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Will they, won't they?

The new coalition Government seems, to environmentalists at least, to be nobody's friend and nobody's enemy.

Take a look at some of the new policies. One of the Government's first acts was to unceremoniously pull the plug on the Infrastructure Planning Committee —the über quango designed to handle large scale planning decisions on power plants, motorways and airports.

As Bibi van der Zee explains in her article, the IPC reeked of a lack of democracy and was to be the perfect tool with which to railroad through new nuclear power stations. But — and perhaps the reason why many environmentalists appeared to bite their tongues over the body — it also had the power to speed up massively the construction of sorely needed new wind farms. A victory for democracy yes, but also very likely a return to crippling NIMBYism for the renewable energy industry.

Much the same has befallen the proposal for ID cards. Binned as an invasive waste of money, those who support small Government, privacy and local democracy had cause to celebrate. But those — and they may not be discrete categories — who support the idea of personal carbon quotas as one of the most equitable ways of sharing our rights to the global atmosphere can forget about the system becoming reality, at least for another decade, without the technology behind ID cards.

So, too, with nuclear. Those greens who still have fears over fission may take some small succour from the coalition announcement that new nukes will still have to be built without public subsidy — something that could, especially in the current economic climate, delay their construction for a good few years yet. However, as our columnist Dan Box has pointed out, the simultaneous commitment to introduce a floor price in the EU carbon market will effectively mean a hidden subsidy to nuclear power station operators — a commitment that they will always be able to sell their low-carbon electricity at above-market rates.

Again, with electric cars, there was reason to be cheerful in the new commitment to build a national recharging network for electric and hybrid vehicles. But there was equally reason for caution when, just a few days after the manifesto was launched, a report from the Royal Academy of Engineering warned that without proper attention to decarbonising the electricity grid, electric cars would not necessarily hold much over small petrol or diesel equivalents.

And even the welcome commitments to emissions standards for new coal-fired power plants and the proposed 'Green Investment Bank' (GIB) have met with hand-ringing from NGOs. A Friends of the Earth press release sent at the end of May fretted that 'saying [emissions standards and the GIB] 'may' be included in the Energy Bill is just not good enough'.

There's plenty to be hopeful about with fresh blood in Whitehall, our first Green MP in Westminster, and the possibility of progressive action on emissions targets by the EU. Let's just make sure we've looked at both sides of each equation first.

Mark Anslow, Editor

Why only the Amazonians can save the rainforest

'Saving the rainforest' has been a battle-cry of the environmental movement since its inception. But just what does that mean, how does it work, and who exactly does the 'saving'? By Nicholas Bruschi

The Amazon rainforest is the greatest of its kind on Earth, covering five and a half million of the Amazon Basin's seven million square kilometres. It is the archetypal wilderness, a land criss-crossed by waterways originating in the Andes and extending as life-giving capillaries through primordial forests. It is home to 10 per cent of all species in existence. It is also under siege.

According to some estimations, the majority of the world's tropical rainforest will be gone by 2050. In Brazil, which contains 60 per cent of the Amazon, 90 per cent of deforestation is illegal encroachment caused by poorly enforced, unclear, overlapping and often dubious land entitlements.

One widely discussed approach to tackling the problem is the UN REDD (Reducing Emissions from Deforestation an Degradation) programme, under which financial rewards are given by industrialised countries to their less industrialised counterparts for not cutting down their forests. In theory it's a good idea, but some REDD schemes have been criticised for lacking proper monitoring and enforcement, and inadequately consulting and protecting indigenous and local communities.

But REDD is not all bad news, and innovative projects are tackling its inherent problems head on. The Juma Sustainable Development Reserve (SDR) in Amazonas State is the first Brazilian REDD initiative. Funds raised will hopefully allow the state government to install effective enforcement and monitoring controls and contribute to sustainable development. It is hoped the project will save 444,541 hectares of forest and prevent the release of 253m tons of CO_2. An innovative corporate partnership with hotel chain Marriot International has raised hopes that the model can be applied to the state's thirteen other SDRs by establishing new company partnerships willing to sustain them.

Juma largely sidesteps REDD's monitoring and auditing failures as it uses what is known as the 'Bolsa Floresta' (Forest Bursary) approach. This provides resident families with a monthly payment of R$50 and direct access to clean water, healthcare and education in return for participating in conservation training and making a zero-deforestation commitment. The scheme does not govern the communities; it encourages them to found 'dwellers associations' to govern themselves.

Juma will only have a future, however, if the cashflows that REDD provides prove generous enough. Although there were positive noises towards increased REDD funding at the ill-fated COP15 Copenhagen climate summit in December 2009, it remains one of the many areas still to be agreed upon.

But forest conservation need not be completely at the mercy of the international carbon markets. Another Bolsa Floresta-based initiative in Amazonas State is largely independent of REDD funding, and may be a model for how forest carbon and ecosystems can be preserved whilst politicians fiddle.

