



The Tara Foundation magazine

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In Memoriam: Roger Casement

Executed August 3 1916

"Ireland that has wronged no man, that has injured no land, that has sought no dominion over others. Ireland is treated today among other nations of the world as if she was a convicted criminal. If it be treason to fight against such an unnatural fate as this, then I am proud to be a rebel and shall cling to my rebellion with the last drop of my blood."

"Self government is our right, a thing born to us at birth a thing no more to be doled out to us by another people than the right to life itself than the right to feel the sun or smell the flowers or to love our kind."

"If there be no right of rebellion against a state of things that no savage tribe would endure without resistance, then I am sure that it is better for men to fight and die without right than to live in such a state of right as this."

Ruairí Mhic Easmainn, a chuireadh chun báis ar an 3ú Lúnasa 1916. Ar dheis Dé go raibh a anam uasail.



<http://www.irishtimes.com>

On 25th July 2006, the Supreme Court made its third ruling in the Carrickmines case, dismissing the challenge by Dominic Dunne to section 8 of the National Monuments Act 2004. Section 8 is perhaps unprecedented in legal history, in that it *provides specifically for the completion of an infrastructure project*, the South Eastern Motorway (M50). However, there is more than that in the Act.

The 2004 amendment to Ireland's heritage legislation effectively emasculated the heritage protection regime by removing any safeguards on heritage. Under the Act, it is up to the Minister for the Environment to decide what is to become of a national monument. According to Section 5 (4) of the Act, the Minister may, "*at his discretion*, issue directions to the road authority concerned for the doing to such monument of *one or more* of the following matters - (i) preserve it; (ii) renovate or restore it; (iii) excavate, dig, plough or otherwise disturb the ground within, around, or in proximity to it; (iv) make a record of it; (v) *demolish or remove it wholly or in part or to disfigure, deface, alter, or in any manner injure or interfere with it* [emphasis added]." In case this might appear

too obvious, the Act goes on to require the Minister to "consult in writing" with the Director of the National Museum before issuing his directions. However, it is made clear that consultation is all that is required. In the end, it is up to the Minister to decide the fate of a national monument, and there are no limits placed on his powers to so decide. Nor are archaeological considerations to be given undue emphasis. Section 5 (6) states that the Minister "is not restricted to archaeological considerations but is entitled to consider the public interest [nowhere defined in the Act] notwithstanding that such exercise may involve – (i) injury to or interference with the national monument concerned, or (ii) *the destruction in whole or in part of the national monument concerned* [emphasis added]." The Act would be better referred to as the National Monuments Destruction Act 2004, since the legalization of heritage destruction is its primary purpose.

Section 8 deals specifically with the South Eastern Motorway. "The consent of the Minister... shall not be required in relation to the carrying out of works affecting any national monument in connection with the completion of the South Eastern Route", and again states that the "public

interest” may require the complete destruction of a monument. Next are specified certain factors for consideration by the Minister “to the extent that they *appear to the Minister to be relevant* in exercising discretion to issue directions in respect of a national monument [emphasis added],” including maintenance of heritage, perceived economic benefit “[accruing] to the State”, the “cost implications”, and “any matter of policy of the Government, of the Minister or of *any other Minister of the Government* [emphasis added]”. Not only is any statutory State protection of heritage eliminated, but the Minister’s own Department is made an adjunct of the policy requirements of other branches of Government. The purpose of including a special section on the South Eastern route could be to justify the claim of former Environment Minister, Martin Cullen, that the Act was introduced specifically in response to the interlocutory injunction granted by the Supreme Court, which halted work on the Motorway on the grounds that Carrickmines Castle was threatened with destruction, in which case it is emergency legislation and hence, as is always the case, bad law. Or the Carrickmines case was seized on as a pretext for abandoning the cloak of concern for heritage on the part of the State, and this section was specified to provide

that appearance, in which case it is irresponsible law. The latter is to be considered more likely, for it is difficult to believe that a Minister would sponsor such a radical overhaul of legislation for the purpose of dealing with a single case.

What is interesting about the latest Supreme Court judgement on Carrickmines is what was carefully excluded from media reports. The Chief Justice in his decision stated the following: “[I]t is not inconceivable that in a hypothetical case, a person in the position of the plaintiff might successfully challenge a statutory measure on the basis that it purported to permit a clear-cut breach of the State’s duty to protect the national heritage. As noted by the learned trial judge, this is not such a case.”

What this means is that a case taken against the constitutionality of the National Monuments Act 2004 on the grounds that it removes, or does not provide for, a duty on the part of the State to protect heritage is likely to succeed. Mr. Dunne objected to the destruction of Carrickmines on environmental grounds.

