return, and there is no space for speculation. In contrast, a EU-wide certificate market would lead to a downward competition between countries towards lower support for REs, since no country wants to pay for a good support scheme if foreign companies can benefit from it and speculate with prices at their will.

Another consequence of certificate trade will be that only the currently cheapest RE technologies will be developed, which is particularly bad for photovoltaic solar power (PV) and emerging technologies (such as solar thermo-electric, geothermal, wave, tidal and even off-shore wind). Due to a fundamentally flawed accountancy that disregards externalities and long-term impacts, PV is valued by the market to be about 4 times more expensive than conventional energy sources. However, increasing production of PV panels in the last years has brought down the price at an amazing pace, on the basis of good feed-in tariffs introduced by a handful of countries. The price in 2005 was half than in 1995, and at the current cost-reduction speed, it is likely to take less than 20 years for PV electricity to be cheaper than that produced from fossil fuels (including coal) or nuclear reactors, even in countries with meagre solar resources. From a total figure of 1.246 new MW installed in the EU in 2006, Germany installed 1.153 MW, despite not being

the sunniest country in Europe. But if feed-in tariffs are replaced by certificates, the development of the sector will be brought to a standstill.

This is not only a problem for specific technologies: it represents a grave hindrance to the transition to an energy system that is 100% based on REs. This transition requires all RE sources and technologies (not only the presumably cheapest), since otherwise it is not possible to secure a balanced and stable energy system. For this reason, all emerging technologies (including a range of energy storage technologies) must be promoted to mature technically and reach economies of scale. The trade in RE certificates undermines this process.

Certificate trade also creates new transaction costs to producers of renewable energy. The RE sector is forced to cover the costs of a mandatory system that demands the annual production and tracing of RE certificates (the so-called "Guarantees of Origin"), while the producers of nuclear and fossil-fuel-fired power plants don't cover this expense. According to Dr. Dörte Fouquet, Director of the European Renewable Energy Federation (EREF), "[t]he German Government estimates additional costs of such a scheme would be 100 billion Euro until 2020 for the consumers in the EU-27. For Germany alone, it is estimated, that the costs for renewable electricity compared to the present Feed-in costs will almost double."

Managing such a system, and making the best use of opportunities for speculation, is a comparatively smaller burden for large corporations than for independent power producers (IPPs). This contributes even more to market concentration in the hands of oligopolies.

In addition, RE certificate trade concentrates all RE investments in the regions with the best potential. A high density of RE projects owned by distant corporations provides a powerful nourishment for local opposition. It is only logical for local communities to reject projects that endow them primarily with the impact

of wind turbines and solar panels, while the profits go elsewhere. The impact goes well beyond the landscape, affecting also social relations. For instance, wind turbine proliferation often affects negatively the price of nearby property with less wind resource, while the places with good resources get good rents from project developers. This leads to tensions and divisions in communities. In contrast, policies oriented towards local collective ownership and a fair distribution of benefits (explored at the end of this article), combined with feed-in tariffs, have resulted in strong local support for RE projects, and have the best track record in terms of speed and positive engagement in RE deployment.

According to Dr. Dörte Fouquet, the UK government's decision to push for the introduction of a EU-wide certificate market was based on a paper prepared by its Industry Department, which claimed that the electricity prices for industry would triple if they had to fulfil the EU 20% binding target on RE. This report is based on bizarre and baseless arguments, but it shaped UK policy since it fitted very well the long-term strategic interests of the Government and the nuclear and fossil lobby. On October 23rd 2007, The Guardian published internal documents which described the British government's plans to undermine REs and to press for the inclusion of nuclear power in the 20% target: "Leaked documents seen by the Guardian show that Gordon Brown will be advised today that the target Tony Blair signed up to this year for 20% of all European energy to come from renewable sources by 2020 is expensive and faces "severe practical difficulties". John Hutton, the secretary of state for business, will tell Mr Brown that Britain should work with Poland and other governments sceptical about climate change to "help persuade" German chancellor Angela Merkel and others to set lower renewable targets, before binding commitments are framed. Ministers are planning a U-turn on Britain's pledges to combat climate change that "effectively abolishes" its targets to rapidly expand the use of renewable energy sources such as wind and solar power".

However, the British proposal to establish a EU-wide market for RE certificates was rejected by countries that had already developed a sizable RE industry such as Germany and Spain, but also Slovenia, Latvia and other countries that are part of the European Feed-In Alliance. The proposal was also received as a war declaration by the small and medium Independent Power Producers (IPPs), organised in the European Renewable Energy Federation (EREF), by the RE industry, organised in the European Renewable Energy Council (EREC), and by a diversity of NGOs. The Commission insisted, but saw itself eventually forced to water down their plans to create a mandatory EU certificate trade market. They brought in a provision which would have allowed countries to request permission to withdraw from the EU certificate market a part (and only a part) of their RE production. Such requests would be decided upon by the Commission on an annual basis, and would be valid for only one year; new permissions would have to be requested each year, not less than 6-months in advance. The British bureaucrats at the commission thus came up with an outlandish method to invest themselves with the power to decide about European renewable energy policy. They were extraordinarily obstinate: they were reportedly acting even against the will of their own Commissioner, who seemed not to feel able to do anything about it. However, they saw themselves forced to water down their proposal even more when the Legal Service of the European Commission declared in unambiguous terms the illegality of this regulatory framework for certificate trade.