The 11,240 km2 Mamirauá SDR (MSDR) covers an area of flooded forest known as varzea. Varzeas comprise 150,000 square kilometers of the Amazon basin, around 3 per cent, and are regions of rainforest that are partially inundated during a seven month long wet season. They have been called 'cradles of speciation' as they are vital

contributors to the overall ecology of the Amazon, allowing for the movement and dispersal of animals and plants when the waters rise, and their isolation when the waters subside. The MSDR provides a haven for 300 different birds, over 50 mammals, 400 fish and an endless diversity of invertebrates and plant life.

The MSDR is the vision of late forest ecologist José Márcio Ayres. His aim was to create a working model of the 'people in protected area' approach. The strengths of the MSDR lie in the fact that it excels in those areas that REDD does not. The project improved upon REDD's monitoring and auditing failures by regarding local communities as themselves agents of conservation. A participatory management plan was drawn up between Mamirauá Institute for Sustainable Development (IDSM) scientists and the 12,000 residents of the protected areas.

Such communities overwhelmingly rely upon logging and fishing, particularly of the dwindling Pirarucu fish, to sustain their livelihoods. The strategy identified where and how legitimate residents and users living within protected areas could profitably and legally harvest the resources within them. However, the community was also given the responsibility of safeguarding biodiversity through carrying out conservation and monitoring activities in a community-based surveillance system. Any restrictions on harvestable quotas were compensated by a share of the revenue from ecotourism.

The MSDR approach also appreciated that an alliance between traditional and scientific knowledge was the best way forward. In effect, says Dr Miguel Angel Pinedo-Vasquez of Columbia University, the approach has shifted from asking 'How do we save the rainforest?' to 'how do we save the Amazonians, because it is they who are going to save the Amazon'. This was a dramatic change of emphasis: instead of paying communities to keep forests standing by hiring guards and relying upon markets, Marcios' plan turned communities from residents of the reserve to partners in its management.

A learning curve

The MSDR has been not been without its problems, however. The relationship with its sponsor, the UK Department for International Development (DfID), lacked clear lines of communication and this led to misunderstandings as to what the initiative was actually trying to achieve.

Cristina Inoue, who co-wrote the IIED report and is now a professor at the University of Brasilia's Institute of International Relations, says this was rooted in policy changes within DfID. The then Secretary of State for International Development, Clare Short, viewed environmental projects as a side issue compared to the ravages of poverty, and insisted on a shift of focus specifically onto poverty reduction. The MSDR team prioritised the sustainable use of biodiversity. Failing to appreciate the interconnectedness of these issues in subsistence societies, DfID refused to extend its funding which caused the project to close temporarily in 2002. For DfID, says Inoue, it was 'too expensive a project, too much to help too few people'.

The MSDR also faced opposition from commercial logging and fishing groups, and also the Regatoes. These outside traders exploit local communities by obtaining their produce, such as fish and timber, for very low prices and exchanging them for essential goods, such as medicine and diesel, for an exorbitantly high price. They are often the only trading link through which communities can sell goods to the outside world, and without representative and collaborative institutions, this patron-client relationship had become deeply entrenched.

'How do we save the Amazonians, because it is they who are going to save the Amazon'

But these problems are slowly being tackled. Marcios realised that for mechanisms to work and funding to be attained, strong institutions are needed on a permanent basis. To this end, communities were given a key role in marketing their own products by creating community associations. The Sociede Civil Mamiraua (SCM) was founded in 1992, linked to and funded by the Ministry of Science and Technology, to coordinate what it called an 'Economic Alternatives Programme'. Amongst other successes, the SCM has contributed to a rise in the average household income within the MSDR of between 50 and 99 per cent in some areas, whilst overseeing the stabilisation and increase in a number of key wildlife populations.

So could it work elsewhere? Some worry that replicating the MSDR model could be hampered because it is very much the product of the varzea environment, which has implications for how infrastructure is embedded within different habitats. It requires a set of ingredients - notably high levels of biodiversity - to get scientists interested, and socio-economic incentives to get communities on board.

However, the general situation at Mamiraua is not unique: there are poorly governed resource-rich regions the world over requiring protection in the face of growing human needs. To this end, the MSDR has set a life-saving trend. Marcios' pragmatism allowed him to dream the virtually impossible, the creation of SDRs linked by ecological corridors, five in the Amazon and two in the Atlantic Forest. Slowly, his dream is coming to fruition. In 1997 the Brazilian government created the 22,000 square kilometre Central Amazonian Corridor by linking the MSDR and its sister reserve, the Amana SDR, with the Jau National Park.

Several other reserves have also been founded across Brazil and there are negotiations for the construction of further corridors spanning biomes and borders, with Ecuador and Paraguay, among others, answering the call.

Unanswered questions

Admittedly, there are certain questions to which the SDR approach in isolation has no answer. Water pollutants originating outside of the reserve, for example, require an external solution. Some, whilst acknowledging the merits of the SDR approach, question its conceptual foundations. 'How can you do "sustainable" development?' asks Inoue, 'we just don't know yet'.

Improved health and higher incomes are great, she argues, but if replicated on a larger scale 'we could get a form of consumerism which means more use of water and electricity and more garbage, in the middle of a river so that you cannot do anything about it'.

Inoue notes that the MSDR team has not explored 'alternative development' methods, incorporating a wider debate on how we see life, material goods and equality when we enjoy increasing livelihoods.