The day after this judgement was handed down, an order which had been sought by the Criminal Assets Bureau (CAB)

was granted by the High Court against Jim Kennedy and solicitor John Caldwell, owners of Jackson Way Properties, freezing €61 million worth of land at Carrickmines. Jackson Way is suspected to have bribed members of Dún Laoghaire-Rathdown County Council for the rezoning of property from agricultural to industrial at a special meeting of the Council on 16th December 1997. After making a claim of €116 million in “compensation” for the compulsory acquisition of lands along the M50 route by the Council, Jackson Way were eventually paid €12.8 million, of which €9.6 million was for the land acquired. According to CAB, €4.2 million of that amount represents “corrupt enrichment”. The motorway lands are simply part of a huge tract in this area amassed by Jackson Way by corrupt means. The State has a lot to answer for in this scandal:

- a) why Jackson Way decided to amass huge quantities of land around Carrickmines in the first place, if not because they had been assured that rezoning

would take place in connection with a huge new motorway;

- b) why the State decided to build the motorway southward of the route agreed, so that it bisected not only the Jackson Way property but Carrickmines Castle;
- c) why the State’s deal with Jackson Way is not to be regarded as a criminal enterprise, and the lands acquired by the State to be considered the proceeds of crime, and confiscated as such.

Once the M50 has been completed by destroying Carrickmines Castle and the extensive associated archaeology, upgrades are to commence to expand as yet unfinished road into an eight-lane superhighway. The bill - for these upgrades alone, and not for the project as a whole - has risen from €800 million in 2004, to *€1 billion*. At those rates, the M50 will be an even more wasteful project than the Dublin Port Tunnel, and the most costly infrastructure folly in Irish, if not European, history.

The Dunquin Oil Giveaway Part II

Exxon-Mobil's Environmental Record

The source for this article is *The Dirty Four: The Case Against Letting BP Amoco, ExxonMobil, Chevron, and Phillips Petroleum Drill in the Arctic Refuge*

by Athan Manuel, U.S. Public Interest Research Group
(<http://www.pirg.org>) (March 2001)

Exxon-Mobil's Environmental Record is most apparent in Alaska, one of the last unspoiled areas of the world, but increasingly one of the most polluted.

Exxon-Mobil are among the so-called "Dirty Four" – Exxon-Mobil, BP, Chevron and Phillips Petroleum – who have been issued with licenses for drilling in Alaska.

Exxon-Mobil's environmental record includes the following: The 1989 Exxon-Valdez Alaskan oil spill was the greatest environmental disaster in U.S. history (p.23). Eleven million gallons of crude oil from the Exxon Valdez fouled 1,500 miles of beaches and polluted three national parks and four national wildlife refuges. The disaster demonstrated that one catastrophic spill can devastate the fragile ecosystem and economy of a region. One industry commentator noted: "...the Exxon Valdez showed... [that] there is no room for even a moment's relaxation" (p.23).

The oil spill killed more wildlife than any other spill worldwide –

and ten times as many birds as any other US spill. At least 250,000 birds, 300 harbour seals, 2,800 sea otters, and possibly 13 whales died. Human communities also suffered greatly. Commercial fishing harvests declined substantially. Twenty-four archaeological sites on public lands are known to have been adversely affected by cleanup activities or looting and vandalism linked to the oil spill. The effects of the spill are still evident. A report from the panel overseeing restoration of Alaska's Prince William Sound says that only two of the nearby two dozen affected species are fully recovered. Among the species recovering are common murre, a seabird accounting for about three quarters of the 30,000 oiled bird carcasses collected in the four months after the spill. Clams and mussels are still recovering after the spill. Six species of birds and marine mammals – common loons, cormorants, harbour seals, harlequin ducks, pigeon guillemots and a key population of killer whales have shown no significant recovery. The only two species to have fully recovered are

the bald eagles and the river otters. Another study found that *oil is 100 times more toxic to developing fish than was previously thought to be the case*. Two types of trout, the pink salmon and the rockfish, face an uncreasingly uncertain future. (p.23).

In 1991, the US Environmental Protection Agency filed complaints against Exxon, British Petroleum, and the Alyeska Pipeline Service Corporation for dumping ballast water wastes at the Valdez Alaska tanker terminal. In October 2000, the US Supreme Court refused to throw out the *\$5 billion punitive damages* verdict against Exxon-Mobil for the Valdez spill. Exxon-Mobil has made *several appeals against the ruling*, but none have been accepted. (p.23). However, there have been many other such incidents:

- On January 1 1990, 567,000 gallons of oil spilled from an Exxon pipeline into the Arthur Kill waterway between Staten Island and New Jersey. In February 1990 the City of New York sued Exxon for the submission of false pipeline safety reports. Prior to the lawsuit Exxon admitted that its leak detection system had not worked properly for 12 years. Exxon settled out of

court a year later, agreeing to pay \$10 to \$15 million on environmental improvements. (p.19).