The draft directive presented on 23rd January 2008, therefore, changed the terms of the certificate trade. The draft foresees that only the countries that are up-to-date in the annual evolution of their RE target can "export" certificates, and that all countries can create "a system of prior authorisation" for certificate trade in order to protect their RE policy. However, all countries are still forced to create certification agencies, and to issue certificates for each MWh of renewable energy produced. Therefore, the added costs

are imposed also to countries that have no interest on certificate trade. In addition, the Directive foresees that the Commission³ will evaluate the situation with regards to certificate trade and may submit further proposals to the European Parliament and to the Council.

The press release of the European Commission³ clearly indicates their intention to continue pushing for a EU-wide RE certificate market: "As long as the EU's overall target is met, Member States will be allowed to make their contribution by supporting Europe's overall renewables effort, and not necessarily inside their own borders." Despite the good progress achieved by the organisations and governments that defend the feed-in tariff, the Commission will keep up the pressure in favour of a mandatory EU certificate market. The current draft Directive already forces all countries to put into place the costly bureaucratic structure necessary for a EU-wide mandatory market. They might have to wait some time, but a mechanism to introduce mandatory trade at a later point has already been built into the draft Directive: before the end of 2014, the Commission "shall assess the implementation of the provisions of this Directive for the transfer of guarantees of origin between Member States and the costs and benefits of this".

The Commission's press release already hinted at the direction of their future assessment. It claims that certificate trade "would shift investment to where renewables can be produced most efficiently, which could cut EUR 1.8 billion from the price tag for meeting the target", even though all serious studies on the matter (including the Commission's) contradict this view. The British neoliberal fundamentalists that produced this claim use a simplistic method to reach these conclusions: they calculate how much investment would be needed to meet the target if it was concentrated in optimal locations and using the currently cheapest technologies, and compare it with the investment needed to meet the target if it is spread all over Europe using a technology mix. They consciously leave everything else out of the picture. They know that certificates

will wipe out independent power producers and concentrate the whole market in the hands of utilities, who will only do a minimum investment on RE in order to keep certificate prices as high as possible (making RE much more expensive). But their oversimplistic calculation allows them to present certificates as cost-saving policy.

It would not be surprising if in the next few years, the corporations and governments that support a EU-wide mandatory market would arrange a small amount of certificate trading in such a way that it does result in lower prices than if it had not taken place. This would provide a solid argument to the Commission to push for mandatory trade, at least for the percentage of RE produced beyond the minimum target (which is supposed to increase from year to year until it reaches an average 20%). If feed-in countries refuse, then countries such as the UK are most likely to refuse to fulfil their share of the target.

The current draft Directive suggest that the next step that the Commission is likely to take (possibly long before 2015), is making certificate trade mandatory for "excessive" RE. This is a serious (though obscure and technical) issue with important repercussions for our future energy mix, so it is worth to explore it in detail.

The 20% EU target has been divided in different country-specific targets. Countries which have already a large share of RE have to contribute more than countries with less RE (according to a bizarre rule which rewards anti-RE countries such as the UK), and richer countries have to contribute more than poorer countries. The target for each country also differs from year to year: it increases until it reaches that country's target in 2020. If all countries reach their country-specific targets in time, their combination produces a 20% share of RE in the EU as a whole.

According to the current draft, there is a limit to the protection that member countries can offer their RE producers from the EU-wide RE certificate market created by the Directive. That limit is each country's minimum share of the target for a given year. This is what is

implied in Article 9(2) of the current draft:

"Member States may provide for a system of prior authorisation for the transfer of guarantees of origin to persons [including juridical persons, i.e. companies] in other Member States if in the absence of such a system, the transfer of guarantees of origin is likely to impair their ability to comply with Article 3(1) [i.e. to fulfil their contribution to the 20% target in 2020] or to ensure that the share of energy from renewable sources equals or exceeds the indicative trajectory in Part B of Annex I [i.e. to ensure that their contribution to the target progresses according to the calendar set by the Directive].

The system of prior authorisation shall not constitute a means of arbitrary discrimination."

This innocent-looking piece of bureaucratic jargon has wide-ranging consequences. The Commission (and the UK government) will make good use of it, and of other provisions which make the judgement about certificate trade a matter of economic performance. On the basis of a few initial and well-managed "successful" examples of cost-cutting due to certificate trade, they are likely to push for mandatory trade for RE produced beyond the minimum targets. They will get the active support of countries that are not interested in RE and would prefer to buy certificates of RE generated in other countries.

The introduction of mandatory certificate trade beyond the minimum targets will provide a very strong incentive to downgrade RE promotion policies. From a government's perspective, there is no point in promoting RE that will count for other countries' target requirements. The policy downward spiral will take place, in a less dramatic form than if certificate trade was mandatory for all RE, but it will take place anyways. No country will see the sort of robust and healthy growth of RE, beyond official targets, that was witnessed in Denmark (before 2001), Germany or Spain.

Another likely consequence of this is the disappearance of the feed-in tariff entirely. In feed-in countries renewable electricity prices are lower than average, certainly lower than the prices for certificates. Producers in those countries (especially the large utilities) will challenge in court a policy that only gives access to the higher certificate price to RE produced in "excess" of the annual target. They will argue that this limitation is a silent appropriation of the profits that they would be able to make if all the RE produced would have access to the EU-wide certificate market. This would be, de facto, a legal challenge to the feed-in system in place, which will be used by the utilities in order to create insecurity and discourage investment by independent producers, regardless of the final outcome reached (many years later) by the court.