Most believe that it will take all sorts of policy combinations, SDRs, protected areas, indigenous reserves and everything else in between to save the Amazon. There is little doubt that many conservation efforts will continue to look to REDD for funding, but if REDD focuses too much on carbon emission reductions it is unlikely to spawn attractive projects.

If, however, REDD policymakers start to see conservation as more of a social issue, and incorporate social values and local ownership within its remit, then there is hope. That would give the SDR approach – of handing power and responsibility for managing reserves over to their inhabitants – a real chance to shine.

Nicholas Bruschi is a freelance journalist

An artist's impression of the new Peterborough 'Energypark' waste treatment plant

The new green face of incineration technology?

Incineration is a dirty word amongst environmentalists, its reputation earned through the use of outdated technology. Could new techniques help bring green approval to energy-from-waste facilities? By Mark Jansen

Chris Williams is an entrepreneur with a lot on his mind. Within six to eight weeks, he hopes to finalise a funding deal worth £420m that will enable him to build a waste processing plant in Peterborough which he claims will turn 650,000 tonnes of rubbish every year into renewable energy and recycled materials. A group of six American insurance and pension fund investors is poised to lend him the money, Williams says, against the income he will receive from UK power companies for electricity generated from rubbish and from the sale of reclaimed materials.

'We are extremely close,' says Williams. 'The UK banks are in an atrocious state... [but] the States are eager to be involved.' If the funding deal comes off, Williams should be able to start building the plant this year.

Williams is managing director of Peterborough Renewable Energy Ltd, known as PREL. The company, which won planning permission for the plant from the Department for Energy and Climate Change in November last year, promises to use state-of-the-art technology to extract the maximum possible value from the waste it processes.

First, recyclable materials such as plastic and metal will be removed from the waste using mechanical sorting equipment and sold on to local recycling companies, PREL promises. What remains is classed as biomass, which will be burned at very high temperatures in a low-oxygen environment. This process, known as gasification, is said to extract far more energy per tonne of waste than traditional incineration while producing fewer toxins that need to be scrubbed out.

As the term implies, gasification produces a gas that PREL will burn to heat water to make steam, which will drive turbines to generate electricity. The ash residue can be used as fertiliser, PREL says.

The plant will also use plasma chambers to convert batteries, glass, lightbulbs, grit and sand into new metal alloys, hydrochloric acid, mercury (from lightbulbs) and sulphur products. Plasma technology uses an arc of electricity to break waste material down into its most basic elements.

Williams argues that the 'green energy park', as PREL terms it, will have significant environmental benefits, principally that it takes waste that would otherwise go to landfill and turns it into green energy. The

park is projected to export of 52 megawatts to the national grid after a small proportion of the energy is deducted for powering the plant's own systems. He stresses that unlike incinerators, PREL will only gasify the biomass element of the waste it handles, while plastics and other materials will be recycled.

Those opposed...

Yet PREL has its critics. One objection is that because the plant is so large, with its 650,000 tonne annual capacity, huge amounts of waste will have to be transported over long distances by road in order to feed it. In addition to raising CO_2 emissions, critics claim this will discourage local recycling and self-sufficiency in dealing with waste.

There are also doubts about whether the technology will deliver in quite the way PREL promises. Williams admits his park will be the first to combine all the new technologies onto a single site, but says the individual processes have all been proven at other plants in Japan, the US and elsewhere. 'We are unique in the our combination and scale, but not in the technology we will use,' he says.

There are further questions over whether there will be enough waste to go round, as both Peterborough City Council and incinerator firm Covanta are proposing to build their own waste treatment plants in the area. The East of England Regional Assembly was consulted on PREL's planning application and objected to the scale of the plant. 'The question is, how will they feed this machine?' says Deborah Sacks, regional planning officer.

The assembly was concerned that PREL will import large amounts of waste from London, where recycling rates are much lower than the national average, at 25 per cent compared to 37 per cent for England. 'Our policy is that each area should manage its own waste. London shouldn't be given the easy option of landfill or cheap incineration in the East of England. It would be more sustainable to recapture and recycle materials in London,' says Sacks.

She adds: 'I don't have a problem with the technology [PREL is using], but I think the plant should be a fifth of the size they are proposing – then you can locate them in the communities they serve and you won't have massive overcapacity holding back recycling and composting in the region.'

The planning permission granted to PREL stipulates that 80 per cent of the waste it handles much come from within a 32km radius, or from within the boundaries of Cambridgeshire and Peterborough. Sacks says these restrictions are easy to get around, because waste from say, Birmingham, can be carried to a transfer station within PREL's catchment area and then transported on to the plant. 'The reality is that it's very difficult to follow the path of waste,' she says.

Peterborough City Council did not oppose PREL's planning application but a spokesman for the council told the *Ecologist* that 'some people in our camp are asking whether they can get the financial backing to make it work.'

Regardless of PREL's plans, the council is making its own arrangements to build a new, much smaller facility of its own for turning the city's waste into energy, with a tenth of PREL's capacity. Three companies have been shortlisted to make final bids.

The council has not specified which technology should be used, although the spokesman says the council will be looking for an environmentally-friendly solution. 'We've always said PREL looks good on paper, but they haven't started work yet and we need something up and running by 2014 or 2015, because our landfill space is filling up fast and the conditions on it are becoming tighter,' says the spokesman.