- Oil that leaked from Exxon's Paulsboro, New Jersey petroleum storage facility has contaminated groundwater and soil in southern New Jersey.
- In January 1989, an Exxon pipeline spilled 588,000 gallons of crude oil in Eugene Island, Louisiana. (p.20).
- An Exxon-owned service station in East Meadow, New York leaked 30,000 gallons of gasoline in 1978. Exxon bought 23 nearby homes, and twenty-one families agreed to settlements of \$8,000 per adult and \$3,000 per child. The company paid a total of \$5 to \$10 million to remedy problems caused by the leak.
- In 1970 gas stations owned by Exxon and Mobil contaminated an aquifer in Richmond, Rhode Island. The US Environmental Protection Agency ordered the companies to provide drinking water to about 15 homes and clean up the aquifer and surrounding soil (p.20).
- In August 1998, Exxon and Tosco agreed to pay \$4.8 million in damages and for environmental restoration

- after discharging selenium, a carcinogen, into San Francisco Bay (p.21).
- In August 1998, Exxon was ordered to pay \$35,000 to four plaintiffs as part of the Campbell Wells oilfield waste suit. The residents of Grand Bois, Louisiana, sued Exxon and Campbell Wells alleging that the waste exceeded limits on toxins such as benzene, a known carcinogen.
 - In October 1996, Exxon paid a civil penalty of \$73,000 for violating the Resource Conservation and Recovery Act and \$116,000 for Clean Water Act violations at its Baton Rouge, Louisiana refinery.
 - Exxon is a PRP (Potential Responsible Party, i.e. have accepted responsibility) for 41 hazardous waste Superfund sites in seventeen states.
 - In 1991, the US EPA fined Exxon \$125,000 for discharging contaminating fluids from service stations into or directly above underground drinking sources (p. 21).
 - ExxonMobil agreed to pay \$7 million to settle claims it underpaid royalties for oil it extracted from federal lands in 2000. This was part of a \$282 million agreement reached by 10 oil companies for the underpayment of the US government by hundreds of millions of dollars in drilling royalties on federal land in the western United States (p. 22.).
 - Alabama court returned a verdict in December 2000, finding that Exxon had defrauded the state on royalties from natural gas wells in state waters. The jury awarded the state \$87.7 million in compensatory damages and \$3.42 billion in punitive damages.
 - Exxon agreed to pay the Texas National Resource Conservation Commission \$600,000 for the dumping of almost *two billion gallons of chemical wastewater* from their Baytown, Texas refinery.
 - Exxon-Mobil is part of an international consortium of oil companies engaged in constructing an oil and gas pipeline from Southern Chad to the Cameroon coast, slashing through the traditional homelands of the Baka and Bakola indigenous peoples.
- Exxon-Mobil is part of a consortium that is bidding for access to the coastal plain zone of the Arctic, one of the last unprotected ecosystems in the world. It is home to large populations of caribou, musk

oxen, all three species of bear - brown, black and polar – grey wolves, Dall Sheep, snow geese, and literally hundreds of species of migratory birds. (p.8).

The Arctic ecosystem is one of the most fragile in the world, its plants are more sensitive to air pollutants than species in warmer climates. Lichens, an important food source for caribou, are highly vulnerable to air pollution. Toxic substances linger for longer periods than in more temperate areas, and therefore the impact of oil spills are more far-reaching. The Arctic's short growing season leaves little time for regeneration when species are harmed. Due to the short food chain, the loss of a single species can have disastrous consequences for others. (p.9).

Arctic subsoil remains frozen for the whole year. Since only the top layer of soil thaws in the summer and most of the coastal plain is flat, the drainage is limited. This means that much of the Arctic consists of wetlands. In wetlands, along with low summer temperatures, organic materials decompose very slowly. Low temperatures, a short growing season, and restricted nutrients limit plant growth. (p.9).

Any disturbance to the tundra will damage the insulating organic mat covering the permafrost, causing the ice to melt and the permafrost to collapse. This process is known as

thermal erosion, or “thermokarst”.

Prudhoe Bay, the area to the west of the Arctic refuge and the starting point for the Trans Alaska Pipeline System (TAPS), was once the largest intact wilderness area in the US, now holds one of the world's largest industrial complexes. Development here has permanently altered more than 400 square miles of pristine wilderness: there are now more than 1,500 miles of roads and pipelines and thousands of acres of industrial facilities. (p.10).

A 1988 US Fish and Wildlife Service report on drilling on the North Slope found that destruction of habitat has led to more than 15,000 birds being killed or displaced, an undetermined number of polar and brown bears killed as “nuisances,” and that intake from just one seawater treatment plant annually kills up to 400,000 larval fish.

The numbers of bears and wolves have declined in the Prudhoe Bay area. More than 43,000 tons of nitrogen oxides pollute the air each year at Prudhoe Bay (p.10). This is more than twice the amount emitted annually in the Washington DC area (p.11). There is decreased caribou density within 4km of pipelines and roads.

Hundreds of spills involving tens of thousands of gallons of crude oil and hazardous waste occur annually. In 1995 alone, approximately 500 spills occurred involving more than 80,000 gallons of *oil, diesel fuel, acid, biocide, ethylene glycol, drilling fluid, produced water*, etc. That is one spill *every eighteen hours*. Gravel fill, excavation and waste disposal alone have destroyed 12,000 acres of wildlife habitat and 508 acres of marine and estuarine habitat. Oil facilities may emit up to 100,000 metric tons of methane every year, a greenhouse gas contributing to global warming (p.10).

Every day, oil industry operations generate 3,000 cubic yards of drilling waste, which can contain toxic metals and additives, 40 million gallons of ‘produced waters’ or ‘toxic brine,’ brought up along with oil from wells, 40,000 gallons of liquid oily waste, and 300 cubic yards of oil-

contaminated solid waste and sludge (p.10).