The price of RE certificates (and therefore of RE as such) will be in the hands of large energy corporations, which will manipulate them to get oligopoly-based windfall profits. They will drop the price to bankrupt independent producers from time to time, in order to minimise investment in RE. The rest of the time they will keep the price of certificates high enough to ensure that RE remains a set of niche technology in a niche market controlled by them, and therefore providing them with exorbitant profits. Renewable energies will once more be confined to marginality in the midst of a nuclear revival, but the few existing wind farms and solar installations will surely be displayed in every single advertisement of energy corporations.

It is to be hoped that several governments will oppose this move, but they might sell out. The UK government has two powerful cards under the sleeve that might result in the inclusion of nuclear power in the RE target and in a slow but sure introduction of a mandatory EU-wide certificate market. The two cards, which can be particularly effective at weakening the position of the German government, are transport emission reduction policy and carbon quota allocation. Both are described in the following sections.

German cars: the weight of tradition

The current draft directive gives a privileged and exclusive treatment to biofuels. It is the only RE source for which a binding minimum target is set for all EU countries. The 20% RE target refers to all forms of energy (electricity, heat and transport), and each country is in principle free to choose where to concentrate their efforts. But that freedom is relative: all of them have to use at least 10% of biofuels in transport.

This privileged treatment is not accidental: it reflects the power of oil corporations and car manufacturers. The very existence of oil corporations would be threatened if we move towards a fuel-free economy. The car industry also has a lot to lose if the highly inefficient combustion engine is replaced by electricity-driven engines, since they would lose most of the post-sale business that they make by selling unreliable 19th Century technology that requires regular check-ups and recurrent replacement of components.

For this reason, most governments intend to address peak oil, fuel price increase and growing insecurity of oil supply primarily by replacing fossil fuels by biofuels. This has made biofuels (or agrofuels, to be more precise) increasingly important in the last years, leading to the spectacular expansion of a new global market with impressive annual growth rates. For the time being, this growth is still based on subsidies and politically-established quotas, but as the price of oil continues growing, agrofuels might become economically competitive with respect to fossil oil-based fuels. Once we reach this moment, the expansion of agrofuels will take an inexorable dynamic of its own.

The promotion of agrofuels is presented to public opinion as "green" policy, despite mounting evidence that large-scale monoculture-based agrofuels have a worse environmental impact than fossil fuels, and have devastating social and economic consequences, briefly described in Box 1.

Box 1: Agrofuels, green devastation

Agrofuels is the term recently created by peasant movements to refer to biofuels produced on the basis of large-scale monoculture-based plantations. The discussion about agrofuels therefore primarily refers to the social, economic, environmental and political framework in which almost all biofuels are currently produced. It is not about whether the technology is good or bad on itself, but about what use is made out of it. Due to interrelated factors such as production costs, land distribution patterns and power relations in global commodity markets, virtually all biofuels consumed nowadays are agrofuels.

In a global context where agricultural land is expanding due to increased food and feed demand, large-scale additional demand of agricultural products for agrofuel production will necessarily result in increased (direct or indirect) ecosystem destruction. In addition, the intensive use of fertilisers for agrofuel production results, for most crops, in higher greenhouse gas (GHG) emissions than fossil fuel use⁴.

Second-generation biofuels are presented as the solution to all problems caused by the current agrofuels. However, they are most likely to make them worse. Second-generation biofuels are based on the idea of turning the complete plant matter (including cellulose) into fuel, with the help of genetically modified bacteria (and often also genetically modified plants). If this happens, no organic matter will be returned to the soil. It will only be possible to maintain production on the basis of intensive fertiliser use, resulting in higher GHG emissions than first generation agrofuels, and than fossil fuels.

The possibility to replace fossil fuels by agrofuels will result in a direct correlation between the price of oil and the price of agrofuel feedstocks (the "raw material" for agrofuels). The multiple interconnections that exist in global commodity markets (including competition for land and water) will, in turn, link the price of agrofuel feedstocks (no matter whether edible or not) with the price of all food products, as well as of land, water, virgin ecosystems, etc.

Agrofuels therefore act as a conveyor belt that translates the scarcity of oil into an extraordinarily strong motivation to take control over agriculture, forestry and nature, turning them into energy-producing monocultures on the basis of the cheapest possible labour. Control over land and water becomes control over energy, which is the most strategically and economically important part of the economy. Already in this early stage, although agrofuels are not yet competitive towards oil, competition for land is resulting in large-scale displacement, land concentration, exploitation of labour, hunger and conflict.

In this context, talking of "sustainability criteria", as the current draft Directive does, makes absolutely no sense. It is a pointless greenwash exercise with no real consequences.

One of the most important challenges facing humanity is the replacement of fuels (of any kind) by sustainable electricity generated from renewable sources. This move is absolutely necessary if we want the transition to RE to take place in time and in a responsible and positive manner, before the impact of peak oil gets out of control. This issue is discussed in more detail at the end of this article.

Car manufacturers, the oil industry, agribusiness and biotechnology companies are working together to ensure that agrofuels represent the backbone of transport emission reduction policies. They are receiving support from large farmers' organisations, but not from small farmers, who see their livelihoods threatened by the speculation taking place around all components of the farming economy. The work of these lobbies, combined with geo-political considerations regarding security of supply of fossil fuels, led in 2003 to the introduction of a reference target of 2% agrofuel use in road transport for 2005 and of 5,75% for 2010. These targets were just indicative, acting as guidelines rather than rules.

In contrast, the current draft directive on RE has a mandatory 10% target for agrofuels, which implies sanctions

against the countries that do not reach it. The most important specific reason for this discrimination in favour of agrofuels is directly linked with the support of the German government to its car industry.