In response, Williams says most of the waste handled by PREL will come from commercial, industrial and agricultural sources, which account for the vast majority of the 450 million tonnes of waste generated every year in the UK. Domestic waste collected by councils accounts for just 12-15 per cent of the total. Waste contracts with councils are expensive and time-consuming to bid for and PREL therefore decided not to bid for the Peterborough facility, Williams says. The proposed Covanta incinerator will target council waste and so not compete with PREL's facility, he adds. 'Within the East of England region, 10 million tonnes a year of commercial, industrial, agricultural and municipal waste is going to landfill. We are about removing the need to send waste to landfill,' says Williams.

'I don't have a problem with the technology, but I think the plant should be one fifth of the size'

Other approaches

Chris Williams is just one of many entrepreneurs who are currently seeking to build greener waste-to-energy plants. One industry source reckons there are at least 75 different waste-to-energy projects in the early stages of development in the UK.

This frenzied activity has been prompted by the rising cost of sending waste to landfill and the introduction of subsidies for new waste-to-energy technologies including gasification, its close cousin pyrolysis, and anaerobic digestion. Since April 2009, two ROCs, or Renewables Obligation Certificates, can now be claimed for every megawatt hour of electricity generated by these methods. The ROCs are worth about £40 each and can be sold on to the major electricity companies in order for them to meet their targets for renewable energy.

The UK Government is anxious to encourage waste-to-energy as part of efforts to reach 15 per cent renewable energy by 2020. According to research group New Energy Finance, only 8 per cent of our municipal solid waste was sent for conversion into energy in 2008, while Denmark, by contrast, sends more than half of its waste for thermal treatment. In 2007 the UK government published a new Waste Strategy which called for 25 per cent of municipal waste to be converted into energy by 2020. Meanwhile landfill taxes are rising rapidly, from £24 per tonne in 2007 to £48 currently to £72 in 2013, which will provide a strong incentive to find alternatives to burial. Most of our landfill sites have some form of methane harvesting plant upon them, but these only qualify for one-quarter of a ROC per megawatt hour of electricity generated.

Incineration currently dominates the UK waste-to-energy market, but the technique should eventually be surpassed by the emergent technologies. There are 20 incineration plants in the UK, with five more under construction or commissioned, but incineration is not classed as a renewable technology and does not qualify for ROCs. Last month a company called Enviroparks won planning permission to build a 250,000 tonne waste processing and energy plant on 17 acres at Hirwaun in south Wales.

The company wants to use technologies such as pyrolysis and anaerobic digestion, while the waste would come from local authorities, industry and agriculture. Enviroparks also aims to attract a commercial tenant onto the site, to whom it will supply heat and possibly electricity. David Williams (no relation to PREL's Chris Williams), director of Enviroparks, is now seeking to raise £90m from funders and hopes to start building late in 2011.

Yet Covanta is planning an incinerator with a capacity of 650,000 tonnes near Bristol that Williams admits could be a competitor for the region's waste. Williams is cautious about whether firms like his own and PREL will be able to break the incinerators' stranglehold on the waste-to-energy market. 'I think companies like ours have a long way to go to take over. Only ourselves and PREL have got planning permission at the moment... it'll take a number of years.'

Mark Jansen is a freelance journalist

Could open source technologies help us solve climate change?

'Open source' is a familiar concept to many web users, providing free, well-supported software across the internet. But could the same principles be used to rapidly disseminate low-carbon technologies around the world? By Jamie Andrews

The growth of the internet, with all the associated changes it has brought to our lives, has been driven in large part by freely available, non-proprietary technology. The ethos of sharing, formalised by carefully worded open source licenses, has allowed inter-connectedness to flourish in ways that we once never dreamed of. Could adopting a similar approach for carbon-mitigating technologies have the same effect in tackling climate change?

One of the main problems faced when making this comparison is the ease with which a curious teenager in their bedroom can easily download open source software. In contrast, building an electric car, wind turbine or solar panel, requires significant resources and design expertise specific to the physical characteristics of the location in question. That said, in recent times there has been a growth in open source hardware projects, beginning with those that straddle the software/hardware divide.

Hacking your home

Homecamp describes itself as the 'home hacking, automation and green technology community'. Based in the UK, and enabled by technologies like the Arduino, an open source electronics prototyping platform, members of the Homecamp community take energy monitoring devices like Current Cost, and install them in their homes.

By connecting devices to internet and mobile technologies, Homecampers are able to demonstrate such innovations as lights that switch off when a room is empty, or publishing their energy consumption online so that houses can compete for the lowest usage.

Homecamp projects are completed in the spare time of technologists and software engineers, and are fuelled by the enthusiasm of pushing technical boundaries and demonstrating achievements to their peers. Without the open data protocols of the internet, and the adoption of them by companies like Current Cost (which was the first to enable the connection of an energy monitoring device to the internet), Homecamp would not have been possible.

James Governor is co-founder of Redmonk, a company described as 'the first open source analyst company', and a contributor to the Greenmonk blog. An enthusiastic supporter of Homecamp and related initiatives, he believes that the principle of 'hacking' is key to finding the right technical solutions to climate change: 'We need to experiment, and share ideas, in order to develop grassroots approaches to reducing home energy consumption. Without open source there arguably would be no Homecamp.