All this is the result of drilling activity in the Arctic’s North Slope and is an indication of what awaits the coastal plain of the Arctic if intensive drilling begins there. The indigenous Gwich’in (“people of the Caribou”) of the Arctic inhabit this region, as they have done for more than 20,000 years. They depend on the annual Porcupine River Caribou herd migration, and to them the coastal plain is sacred. (An article for the Casement Outlook on the Gwich’in will be available shortly). The “development” of Alaska is a strong indication of what awaits the West Coast of Ireland should intensive oil and gas development take place there. In the next issue we will examine the issues connected with the current round of oil and gas licences issued by the Irish Government.

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A Legal Challenge to Colonialism

The origins of the concept of odious debt lie in the 1898 peace negotiations after the Spanish-American war. The United States argued that neither the United States nor Cuba should be responsible for debts incurred by the former colonial rulers without the Cubans' consent and not for their benefit. Spain never accepted this argument, but the American position prevailed, and was ratified in the Paris peace treaty. The concept was formulated as a legal doctrine by Alexander Nahum Sack, a former minister in Tsarist Russia who worked in exile after the Russian Revolution as a professor of law in Paris. Sack's works, *The Effects of State Transformations on Their Public Debts and Other Financial Obligations* and *The Succession of the Public Debts of the State*, concerned themselves with the practical problems created by the transformation of colonies into new nation states and the rise of new forms of government. Sack believed that liability for public debt should remain, for debts remain obligations of a state, understood as the national territory rather than as a particular governmental structure. His concern was the requirements of international commerce rather than any notion of natural justice; he believed that

without regulation, international finance would break down and relations between countries would be plunged into chaos.

However, he did not include in this general rule debt not incurred in the interests of the state: certain debts were "odious. In Sack's definition, "When a despotic regime contracts a debt, not for the needs or in the interests of the state, but rather to strengthen itself, to suppress a popular insurrection, etc, this debt is odious for the people of the entire state. This debt does not bind the nation; it is a debt of the regime, a personal debt contracted by the ruler, and consequently it falls with the demise of the regime. The reason why these odious debts cannot attach to the territory of the state is that they do not fulfil one of the conditions determining the lawfulness of State debts, namely that State debts must be incurred, and the proceeds used, for the needs and in the interests of the state. Odious debts, contracted and utilized, for purposes which, to the lenders' knowledge, are contrary to the needs and the interests of the nation, are not binding on the nation – when it succeeds in overthrowing the government that contracted them – unless the debt is within the

limits of real advantages that these debts might have afforded. The lenders have committed a hostile act against the people, they cannot expect a nation, which has freed itself of a despotic regime, to assume these odious debts, which are the personal debts of the ruler.” [1] To avoid abuse of the doctrine, Sack held that a claim for odious debt by the new government must establish that the debt did not serve the public interest and that the creditors were aware of this. If the creditors were unable to prove before an international tribunal that the funds were used for the benefit of the people, then the debt was unenforceable.

The odious debt principle has been invoked recently with regard to notorious regimes, for example the South African Apartheid government and the Somoza dictatorship in Nicaragua. Though the Archbishop of Cape Town and the Truth and Reconciliation Commission both argued for the writing-off of South African debt, large percentages of which was incurred in funding the military and police, the Mbeki government accepted responsibility for the debt. Though Somoza was said to have embezzled between \$100 million and \$500 million by the time he was ousted in 1979, and Sandinista President Ortega told the UN General Assembly that

this debt would be repudiated, Cuba advised the Nicaraguan government that doing so would alienate foreign investors. Similar cases of tyrannous rulers borrowing huge amounts of money and leaving the resulting debt for repayment by the population are Mobutu in the former Zaire, who accumulated a \$12 billion foreign debt, and Marcos in the Philippines, who borrowed \$28 billion from foreign creditors and held personal assets of an estimated \$10 billion. The rationale for repaying is a strong one: if a country simply defaulted on an odious debt, even though it would be entirely justified in doing so, its assets abroad could be seized and its reputations tarnished, making the acquisition of foreign capital for legitimate purposes extremely difficult. For this reason, the principle of odious debt has not gained much ground. Indeed, Sack’s worries about abuse of the doctrine have so far gone unrealized that the opposite scenario now prevails – all debts are expected to be repaid without regard to the character of the debtor or the use to which the funds were put.



Mobuto of former Zaire accumulated a \$12 billion foreign debt (Image: Wikipedia.org.)

It could be argued that, on the principle of democratic accountability, if a government's extravagant spending cannot be established to be of benefit to the people who elected that government (consider for the sake of argument that the government is democratic, in which case victims of unelected regimes have an even stronger case), even though the government acts on the basis of a mandate and claims to act in the interests of the people, then the debt ought to be written off as a product of misgovernment and corruption.