In early 2007 the Commission wanted to impose a mandatory efficiency standard for cars in order to reduce CO₂ emissions to an average of 120 gr. of CO₂ per km. In response, car manufacturers launched a heavy campaign, which was most articulate and aggressive in Germany. Many "prestige" car manufacturers claim that they won't be able to survive in the market unless they sell large and heavy vehicles that can reach very high speeds in a very short time, and therefore refuse limitations in the amount of fuel to be wasted in their engines. The German car industry was particularly aggressive, publishing full-

page ads with direct threats to close down their factories in Germany and lay off their (still substantial) workforce if mandatory efficiency standards would be imposed. As a result, Angela Merkel's administration (with her own personal involvement) became the governmental speaker of "prestige" car makers, and bargained efficiency down to an average of 130 gr/km. The deal was signed on the understanding that the 10 gr/km difference would be made up for with the mandatory use of agrofuels. For this reason, the European Council chaired by Angela Merkel in Spring 2007 included a specific mandatory 10% minimum target for agrofuels as part of the guidelines for the EU energy and climate policy package.

Therefore, the childish obsession for size and speed felt by (mainly male) affluent car buyers is one of the key

reasons (although not the only one) behind the strengthening of one of the most disastrous policies ever devised.

The UK government knows how important this issue is for the German government. They seem to be ready to use it as a bargaining tool, in exchange for including nuclear power as part of the RE target, and to continue pushing for RE certificate trade. And they can draw on a growing wealth of arguments against agrofuels to increase their bargaining position.

A recent report in the Financial Times cited an unpublished study by the Joint Research Center, a body of European Commission scientists, as saying that the "uncertainty is too great to say whether the EU 10% biofuel target will save greenhouse gas or not." It noted that subsidies in place to promote biofuels would cost European taxpayers between 33 billion and 65 billion Euros by 2020. In 2007, Jean Ziegler, the UN's Special Rapporteur on the Right to Food, denounced biofuels as "a crime against humanity" and called for a five-year moratorium on their production. There have been public protests and food riots in Mexico, Morocco, Uzbekistan, Yemen, Senegal and Indonesia over the high price of basic staple foods, caused to a large extent by the increase in agrofuel feedstock production. Such protests have not arrived to Europe yet, since vulnerability to food price increases is much lower than in other continents. However, there are already anecdotal signs of unease (such as a "pasta strike" in Italy) and some analysts extend the reason behind the current economic slowdown to the uncertainty caused by the quick rise in food prices (in combination with the subprime crisis and the ensuing credit crunch). All of this puts the German government's support for the agrofuels target on a difficult position.

On 21st January, the UK's House of Commons Environmental Audit Committee called for a moratorium in the increase of biofuel use. Committee chairman Tim Yeo said: "Biofuels can reduce greenhouse gas emissions from road transport. But at present, most biofuels have a detrimental impact on the environment overall". The timing of

this report might be a coincidence, but insiders from the German renewable energy community were predicting (and fearing) in advance of its publication that the UK government would use transport emission reduction policy as a bargaining tool against the German opposition to certificate trade.

For the time being, the Cabinet remains positive about agrofuels, but also signals that this is an area for negotiation. Its press release about the draft directive⁵ quotes Secretary of State for Transport Ruth Kelly as follows: "Action to encourage sustainable biofuels is one of a range of measures we are taking in the UK to reduce the impact of transport on the environment, backed by record investment in public transport, walking and cycling. I welcome the inclusion in the Commission's proposals of sustainability criteria for biofuels. These are a good starting point for negotiation. The UK has been leading the international drive to make sure the biofuels we use come from sustainable sources and we will be pressing to make sure European biofuels policy also includes strong safeguards to maximise greenhouse gas savings and protect the environment."

Taking into account the dreadful environmental record of the UK Government, such statements have to be taken with great doses of caution. They might signalise a confined area of enlightened independence from corporations such as BP and Shell, without expecting anything in exchange. But they may as well be a combination of a defiant signal to Berlin, in order to prepare the negotiations on nuclear and RE certificates, and a hypocritical and meaningless "green gimmick" addressed to public opinion.

There are two different possible outcomes to this situation. In a disaster scenario, the German Government would continue extending its blank cheque to the old, heavy, traditional car industry. It would go on defending agrofuels as the only acceptable transport emission reduction tool, at the cost of accepting nuclear power as contributing to the "renewable energy" target, and/or of agreeing to mandatory

RE certificate trade beyond the minimum levels reflected in the target.

In the positive scenario, the German Government, in the face of public mobilisation, would drop its insistence on agrofuels and therefore strengthen its bargaining position towards the UK Cabinet. This would make it more likely to resist nuclear power and RE certificate trade.

However, even if the best-case scenario comes true (which will require grassroots mobilisation and campaigning), the UK Government might still be able to play its other hidden card.

Carbon Emissions Trade: Competition on Unequal Basis

There have always been many good reasons to oppose the trade in emission "rights" of carbon and other greenhouse gases. Now there are two more reasons. First, this market will be used to subsidise the nuclear revival (at least in the UK, probably in many other countries too). Second, the UK is most likely to use the negotiations around the EU Emission Trading Scheme (EU ETS) to get nuclear power accepted as contributor to the RE targets, as well as to dismantle the only effective policies for the promotion of RE.

EU ETS has so far completely failed to deliver greenhouse gas (GHG) reductions. Last year, European governments agreed that avoiding dangerous climate change means keeping the eventual temperature rise below 2°C. Since we have already seen a rise of just over 0,7°C and cannot now prevent another 0,7°C rise, there is not much room to manoeuvre: drastic reductions need to happen within the next decade. However, the main instrument to achieve a reduction of emissions in the EU is a lousy system that only produces profit for large polluters.