'It's not just the source code that needs to be open, however: "open data" is just as important – sharing information leads to better outcomes, because we're talking about social change. Hacking climate data, creating mashups [new ways of visualising information] will be key to personal energy footprint reduction.'

Wind turbine from a scrapheap

A few thousand miles further south, in Malawi, an energy innovation of a very different type took place in 2002, when William Kamkwamba visited his village library in Malawi and applied the very rudimentary knowledge he learned to build a windmill capable of generating electricity for his parents' house in the village. Having collected the materials for the technology from a local scrapyard, William's story was hailed as a fantastic achievement of ingenuity.

Whilst on the surface there is nothing 'open source' about visiting a library and picking up basic engineering principles from a book, the sharing of knowledge and expertise is at the heart of how software engineers have contrib-

uted to the open source projects that are the foundation of the internet.

As the internet becomes more prevalent in the developing world, innovators like William should get access to more structured knowledge about how to develop clean energy technologies. In fact, in a talk given to the US thinktank TED, William cited access to the internet as one of the reasons that people in Africa were keen to connect to electricity such as that provided by his windmill. Once web access is in place the wealth of knowledge it offers puts the humble library to shame.

The Open Source Ecology project contains a wealth of information about how to get started with numerous carbon-reduction technologies. The project has an ambitious and inspiring vision, to develop a blueprint for replicable local initiatives worldwide to develop self-sufficient farms and villages by sharing knowledge and technology. Their aim is to develop a full toolkit that can be accessed and deployed from anywhere. In their own words: 'Our aim is the full integration of small-scale, adaptable manufacturing with sustainable agriculture to produce the Global Village Construction Set. With... the set in hand, people will be able to survive and thrive with a high quality of life that is not dependent on global supply chains, human exploitation, and environmental degradation.'

There are clearly similarities between hobbyist 'hacker' communities in the UK who are moving from software to energy-saving hardware, and the DIY attitude of a small number of entrepreneurs in developing countries. Both of these are being encouraged by easier and more open access to information and technical planning documents online. But is this really all that open source can bring to carbon reduction efforts?

The Commons

Josef Davies-Coates runs United Diversity, a social enterprise that shares the ideals of the Open Source Ecology project. He is quick to point out that without addressing the question of land, open technology may not realise its potential. 'Building common resources and maintaining shared infrastructure requires common land, money and media systems.

Community land trusts are like the real-life version of an open source software repository. The Open Source Ecology project is exciting because its members focus on cutting edge open source technology that facilitates massive cost-savings for those adopting it over purely commercial alternatives.

'But more than that, through projects such as the Factor E Farm [the demonstration project run by the Open Source Ecology team] in Kansas, they are beginning to incorporate a deep understanding of how land use and ownership relates to the changes to our society that open technology can bring.'

Whilst projects like Open Source Ecology are pioneering some fascinating and optimism-inducing concepts, the rather grim reality of the UN process and the global economy remains. Surely if we are to see real change, we need to address the macro: commercial projects, and (dare I say it) the market? Viewed from this perspective, it's less easy to fantasise about the possible parallels between distributed clean energy infrastructure and the growth of the internet.

The obvious thing that makes the clean technology sector unique is the collective challenge we face in addressing climate change. In contrast to deadlines imposed by nature, the development of the internet and associated technologies went at its own (albeit rapid) pace. Unlike with climate change, political leaders were not tasked with the challenge of ushering in the changes to our lifestyles; internet adoption has flourished due to the perceived convenience of moving online, and the commercial viability that has gone along with it.

When we look at the pressures politicians face when it comes to climate change, a very different picture emerges than the sketch above. It's a familiar story of leaders wanting to protect economic interests whilst at the same time guaranteeing emissions reductions. In this context, open source (or not) comes down to one thing, and one thing only: ownership of intellectual property.

Leaders in developed countries are extremely reluctant to do anything that compromises the commercial interests of companies that contribute to GDP. This rule seems to apply for planet-saving technologies just as in any other area. Under the status quo, if it can be patented, it will be, meaning that to access key technologies we may be faced with the curious dilemma of either making a few people incredibly rich, or perishing due to climate change.

One of the many sticking points at UN climate negotiations from Kyoto to Copenhagen has been on the subject of 'technology transfer'; that is, how to ensure that underdeveloped economies in the global south have the necessary access to technologies that have been patented by western companies and universities. By getting the right frameworks in place, poor countries should be able to 'leapfrog' dirty fossil-fuel-driven development and instead move straight to a clean energy infrastructure.

Key policy instruments introduced under Kyoto such as the Clean Development Mechanism (CDM) were supposed to address technology transfer, but in reality they have done little to enable developing economies to build sustainable ventures around proven technologies. At Copenhagen, debates around intellectual property stagnated, with little discussion about how to link practical policies with a coherent position on patent ownership.