In Ireland, there is a lot of scope for classifying borrowing as bad debt. It is now part of State policy to conceal the extent of its borrowing by employing private accounting firms (themselves well-practiced in deceit and embezzlement) to fiddle its budget figures and, instead, invent budget surpluses where there are none. Ireland currently

gives away all of its natural resources to foreign corporations. In recent years significant discoveries of oil and gas have been made off the Irish coast, but the State will not spend the modest figure required to investigate these resources and devise a way to exploit them in a way that will best benefit the population. Instead, the companies own the oil and gas they discover, report findings as they like without monitoring, and can drill as and when market conditions are favourable thanks to 20-year foreshore licenses. The oil and gas companies can write off all their expenses against the 25% tax rate, backdated 20 years, and has no obligation either to land the oil and gas or sell it to Ireland; instead, Ireland must buy its own oil and gas at the market rate. Under any point of view, the energy regime yields no possible benefit to Ireland; on the contrary, the population must fund the extraction of these resources and the construction of infrastructure for the companies' use. The companies do not need to base their operations in Ireland at all; for tax purposes, they just need to maintain an office in Ireland, and control the operation from abroad, as with the Corrib gas find. Likewise with the "Irish Financial Services Centre" on Dublin's quays: this is merely a tax scam; front companies for American corporations maintain an office in Ireland to avoid

paying tax at home. The taxpayer must foot the bill not only for the tax cuts enjoyed by the corporations, but also for the office buildings provided for them on State land. In these instances, a case could be made that the population is not liable for the debts incurred through funding foreign capital.



The M8 at Charing Cross in Glasgow (Wikipedia.org)

Wasteful prestige projects such as the Dublin Port Tunnel, the South Eastern Motorway (M50) and the M3 are also candidates. The Tara Foundation revealed some months ago that the announcement by the Progressive Democrats of a “new” plan to move Dublin Port had in fact been proposed by the ESB 15 years before, and in the context of the projected capacity of the Port, which even then was seen to be inadequate. Yet the State proceeded with renovations to the existing facilities and the enormously costly Dublin Port Tunnel, all the time aware that the

future expansion of the Port would necessitate a drastic solution such as the relocation of the facilities elsewhere, and hence the redundancy of the expensive Port Tunnel. Even now, the opening of the Tunnel has had to be postponed from the optimistic date of summer 2006 previously announced, owing to persistent structural problems including cracks in the concrete roof, and the taxpayer will have to pick up the tab for the technical incompetence of the engineers, on top of construction costs of at least €1 billion for a tunnel that PD policy has admitted is wholly redundant.

The routes of both the M3 and the M50 were changed to run directly through the Tara-Skryne Valley and Carrickmines, and by coincidence through land owned by speculators. The upgrades alone to the M50, expanding six lanes to eight, will cost the taxpayer a minimum of €1 billion euro. The M3 Motorway promises a veritable speculator’s dream of rezoning opportunities, and if the experience of the M50 is anything to go by, county councillors’ rezoning decisions are easily bought. Motorway construction, especially of the scale and character being pressed forward by the State, is a financial black hole, and to tell from the complete lack of an integrated transport plan on the part of the Government, of which a sensibly

planned road network would form an integral part, that would seem to be what is intended. In fact, a credible argument could be made that motorway construction is exactly what is keeping the false economy going, based as it is on providing a State-funded bonanza for property developers and land speculators, for international finance by way of the debt industry, and for easily purchased State officials.

This is not to mention the numerous wage increases and benefits granted by the State to itself, which if demonstrated to be

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Footnote:

[1] Quote taken from Wikipedia.org, 2/8/2006.

unwarranted could form another instance of public debt incurred without benefit to the public.

All told, the principle of odious debt, though long out of favour, may enjoy a revival, what with the increasing tendency of globalized finance to pervert politics and create political lackeys to do its will, and the resultant increase in public discontent with the blatant oppression and extortion that are the inevitable symptoms of the disease.

<http://www.tara-foundation.org>

The Harmful Effects of Palm Oil: Part II

The source for this article is *Cruel Oil: How Palm Oil Harms Health, Rainforest and Wildlife*, Centre for Science in the Public Interest. 2005 (<http://www.cspinet.org>).

Palm Oil is a huge agricultural commodity. It has been predicted that by 2012 it will become the world's most produced, consumed and internationally traded edible oil. Global production, consumption and trade in this oil have increased greatly since the 1970s. In 2002, palm and palm kernel oil accounted for almost 50% of total global exports of oils and fats. From 1997 to 2001, global production grew by 31%, consumption by 34% and global exports by 43% (from STG£26.6 billion to 38.7 billion) (p.6). The world's largest importers over this period (1997-2001) were India, China and Pakistan, followed by the Netherlands, Britain, Egypt and Germany. U.S. palm oil imports occupied a much smaller percentage of the global market during these years. However by 2001 the US was the second largest importer of palm kernel oil (p.7).

The principle reason is that Palm Oil is heavily promoted as a healthy and nutritious alternative to hydrogenated vegetable oil, a major cause of heart disease. A US

government regulation requires that food labels list a product's content of trans-fats, which come from this partially hydrogenated vegetable oil. Palm oil is one such alternative. (p. iv).