Under the EU ETS, large emitters of greenhouse gases must annually report their CO₂ emissions, and they are obliged every year to give an amount of emission allowances to the government that is equivalent to their CO₂ emissions in that year. The first phase of EU ETS (2005-2007) involved about 12.000 polluters, representing

approximately 40% of EU CO₂ emissions. These large industries got emission allowances for free from their governments, who were supposed to give them less than they would emit under a business-as-usual (BAU) projection, in order to force them to innovate to reduce their emissions, or to buy allowances from others.

According to the Climate Action Network, during the first phase of EU ETS only two of the 25 EU states (UK and Germany) asked the participating industry sectors to reduce emissions compared to historic levels. In the 15 old EU member states as a whole, allocations were 4,3% higher than the base year, and more than 90% of the polluters emitted less than their quota of free credits. In May 2006, when it was clear that too many allowances had been given away, trading prices crashed from about EUR 30/ton to EUR 10/ton. After an initial slight recovery, the price declined further to EUR 4 in January 2007 and below EUR 1 in February 2007, reaching an all time low of EUR 0,03 at the beginning of December 2007. Therefore, the system did not result in any reduction of emissions whatsoever. However, it produced amazing profits for the polluters, particularly the energy utilities, many of whom added the cost of the allowances in the energy price, even though they got the allowances for free. Several high-profile court cases have found them guilty of fraud, and imposed heavy fines on them for making profits based on their oligopolist position. Interestingly, there seems to have been a well-coordinated EU-wide strategy to withdraw allowances from the market in order to maximise the price of allowances, and therefore the illegitimate price rises, before the race to sell started.

The prospects for the second phase of EU ETS look just as grim as for the first phase. The National Allocation Plans include a reduction of 7% of greenhouse gases (now all GHGs are included, not only CO₂) under official the official business-as-usual (BAU) projections. But according to independent estimations, in fact all the National Allocation Plans except for Portugal, Spain, and UK result in higher emissions than the independently

estimated BAU. Therefore, the second phase will also create further speculation and nothing else. In addition, it is foreseen that it will be possible to buy credits for emission reductions outside of the EU. The EU ETS is therefore likely to result in a major overall increase in EU emissions. Partly in response to this, the Commission cut eleven of the first twelve Phase II plans it reviewed, accepting only the UK plan without revision. The negotiations still have a long way to go, and the UK has a very strong position in them.

The second phase of EU ETS also introduces the auctioning of a great part of the allowances, although heavy polluters has obtained opt-outs and delays in the date of entry of auctions until 2012. The exact terms of the opt-outs and delays is still under negotiation.

EU countries have highly asymmetrical positions in this negotiation. The UK, which produced the idea of EU ETS and pushed for its imposition, is the strongest player. It hardly manufactures anything and it plans to build up its nuclear industry thanks to the competitive advantage that nuclear power will obtain from high carbon prices. The UK also has the strongest and most dynamic financial markets and hosts almost the entire European carbon market, thanks to the experience gained by the UK Emissions Trading Scheme in advance of the introduction of EU ETS. Carbon markets operate on the basis of the same speculative tools (such as futures and options) as financial markets. Therefore, the more money goes through carbon markets, the more revenue for UK-based speculators. As a result, the UK is interested in reducing the distribution of allowances as much as possible: high carbon prices do not affect negatively its competitive position (in fact they are beneficial, since they affect negatively countries with a large manufacturing base), and they bring high dividends to City-based carbon brokers.

This is in stark contrast with countries like Germany, where many energy-intensive industries are located. These industries claim that their ability to

compete with imports from non-EU countries will be affected by high carbon prices, due to the extra costs added by having to buy emission allowances. This argument is highly questionable, since there is a large potential to innovate and save energy or reduce emissions. But the fact remains that these industries already warned of a risk of relocation outside of the EU, and several governments (including the German one) take this threat very seriously.

The decision to publish and negotiate the draft directives on renewable energies and EU as a package makes it much easier for the UK to use EU ETS as a strong bargaining tool. Being the only country whose EU ETS National Allocation Plan has been accepted by the Commission without comments, it does not need to negotiate its own share of excessive allocation. It can therefore demand other political concessions in exchange for accepting other countries' excessive allocations.

This explains very well why the UK energy bill announced on the 10th of January 2008, and currently pending from approval by the Parliament, includes a commitment to develop "national" and publicly funded mechanisms to keep the price of carbon high if the EU ETS price is too low. It gives the nuclear industry reassurance that they will continue being competitive with regards to fossil energy in the UK, regardless of whether other EU countries overallocate emission "rights" to their polluters. It therefore provides the UK Cabinet freedom to use the carbon emission bargaining tool in the negotiation of the energy and climate package, and therefore obtain the acceptance of nuclear power as contributor to the RE target and/or the destruction of feed-in tariffs across the continent. And at the same time, it allows the government to project an image of environmental concern. One must admit that it is a brilliant example of political manipulation.

Carbon Capture and Storage, analysed in Box 2, is the third element of the energy and climate package, is a concession to the oil and coal industries, in order to compensate for

the losses that it will make due to EU ETS and to ensure that the fossil-nuclear mix remains the backbone of the energy supply.