One approach that has been suggested is 'compulsory licensing', a practice pioneered in the pharmaceutical sector, where companies are forced to licence their products in areas where there may not be a lucrative market. This approach has worked well in the distribution of anti-retroviral drugs in sub-Saharan Africa for the treatment of AIDS. But forcing a commercial company to license its product at a slightly lower profit margin is still a long way from the potentially explosive effects of open source.

The bigger picture

Shane Tomlinson works for think-tank E3G, leading a programme called 'Systems for Change'. He's a specialist in the intellectual property issues surrounding low carbon technology transfer. He believes that there are a number of practical steps that can be taken to improve the current situation.

'There is a need for nations to develop an ambitious technology framework in the UNFCCC which can deliver solutions for a globalised world,' he says. 'This should focus on agreeing a new international technology mechanism in Cancun; quadrupling public research and development support by 2020; and resolving differences on IPR in a pragmatic manner that reaffirms the flexibilities already available in international law and agrees to both protect and share innovations.'

To move the debate forward in the policy arena, open source must become a legal term. At present, the more mature open source hardware initiatives (such as Opencores) are largely focused on digital technologies, with licenses (such as the GNU Public License) borrowed from the world of software.

Some existing hardware initiatives are using the popular 'Creative Commons' set of licenses, which are often used for software, but are also used extensively for writing, photos and other creative works. Given the large number of proprietary components that often make up a technology, it's far from clear whether it would be feasible to simply apply a Creative Commons license across the board for low carbon technologies.

It's very easy to get bogged down in the details of specific projects, or particular policy concerns. Indeed, some may define the whole UN process as a huge bog of details and there are few people apart from lawyers who get excited about specific licensing arrangements.

But on a macro level, reducing the barriers to technology development and adoption is vital to enabling carbon reduction. Open source principles could hold the key. And aside from crunching the numbers of carbon reduction, on a more human level it could also unlock forces of individual and community empowerment currently lacking in the climate change debate.

Jamie Andrews is a freelance journalist and a founder of the website loco2travel.com

Planning - a dull subject that has a direct impact on some of the most important areas of our lives. One proposal to speed up planning has just been scrapped by the new Government. What will replace it, asks **Bibi van der Zee**

What will the coalition Government do about planning law?

So the IPC is dead before it even got going. You'd have to have a heart of stone not to feel a little sympathy for the folk at the Infrastructure Planning Committee, the quango designed to fast-track tricky planning decisions, who have spent the last year getting all their eggs in order, who finally began calling for applications to come in just two months ago, and who have been sitting, ever since, twiddling their thumbs and waiting to find out who is coming into power and whether they're going to get the axe.

The coalition Government included the announcement of its abolition in its agreement in May. But even as many cheer at the fall of what was seen as an undemocratic quango, they will also be waiting, with some trepidation, to see what will arise in its place. The IPC was, after all, the result of a seven year overhaul of our complicated and flawed planning system, the method that had been chosen by the Government to unplug our clogged up, expensive and incredibly slow planning courts. How will this new coalition Government do that now?

Before the IPC the Government had depended heavily on the secretary of state's veto. Planning applications for smaller constructions would go through the local council, with some particularly heavily contested projects (supermarkets for example) going to appeal at the regional level. Planning applications for larger structures like power stations – apart from the very largest such as railways which require an act of parliament – would go to the secretary of state and through a public inquiry (incredibly expensive, and time consuming, particularly for the unpaid campaign group that might be opposing them).

Even if the public inquiry turned down the application, the Government could overturn

the whole process. As environmental lawyer Charlie Hopkins told me a couple of years ago, 'the frustrating thing about this job, and something I'm seeing more and more, is that we'll win the public inquiry and then the decision will be overturned by the Government. As one QC put it to me; "Sometimes I really don't know why we effing bother"'.

What next?

It was, in short, a deeply imperfect system. Although it appeared democratic, decisions could be overturned at will. And the appearance of democracy also meant that it was agonisingly, impossibly slow. Labour was correct that it had to be reformed. But was the IPC the right answer? And will the Con-Dems be able to come up with something better?

Kate Henderson, chief executive of the Town and Country Planning Association, says: 'the whole idea of [David Cameron's proposed] "Big Society" suggests that the politicians are going to radically reform the planning system. And that includes getting rid of the regional tier, which has always been very problematic in terms of legitimacy and democratic accountability.'

Both the liberal and tory manifestos laid heavy stress on returning power to local hands, and their final coalition agreement promises a 'fundamental shift of power from Westminster to people', committing to promoting 'decentralisation and democratic engagement', and ending 'the era of top-down government by giving new powers to local councils, communities, neighbourhoods and individuals'. All that, and they promise to 'radically reform the planning system to give neighbourhoods far more ability to determine the shape of the places in which their inhabitants live'.

Local power

They have, moreover, committed themselves to implementing the Sustainable Communities Act, a private bill that went through under the last Government and which has huge implications for the abilities of local communities to make decisions about the shape of their area. Under the bill, citizens are able to form committees and come up with ideas that they think will improve their borough. The local council, if it agrees, will then put those ideas before the Local Government Association, who will shortlist the ideas they like most and put the requests to the secretary of state, who must, by law, consider and try to reach agreement on them. That last part, it has been hammered home to me by the man behind the bill, Ron Bailey, and also by its national coordinator Steve Shaw, is the really radical bit; the Secretary of State cannot simply ignore the requests but must try to enact them, or come up with a very good reason why not.