In the US, if companies replaced the 2.5 billion pounds of partially hydrogenated oil used annually in foods needing solid fat with palm oil, US palm oil imports would triple over the 2003 level. This increase alone would require about 1,240 sq. miles of new oil plantations – an area representing rainforest habitat for for up to 65 rhinos, 54 elephant families, 65 Sumatran tigers and 2,500 orangutans. More healthy substitutes are available for most food applications in which partially hydrogenated oil and palm oil are used (p.v).

Palm oil is an edible oil derived from the pulp of fruits of the oil palm (*Elaeis guineensis*). It is used around the world in such foods as *margarine, shortening, cooking oil, soups, sauces, crackers and other baked goods and confectionary products*. It can be substituted for hard animal

fats (butter and lard); for soy, olive or canola liquid vegetable oils; and for partially hydrogenated vegetable oil, which are a staple of the baking, fast-food and other industries. (p.2). In the US, palm oil is used together with soy, canola or other oils in many products. While use of Palm oil in the US is low compared with Europe, India and China, the FDA Trans-fat Directive has greatly boosted sales, with a 50% increase in importation of palm oil in the US in 2004.

Trans-fats, created when liquid soybean oil is hydrogenated to create a solid, more stable form, is a potent promoter of heart disease. Trans-fats raise LDL (“bad”) cholesterol in blood as effectively as saturated fat, and slightly decrease HDL (“good”) cholesterol. In addition, trans-fats appear to increase the risk of diabetes and impair cardiac rhythm, along with other adverse effects. (p.2). In fact, many food processors are seeking alternatives to partially hydrogenated oil to eliminate trans-fats from their products. Palm oil is attractive both because of its taste and cooking properties and because it is about 1/3 cheaper than soybean oil (partly because oil palm plants yield 10 times more pounds of oil per acre than soybeans).

However, palm oil, while not as harmful as partially hydrogenated soybean oil, is *still considerably less healthful than other vegetable oils*. (p.3). The palm oil industry have promoted the notion that palm oil is safe and healthy and do not contain trans-fats, and that palm oil does not raise blood cholesterol levels. The industry emphasises that 39% of palm oil is oleic acid, the major and healthy fatty acid in olive and canola oil. Moreover, the palmitic acid constituting 44% of palm oil affects cholesterol levels like oleic acid (p.3). However, most health authorities – supported by most of the medical research on the health effects of different fats – agree that palm oil promotes heart disease. The research cited dates back to at least 1970. Two so-called “meta-analyses” – a research technique combining similar studies to achieve greater stateistical strength – examined the effects of palmitic acid on serum cholesterol. In a 1997 meta-analysis based on 134 human experiments, prominent British medical researchers concluded that *palmitic acid raises blood cholesterol levels*. Polyunsaturated fatty acids, such as the linoleic acid in liquid vegetable oils, lower cholesterol levels (p.3).

In 2003, scientists in the Netherlands conducted another

meta-analysis of clinical studies. In addition to considering effects on total blood cholesterol, these researchers examined what many experts consider to be an important indicator of heart-disease risk: *the ratio of total cholesterol to HDL (“good”) cholesterol*. The higher the ratio, the greater the risk.

Based on 35 medical studies, palmitic acid increases that ratio more than any other saturated fatty acids, including lauric acid and myristic acid, which are abundant in palm kernel oil and coconut oil, the other “tropical oils. (All three of those fatty acids increased LDL cholesterol about equally) (p.3).

The same meta-analysis found that palm oil increases the total HDL cholesterol ratio more than the average US dietary fat, though less than stick margarine, typical vegetable shortening (made with partially hydrogenated vegetable oil), and butter.

This finding indicated that, in terms of blood cholesterol, palm oil is somewhat more harmful than the average U.S. dietary fat and far more harmful than liquid oils such as olive, canola and soy. (p.3).

On the basis of a large number of studies, several health agencies have evaluated the health effects of palm oil and palmitic acid. The World Health Organisation stated that there is “convincing

evidence” that palmitic acid increases the risk of cardiovascular disease. It advises that “intake of foods rich in myristic and palmitic acids should be replaced by fats with lower content of those particular fatty acids.”

U.S. health authorities, of course, have long urged Americans to consume less *saturated fat*, which is a major constituent of palm and other tropical oils and, of course, is abundant in meat and dairy products. The National Institutes of Health warned in 1997: *Saturated fat raises blood cholesterol the most. Over time, this extra cholesterol can clog your arteries. You are then at risk for having a heart attack or stroke... A high content of saturated fat can be found in some foods that come from plants such as: palm kernel oil, palm oil, coconut oil, cocoa butter.*

The US National Institute of Diabetes and Digestive and Kidney Diseases stated: “*Cut back on foods high in saturated fat or cholesterol, such as meats, butter, dairy products with eggs, shortening, lard, and foods with palm oil or coconut oil.*”

If the current trends in palm oil consumption continue, its effect on the health of populations worldwide will continue.