The energy package also plans another mechanism to compensate power utilities for the auctioning of emission

rights: certificate trading. The German Association of Industrial Energy Users and Self-Generators calculates that auctioning of allowances from 2012 onwards means that the utilities will lose roughly 5 billion Euros per year in unjustified windfall profits. A recent study by Fraunhofer Institute

("Increased auctioning in the EU ETS and trade in guarantees of origin for renewables: A comparison of the impact on power sector producer rents"⁶) concludes that they will basically gain the exact amount of new windfall profits through introduction of RES certificate trade. It is a strange

Box 2: Carbon Capture and Storage (CCS) - Public money for private oil extraction

CCS is a type of carbon abatement technology in which the carbon in fossil fuels is captured as CO₂ either before or after combustion, and placed in (supposedly) long term storage in geological formations. There are different technologies for CCS, and some ideas of possible future innovations. Existing technologies result in a reduction of CO₂ but also in a substantial increase in other pollutants. This is so because all CCS technologies (whether existing or imagined) require extra energy, so the emission of pollutants that are not removed by CCS is increased.

According to the Intergovernmental Panel on Climate Change (IPCC), depending on the specific CCS technology used, emissions of CO₂ are reduced by around 87% and 88%, but emissions of NOx are increased by between 11% and 31%, and the emissions of ammonia can be increased by up to 2200%. Emissions of SOx can be either reduced (almost totally removed) or increased by almost 18%.

Capturing and compressing CO₂ requires much energy and would increase the fuel needs of a plant with CCS by about 11-40%. Therefore, the cost of energy from a new power plant with CCS is between 21% and 91% higher than without CCS, depending on several factors. These estimates apply to purpose-built plants near a storage location: applying the technology to preexisting plants or plants far from a storage location will be more expensive.

However, the main problem with CCS is the storage of the captured CO₂. It is envisaged either in deep geological formations, deep oceans, or in the form of mineral carbonates. In the case of deep ocean storage, there is a risk of greatly increasing the problem of ocean acidification, a problem that also stems from the excess of carbon dioxide already in the atmosphere and oceans, and that is expected to lead to non-linear climate effects that will greatly accelerate climate change. Even if non-linear effects do not occur, oceanic acidification will result in incalculable environmental problems (such as accelerated coral reef destruction), and the CO₂ will slowly find its way back to the atmosphere. The time it takes water in the deeper oceans to circulate to the surface has been estimated to be on the order of 1600 years, varying upon currents and other changing conditions. Even in the best of all cases, deep ocean storage would simply pass on the problem to future generations.

Geological formations are currently considered the most promising sequestration sites, particularly if the CO₂ is injected in oil fields that are near depletion, in a process known as enhanced oil recovery, that helps to extract the remaining oil. When storage is combined with enhanced oil recovery, the storage could yield net benefits of US\$10-16 per tonne of CO₂ injected (based on 2003 oil prices). Although CO₂ has been injected into geological formations in the past (especially for enhanced oil recovery), the long term

storage of CO₂ is a relatively untried concept and there is no guarantee that the CO₂ will remain underground. CO₂ is much more reactive and unstable than oil or coal, and therefore it is impossible to predict how it will behave on the medium and long term. Other disadvantages of old oil fields are their geographic distribution and their limited capacity.

It has also been suggested to use saline aquifers to store the CO₂, since they have been used for storage of chemical waste in a few cases. Saline aquifers have a large potential storage volume and are much more widespread than oil fields. But relatively little is known about them, compared to oil fields. To keep the cost of storage acceptable the geophysical exploration may be limited, resulting in larger uncertainty about the aquifer structure. Leakage of CO₂ back into the atmosphere may be a problem in saline aquifer storage, as with oil fields.

Storage in the form of mineral carbonates is regarded as more stable, but its price makes it totally impractical. In addition to non-energy costs, the IPCC estimates that a power plant equipped with CCS using mineral storage would need 60-180% more energy than a power plant without CCS.

The challenge posed by the storage of CO₂ from CCS plants shares some features with the issue of nuclear waste. Nobody really knows where to put it or how long it will stay there, and all methods considered to deal with it simply pass the problem to the future generations.

Given the extra costs involved, no large scale power plant operates with a full carbon capture and storage system. However, the EU draft directive on CCS foresees the use of taxpayers' money to support its development, including up to twelve CCS demonstration projects. The real reason behind this has nothing to do with climate change: it is a green façade for indirect subsidies to the oil industry, in order to make even more profitable the extraction of the last European oil. More significantly, these projects should create the impression that there is such a thing as "green coal" or "green oil", and therefore release the pressure from public opinion to limit the use of fossil fuels. Just like agrofuels, CCS has become a star in the energy and climate policy mix in an extraordinarily short time, since it gives the chance to keep (actually, to increase) business as usual and still project a green image.

For these reasons, CCS is seen as a key technology for the UK. The proximity of almost depleted oil and gas fields in the North Sea make it a very interesting project location from the perspective of oil giants such as Shell and BP. The UK Cabinet announced in the 2007 Budget that it will fund a commercial-scale CCS demonstration project, providing up to 100% of the additional capital and operating costs incurred by the project developer in successfully demonstrating the technology on a long term commercial scale. Other countries, such as Denmark and Norway, also have their own projects underway. Now the EU follows suit.

coincidence that both amounts are roughly equivalent.

Making sense? - The Geo-Strategic and Military Dimension of Energy Policy

It is difficult to understand how such an awful energy and climate policy can make sense to policy makers. It is far more expensive, polluting, complex and risky than a transition to a decentralised 100% percent renewable energy system. It will only have negative consequences for almost the whole of society, benefiting only a few private interests.

But this is nothing new. The same pattern has repeated itself recurrently in the history of energy policy, since those private interests are perfectly aligned with the geo-strategic and military interests of the state, particularly in hegemonic countries.