The first shortlist of requests went in last December, and campaigners are now waiting for the answers: among two hundred requests Islington asked to be able to take over empty shops for community use, in order to stop them becoming local eyesores; Birmingham wants to be able to introduce financial incentives to promote local renewable energy generation; and many councils are asking for greater powers to be able to decide which shops can open where, so that they can cut down on chain outlets and boost independents. If the Conservatives – who have backed the bill from very early on – carry out their promises, this bill could play a huge part in a massive transfer of power from Westminster back to local authorities.

But the big infrastructure knot which Labour tried to untie is still there. Doug Parr of Greenpeace says: 'There was a real issue of democracy and accountability with the IPC but this is one of those issues where you do feel torn. I'm not comfortable with reducing people's say in national issues, but equally you can't have stasis. We need to build infrastructure, and the planning system had reached the stage where we weren't building. Something needed to be done.'

'I would say that we usually get the right decision in the end, but it just takes far too long to get there'

Fast... or democractic?

The Con-dems have promised to replace the IPC with 'an efficient and democratically accountable system that provides a fasttrack process for major infrastructure projects'. Such a thing, unfortunately, is just not possible; you cannot be both democratic and fast. But if the democracy is abandoned, then the great difficulty is how we control what is built; who gets to decide what is wrong and what is right?

This will be the big struggle for the next two or three years, and it will trace the line of a deep divide in the country. For some, coal-fired and nuclear power stations are absolutely out of the question, while acknowledging that there is an urgent need to fast-track the many windfarms currently stuck in the planning bottleneck. For others the reverse will be true. Some want high speed rail, others want roads. If the stand-off is to be resolved the decisions will inevitably, in the end, be taken out of our hands. Many ask whether we can trust Government with this power.

Gemma Grimes of RenewableUK (formerly the British Wind Energy Association) saw the IPC as a positive step forward, taking planning issues out of the political arena, but hopes that some of the key reforms that came with it will be retained. She said:

'RenewableUK have been very supportive of the planning reforms brought about following the Planning Act 2008. Provided that key safeguards are retained, including the retention of clear National Policy Statements for the development of nationally significant infrastructure projects, and a defined one year timeframe for the determination of applications, we are content for the final decisions on applications to be moved from the IPC and taken by the secretary of state, as was previously the case'.

Ticking clocks

The big players are less equivocal: as far as power company E.on is concerned, the most important thing of all is that someone starts making decisions. 'We certainly want to see a streamlining of the planning system,' says spokesperson Jonathan Smith. 'At the moment with wind farms for example, we have a situation where local councils are still having a discussion about whether we need them or not, but that is a question which Government has already answered. Local councils should be dealing with the question of whether the wind farm is appropriate for the area; anything which can streamline these kind of debates would be welcome. I would say that we usually get the right decision in the end, but it just takes far too long to get there. Sizewell B for example took ten years to get through, and then five years to build.'

In a statement that illustrates just what a double-edged sword planning law is to environmentalists, Smith adds: 'Kingsnorth [coal-fired power station] is another case in point; we're now coming up to the fourth birthday of the planning application.'

For energy companies, as for other companies responsible for large infrastructure, the vital thing is to get going. 'At the moment we've had a bit of breather because the recession has reduced our energy demands,' says Smith. 'But several of our power stations will be closing soon and we face the possibility of an energy crunch after that. As far as E.on is concerned, we believe that you don't want all your eggs in one basket, you want a mixture of wind, wave and tidal (in the longterm), gas, clean coal and nuclear, if you don't want to risk the lights going out. We've been treading water for sometime, but decisions are going to have to be made.'

Bibi Van Der Zee is a freelance journalist

The US Minerals Management Service: behind the BP Deepwater Horizon oil disaster

BP is in trouble. Big trouble. But others are to blame for the oil leak in the Gulf of Mexico, and the MMS is top of the list says **Phil England**

On 20 April BP's Deepwater Horizon oil rig exploded. 11 workers were killed in the blast. According to the Center for Biological Diversity (CBD), the resultant oil spill is now the largest in US history – larger even than the infamous Exxon Valdez disaster.

From BP's original estimate of 1,000 barrels per day, experts now estimate that the rate could be nearer 70,000 barrels per day threatening the lives of many species – including many already endangered – in an area of rich biodiversity in the fragile Mississippi River Delta ecosystem. Some estimates for the total compensation bill for BP now come in at £18bn, and there will be a massive impact on the value of the company's already badly-tarnished brand.

In the wake of the disaster, there has been an eruption of investigations and inquiries: three different Congressional committees, the US Coast Guard and the Mineral Management Service (MMS) have all held public hearings, and the Justice Department has initiated an investigation that could result in criminal charges.

Most famously, representatives from BP, Haliburton and Transocean were grilled by the US Senate Committee on Energy and Natural Resources, in a session during which everyone sought to blame everyone else. But all this has overshadowed the fact that the real scandal here is the lack of proper regulation by the Obama Administration. The Administration has been falling over itself to give the go-ahead for new offshore drilling projects and actively ignoring the likelihood of environmental impacts.