According to studies carried out by the Earth Institute at Columbia University, the main burden of

heart disease – in health and economic terms – will fall upon people in developing countries. Heart disease, caused in part by certain cooking oils and fats, kills millions of people a year in both China and India. Researchers estimate that, by 2030 in China, half of the projected nine million deaths from heart disease will occur among people in their prime working years, age 35 to 64. India and China also happen to be the world's largest importers of Palm Oil; both increased their imports of palm oil by more than half between 1997 and 2001. The Columbia University study concluded by stating that without direct intervention by the various national health services, governments, the private companies and the populations of these countries, an international health crisis is imminent in China, India and other developing countries. The reduction of consumption of palm oil would be one good way to start addressing that crisis (p.5).

Palm Oil is attractive to the food industry as it is *both cheap and semi-solid at room temperature*; therefore it usually does not need to be hardened to be used as a shortening. It can be used as a household cooking oil, but in the US it is used primarily as an ingredient in commercially processed foods (ibid, p.6). Chocolate products such as bars and cake icing may contain palm

oil as a substitute for cocoa butter. Ice cream, margarine, peanut butter, coffee whitener, canned cream soups, sauces, baked goods, trail mix and other snack foods and microwaveable convenience foods may all contain palm oil. Palm Oil also has industrial and chemical uses – for example as a mineral oil substitute for the production of lubricants, detergents, soaps, and cosmetics including lipstick, makeup remover, body lotion and sun cream (p.6).

The oil palm fruit also provides palm kernel oil and palm kernel meal. These products are derived from the seeds of the fruit rather than the fleshy pulp. The seeds can be stored for a long period and are easily transported. Palm kernel oil is used in some of the same kinds of foods as palm oil, even though their fatty acid compositions differ considerably. Palm kernel meal is an important ingredient in animal feeds. The yield of the palm fruit is roughly 82% crude palm oil, 10% palm kernel meal, and 8% palm kernel oil.

Therefore, *both* palm oil and partially hydrogenated oils should be avoided on health grounds. In terms of the global production and export of palm oil, Malaysia and Indonesia dominate the field. In 2001, these two countries accounted for 83% (42.9 billion pounds) of palm oil production and 89% (34.5 billion pounds) of

global exports. The remainder of the world's palm oil is produced in other humid tropical countries, such as Cameroon, Nigeria, Columbia and Papua New Guinea, frequently by corporations with large-scale Malaysian investment or ownership (p.7).

If consumers fail to make an active choice to avoid palm oil in foods and other products, then by 2020 the world demand for palm oil will reach STG£89.1 billion – *almost double the amount produced in 2001* - with all the adverse environmental consequences that will ensue (p. 7). To achieve this production increase, 1,160 new square miles will have to be planted every year

for 20 years. Indonesia has 26,300 square miles of forest land officially allocated for new oil palm plantations, Malaysia has almost 3,000 square miles more. The expected thousands of square miles of planting on the islands of Sumatra and Borneo could kill off the remaining orangutans, rhinos and tigers. (p. v).

In the next issue we will concentrate on the animals being eliminated for oil palm production in Sumatra, Borneo and elsewhere, with more information on the Malaysian corporations which are the principal agents of destruction of the rainforests.

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Transport 21 – an Exercise in Deception

On 1st November 2005, the Government released a ten-year transport plan. Titled “Transport 21”, it outlined a €34.4 billion spend on road, rail and light rail projects across the country. As part of this programme, it was announced that the Western Rail Corridor would be re-opened in two phases, starting with the Ennis-Claremorris section and followed by the Claremorris-Collooney section. If one were to go only by the media reports greeting this announcement, one would have been left with the impression that the money allocated was extra investment, and that the projects it was intended to fund were all new initiatives. However this was not so. The electoral confidence trick played here by the Government was to include monies already allotted to road programmes and to reannounce programmes already planned for. The plan itself is suspiciously lacking in actual detail regarding the costing of individual projects, and this is no surprise given the ever-ballooning road-building bonanza that is being enjoyed by contractors, and the land-rezoning holiday that goes with it. The inevitable cost increases and delays do not feature in the plan, strengthening the contention that it consists mainly of pie in the sky.

Regarding the Western Rail Corridor element itself, which was such a prominent feature of Government PR in promoting the plan in the media, it forms a part of the campaign on the part of the State to ensure the economic isolation of the West of Ireland. For instance, as the *Sligo Champion* pointed out in response to the announcement, “[t]he Western Rail Corridor is the only project in the ten-year plan that could have been started relatively soon. Here was an ideal opportunity for the government to show some serious commitment to the West and North West by getting on with the rail project. Instead, it will be spread interminably over ten years... The section of track between Claremorris and Collooney will be preserved in mothballs – but nobody is taking bets on whether a train will ever use it. Many people in the West are also puzzled by the ten-year timeframe put forward for achieving the Ennis-Claremorris section of just 68.5 miles, considering the 26 miles from Ennis to Limerick was renewed in eighteen months. And there is the question of whether massive EU funding will be lost to the project because of the delay.” In the meantime, the bulk of the spending earmarked in the programme is concentrated around Dublin, in an attempt not

to bail out the sinking ship of infrastructure and housing development, but to rescue the Government's chances among the electorate in the region of greatest population density.