According to *The Economist* ("Nuclear Power Out of Chernobyl's Shadow", May 6th 2004, print edition), "[m]ore than half of the subsidies (in real terms) ever lavished on energy by OECD governments have gone to the nuclear industry."

According to "Federal Energy Subsidies: Not All Technologies Are Created Equal" (by Marshall Goldberg, REPP, July 2000 No. 11), between 1947 and 1961, commercial, fission-related nuclear power development received subsidies worth \$15.30 per kWh. This compares with subsidies worth \$7.19/kWh for solar and 46¢/kWh for wind between 1975 and 1989. In their first 15 years, nuclear and wind technology produced comparable amount of energy (2.6 billion/Nucl. and 1.9 billion kilowatt-hours/wind), but the subsidy to nuclear outweighed that to wind by a factor of over 40, at \$39.4 billion to \$900 million.

What we are seeing today is nothing more than the extension of the post-WWII energy policy of "world powers", which served (and still serves) the goal of maintaining military dominance. The relaxation in the nuclear race that followed the end of the cold war is over. The message sent by the differential treatment that the US-UK axis made gave to Iraq and North Korea has sent an unequivocal

message to the other countries of the world: if you don't have nuclear weapons, you should submit to our domination or be ready for invasion. The neoconservative policies of Bush's and Blair's administrations have left us, amongst other terrible legacies, an irreparable damage to the little credibility that multilateralism still had, the reawakening of nuclear proliferation in peripheral countries, the re-escalation of a military race with Russia, and growing numbers of people ready to die while provoking as much death and destruction as possible in the West. The relation with emerging powers such as China is still quiet, but nobody knows what the future might harbour.

In this context, the only ethical policy choice is working decidedly for complete disarmament, for the complete abolition of all civil and nuclear programmes, and for peace, cooperation and urgent environmental remediation and economic redistribution. Renewable energies play a key role in that process, since they can provide much more energy than we need for affordable prices, and they are present all over the world.

However, the choice of the UK Labour government is clear: it seems to have signed a "state pact" with the Tories in order to marginalise renewable energy and to rebuild a major nuclear capacity. As the *Guardian* newspaper reported on 24th January, "John Hutton, the business secretary, said the UK remained committed to meeting the EU renewable energy target share but insisted that other low-carbon technologies-including nuclear power-had to be part of the mix. Battles are likely to develop among the 27 governments over the inclusion of nuclear energy." John Hutton's report on the EU energy package to the UK Parliament indicates that the UK wants the RE target to include nuclear power: "[W]e set out the framework for our low carbon future in the 2007 Energy White Paper. We are already working to implement the domestic measures proposed in that White Paper through the Energy and Climate Change Bills currently going through the House. We have also announced decisions on the future of key low carbon technologies

such as nuclear power and the development of carbon capture and storage. Having this broad portfolio of low carbon options, alongside, renewable energy technologies available to investors, will be essential in moving to a much lower carbon future by 2050."

One of the reasons is the fact that easily usable uranium stocks are getting depleted very rapidly, and the race for nuclear fuel is similar to the race for oil fields. A naïvely optimistic assessment could be that the UK government thinks that by approving many nuclear power plants, uranium will become more expensive and this will discourage other countries from building nuclear power plants. But they know that the price of uranium will not stop other countries from reinforcing their nuclear programmes.

We cannot afford to waste time with this sort of policies (and politicians): what we need now, urgently, are intelligent policies based on the common good, rather than on the concentration of power and wealth in the hands of large energy corporations and the state. And if history is of any use, we should be prepared to define and struggle for such policies through grassroots organising, since the solutions certainly will not come out of the offices of the European Commission, or of any national government.

Moving forward - Renewable Energy for the Common Good

The debate about this policy package offers a unique opportunity to collectively shape a good set of policies that will accelerate the transition to a 100% renewable energy system. A future-oriented Directive must also be socially-oriented and give communities a leading role in this transition, allowing them to utilise decentralised RE resources in order to generate local collective prosperity, in order to avoid opposition to new projects and speed up the adoption of renewable energies as a public service.

It is possible to reach such a positive outcome, since the discussion about the future European energy policy is only about to start - both in the

European Parliament and in society as a whole. But a positive outcome will require the active mobilisation of large sectors of society within a wide alliance that will gather enough energy to surpass the remarkable power of the interests that are behind the current Commission proposal.

There are two important factors that contribute to the political mobilisation potential on this issue. First, all the arguments are unambiguously in favour of alternatives based on public interest and the common good, and against the proposals of the Commission. Second, there is enough concern about the issues connected with this policy package (climate change, security of supply, energy-related conflicts, etc) and desire for change to gather the critical mass required for a complete transformation of the European energy policy.

But in order to generate the social and political energy required to win this battle, we must be able to provide convincing positive alternatives, and to organise alliances around them. The rest of this article sketches some elements of what could become an alternative energy policy proposal. It does not intend to be all-embracing; it only hopes to provide some pointers for what needs to be a more collective discussion amongst a wide range of organisations.

The central idea is to propose a policy based on renewable energy as a basic public service, deployed locally by community-owned non-profit organisations. The potential for this kind of solutions has already been proven: in just five years (1990-95), 25% of the Danish power supply changed from conventional coal to locally-owned CHP with the only driving force of supplying cheap heat to the community. Simultaneously, wind energy increased strongly. This transition was combined with a coal-stop that was first introduced in 1990 and repeated in 1997 .