According to The Washington Post, the Administration exempted BP from an Environmental Impact Assessment for the Deepwater Project when the MMS granted the company a license on 6 April 2009. This exemption (a 'categorical exclusion') was granted on the basis that the agency had already reached the conclusion that, in BP's own words, the 'impacts associated with the proposed action are minimal or non-existant'. Significantly, BP was also told (para 2.7) that 'a scenario for a potential blowout of the well (...) is not required'.

But it turns out that this was not a one-off error, but part of a systematic drive to open up offshore sites for drilling. Since January 2009 the Department of the Interior has given permission for more than 300 drilling operations, three lease sales and over 100 seismic surveys in the Gulf of Mexico without the necessary permits required under the Endangered Species and Marine

Mammal Protection Acts. On Friday (14th May) the Center for Biological Diversity (CBD) filed a formal notice of intent to sue Interior Secretary Ken Salazar for these breaches.

According to The New York Times, the MMS 'routinely overruled its staff biologists and engineers who raised concerns about the safety and the environmental impact of certain drilling proposals in the gulf and in Alaska (...) Those scientists said they were also regularly pressured by agency officials to change the findings of their internal studies if they predicted that an accident was likely to occur or if wildlife might be harmed.'

Concerns raised by the National Oceanic and Atmospheric Administration have also been ignored. What could possibly explain the Obama Administration's apparent rush to simply 'drill baby drill'?

- The fact that BP and and the rest of the oil industry has lobbied hard to extend offshore drilling? (BP alone spent $19m lobbying the US federal government in 2009 and gave more than $350,000 in campaign donations during the elections in 2008.)
- The fact that the MMS has a history of corrupt relations with the industry it is supposed to regulate?
- The fact that the MMS benefits financially to the tune of $13bn a year from the same companies to which it gives licenses?
- The fact that the oil industry, awash with funds from the 2008 spike in oil prices, and facing declining reserves is exploring increasingly 'innovative' and damaging sources of oil including excessively deep offshore exploration, tar sands and biofuels?
- The fact that Obama has embarked on an energy policy which puts the interests of the oil companies (and other vested interests) above the non-negotiable environmental limit imposed by climate change?

Later on Friday (hours after CBD had announced its lawsuit), President Obama appeared in the White House Rose Garden to make a speech that was a little more coherent attempt to answer the question posed to the White House Press Secretary on May 5th. He was flanked by a team of senior aides included Interior Secretary Salazar.

Rather belatedly he admitted that federal agencies should shoulder some of the blame:

'I've asked Secretary Salazar to conduct a top-to-bottom reform of the Minerals Management Service. This week, he announced that the part of the agency which permits oil and gas drilling and collects royalties will be separated from the part of the agency in charge of inspecting the safety of oil rigs and platforms and enforcing the law. That way, there's no conflict of interest, real or perceived.

'We've also ordered immediate inspections of all deepwater operations in the Gulf of Mexico. And we've announced that no permits for drilling new wells will go forward until the 30-day safety and environmental review that I requested is completed.

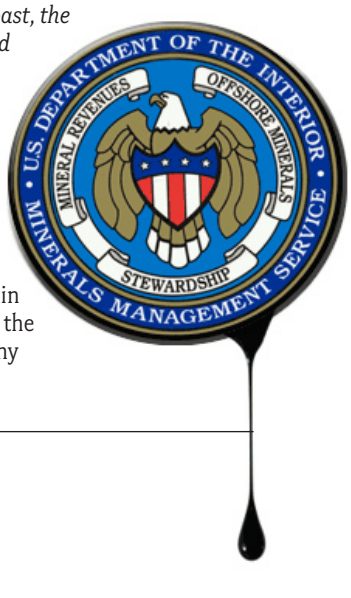
'We're also closing the loophole that has allowed some oil companies to bypass some critical environmental reviews. And today, we're announcing a new examination of the environmental procedures for oil and gas exploration and development.'

Hmm. Isn't that a little bit like locking ths stable door after the horse has bolted and putting the fox in charge of the hen house?

After Deepwater blew, the MMS continued to issue licenses for new offshore drilling projects without the need for environmental review. Between 20th April and 5th May the MMS issued a total of 27 new drilling licences and was still issuing licenses as recently as 13th May.

As for entrusting Ken Salazar with a 'top to bottom' reform of the MMS, it is Salazar who has been spearheading the expansion of offshore drilling. According to the CBD, in 2006 he sponsored a Bill to open up the Gulf of Mexico to offshore drilling and criticised the MMS for not issuing enough offshore licences, then in 2010 he designed the Whitehouse's proposal to extend offshore drilling. And it is Salazar who as Interior Secretary approves MMS decisions for offshore drilling.

Was the Center for Biological Diversity satisfied with Obama's statement? Hell no. Executive director Kierán Suckling said: *'The president should immediately rescind his March 2010 decision to expand offshore oil drilling to the Atlantic Coast, the eastern Gulf of Mexico, and Alaska. He should cancel Shell Oil's permit to begin a very dangerous offshore oil drilling project in Alaska this summer. He should put a real stop to all new offshore drilling approvals, and he should order the MMS to halt all oil drilling in the Gulf of Mexico approved without environmental review.'*



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