There is a wide selection of RE technologies available to be integrated into autonomous structures owned and controlled at the community level, covering the needs for power, transport and heating. No RE solution can stand

alone but must be a combination of solar, wind and biomass. The integration of CPH, wind, solar and other technologies require the development of locally-owned public infrastructure, with biomass and waste as a storage solution. The new EU Directive, with its 12-years perspective, should launch and nurture this process. This proposal gives the feed-in tariff a public interest dimension, and a regional development dimension, that has a great political potential.

We should also oppose a Directive based on targets and market quotas, since these limit the development of the sector, and insist on replacing the targets by a set of sound policies that can produce a rapid and effective transition. For instance, Herman Scheer (General Chairman of the World Council for Renewable Energy) estimates that the German feed-in law will bring the contribution of RE to 20% in 2011 instead of 2020. But if a EU-wide quota system is imposed by the directive, the growth potential between 2011 and 2020 (which could take Germany close to energy self-reliance) would be lost. No other sector of society faces a limit, and we should refuse one for RE.

In addition to presenting positive alternatives, it is also important to denounce and resist the worst policies and policy-makers. In this sense, the UK Government has developed special merits and deserves special attention. However, the German government should also be forced to backtrack on its pro-agrofuels position.

The UK government will soon provide a great opportunity to take these issues to the street. According to Pete West of the Severn Wye Energy Agency (SWEA), "The UK government is planning a public consultation in summer this year on how to reach the 20% renewable energy target, with a policy statement due in early 2009." Judging from the previous consultation on UK Energy Policy, this will probably be another exercise of manipulation to justify a previous decision. But the local meetings of the consultation can also be used as action opportunities.

But all these and many other ideas will remain wishful thinking unless we are

able to build a strong and broad-based grassroots campaign on energy. Most organisations active on this field only deal with one particular aspect or issue, missing the connection between all of them. For instance, a lot of effort is going in denouncing climate change and GHG emitters, without putting this work in a broader context. It is extremely easy for manipulative politicians to make use of this work in order to promote nuclear power, agrofuels and CCS, and to present themselves as climate saviours. It is therefore important to create awareness about the connection between all aspects of energy policy and their deep interconnection with the evolution of our societies, and to produce an inspiring political platform that encompasses all these aspects.

Notes:

- 1 See <http://politics.guardian.co.uk/comment/story/0,,1840311,00.html>
- 2 Letter sent by Commissioner Piebalgs to the European Renewable Energy Federation (EREF), dated 14th December 2007.
- 3 European Commission press release "Boosting growth and jobs by meeting our climate change commitments", 23 January 2008, reference IP/08/80.
- 4 See "N2O release from agro-biofuel production negates global warming reduction by replacing fossil fuels", P.J. Crutzen et al, Atmospheric Chemistry and Physics Discussions, August 2007.
- 5 <http://www.gnn.gov.uk/environment/fullDetail.asp?ReleaseID=347181&NewsAreaID=2&NavigatedFromDepartment=True>
- 6 http://www.isi.fhg.de/e/working%20papers/WP_ETS-auctioning.pdf
- 7 See details of this proposal in <http://www.folkecenter.net/gb/news/fc/chp>

Source & contact: Sergio Oceransky. Sergio works at the Nordic Folkecenter for Renewable Energy (www.folkecenter.dk/gb) as co-ordinator of the World Wind Energy Institute (www.wwei.info), a decentralised network of training centres and Universities specialised in wind energy. He is grateful for the comments, ideas and suggestions contributed by Preben Maegaard, Director of the Nordic Folkecenter for Renewable Energy.

Address: Kammersgaardsvej 16, Sdr. Ydby
DK-7760 Hurup Thy, Denmark
Email: so@folkecenter.dk

WISE/NIRS NUCLEAR MONITOR

The Nuclear Information & Resource Service was founded in 1978 and is based in Washington, US. The World Information Service on Energy was set up in the same year and houses in Amsterdam, Netherlands. NIRS and WISE Amsterdam joined forces in 2000, creating a worldwide network of information and resource centers for citizens and environmental organizations concerned about nuclear power, radioactive waste, radiation, and sustainable energy issues.

The WISE/NIRS Nuclear Monitor publishes international information in English 20 times a year. A Spanish translation of this newsletter is available on the WISE Amsterdam website (www.antenna.nl/wise/esp). A Russian version is published by WISE Russia and a Ukrainian version is published by WISE Ukraine. The WISE/NIRS Nuclear Monitor can be obtained both on paper and in an email version (pdf format). Old issues are (after two months) available through the WISE Amsterdam homepage: www.antenna.nl/wise.

Receiving the WISE/NIRS Nuclear Monitor

US and Canada based readers should contact NIRS for details of how to receive the Nuclear Monitor (address see page 11). Others receive the Nuclear Monitor through WISE Amsterdam. For individuals and NGOs we ask a minimum annual donation of 100 Euros (50 Euros for the email version). Institutions and industry should contact us for details of subscription prices.

WISE/NIRS offices

WISE Amsterdam

P.O. Box 59636
1040 LC Amsterdam
The Netherlands
Tel: +31 20 612 6368
Fax: +31 20 689 2179
Email: wiseamster@antenna.nl
Web: www.antenna.nl/wise

NIRS

6930 Carroll Avenue, Suite 340
Takoma Park, MD 20912
Tel: +1 301-270-NIRS
(+1 301-270-6477)
Fax: +1 301-270-4291
Email: nirsnet@nirs.org
Web: www.nirs.org

WISE/NIRS NUCLEAR MONITOR

c/o WISE Amsterdam
PO Box 59636
1040 LC Amsterdam
Netherlands

**PRINTED MATTER
MATTÈRE IMPRIMÈ**