Image shows the Western Rail Corridor (Wikipedia.org)

In fact, the loss of EU infrastructure funding is no longer a question, it is a certainty. Here is an extract from a speech by Minister for Finance Brian Cowen on the 17th of July 2006 to the Fianna Fáil Parliamentary Party: "I want to emphasize that Ireland will draw down its full entitlements under the Structural Funds for each region. This means that investments will continue to take place under the current programme beyond 2006 in both regions. Under the Structural

Fund Regulations, expenditure on co-funded measures can continue to the end of December 2008 and will be eligible for the drawdown of structural funds from the 2000-2006 allocation. Not only will the available funding be drawn down but, as attested by independent assessors, the results achieved with the resources from the structural funds has been good." Under the EU Structural Funds, the Government would be able to claim up to 70% (over €270 million) of the cost of the Western Rail Corridor, provided an application is made before the end of 2006.

However, a spokesperson for the Department of Finance stated on 17th July, on the same day the Minister made his speech, that there was **no intention to apply for EU funding for the project**. If the Western Rail Corridor is to proceed at all, it must be funded in full by the exchequer. But the refusal of the Government even to apply for funds demonstrates that their commitment to providing a rail infrastructure for the West of Ireland is hollow. What with the endless capacity for taxpayer-funded expansion in the civil engineering, i.e. road-building, sector, there is no prospect that the Government will meet its commitments under Transport 21, and no reason to believe that there was any intention to do so.

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East Timor: Timeline of the Coup – Part II

Part 2 of 3

After the fall of Suharto in 1998, when Portugal made efforts to restore its old influence, the Howard government sent troops to support the formation of an independent East Timor in 1999. The purpose of the Australian intervention was advertised as the protection of the Timorese people from attacks from Indonesian military and militia groups. The facts speak otherwise. Within months, the Howard government was engaged in threatening and blackmailing the embryonic Dili administration to ensure that Australia, not East Timor, or anyone else, kept the lion's share of the oil and gas. In February 2000, just before the Australian-led international force (Interfet) formally handed over power to troops of the UN Transitional Administration for East Timor (UNTAET), Australian representatives insisted on the signing of 2 critical treaties. [1]

The first treaty was a *continuation of the Timor Gap Treaty*, with the UN simply replacing Indonesia as Australia's partner in the joint development zone. The second treaty cleared the way for a US-Australian-Japanese consortium to exploit the large Bayu-Undan field, which is located 250km south of Suai in East Timor and 500km northwest

of Darwin, and is expected to yield up to 400 million barrels of liquefied petroleum gas (LPG), now valued at more at more than \$5 billion. The agreement foisted on Dili, however, involved building a pipeline to Darwin, where the Houston-based ConocoPhillips has commissioned a \$2.4 billion refining plant.

Both of these treaties were initialled by UN officials, and were designed to legally bind any incoming "independent" East Timor government. As for Timor's people, in whose name name Australia had intervened, they were granted no say in these binding arrangements. (Ibid). In October 2000, the Howard government unilaterally rejected a UNTAET call for the realignment of the undersea boundary. If the borders were drawn at an equal distance from both coastlines, in accordance with international law, East Timor would be entitled to nearly all of the Timor Sea royalties and taxes. Howard and his ministers issued thinly veiled threats of retaliation against East Timor if it dared take the dispute to the International Court of Justice. Australian Foreign Minister Downer directly linked the future of Australia's aid program - 90% of which was devoted to military purposes - to

the size of the royalties obtained by Dili. Downer's colleague, Resources Minister Nick Minchin, warned that a border dispute would destroy "investor confidence" in the Timor Gap. In March 2002, just 2 months before East Timor was proclaimed "the first newly independent country of the 21st century," the Howard government announced that it would no longer submit to maritime border rulings by the World Court. East Timor's Prime Minister-elect Mari Alkatiri denounced the move as an "unfriendly" act, "tying the hands" of his incoming government. [2]

In May, a week before Prime Minister Howard arrived in Dili for the Independence Day celebrations, Alkatiri was summoned to Canberra, where Australian government officials tried to force him to sign an agreement ceding most of the vast \$25 billion Greater Sunrise field to Australia. Australian-based company Woodside Petroleum, 34% of which is owned by Royal Dutch Shell, is the major shareholder in the Greater Sunrise field, in partnership with ConocoPhillips and Japan's Osaka Gas. The area is thought to contain as much gas as the nearby North West Shelf, Australia's largest resource development, also operated by Woodside. The North west Shelf has identified reserves of 100 trillion cubic feet, sufficient to

make about 2 billion tons of LPG, enough to meet world demand for more than a decade.

Unable to secure full agreement immediately, Downer and other ministers demanded that Alkatiri accept some form of treaty as the new nation's first "independent" act. Alkatiri duly obliged, but signed the May 20 document "without prejudice" to a final seabed settlement. [3]

From that moment on, the Howard government repeatedly refused to approve various agreements necessary to commence the Bayan, Undan and Greater Sunrise projects, thus starving the Timorese government of desperately needed revenue, until Dili agreed to delay or renounce its territorial rights. The mercenary character of the "negotiations" was revealed in March 2003, when the transcript of a meeting between Downer and Alkatiri in November 2002 was leaked and published on the internet.

"We can stop everything," Downer repeatedly declared, threatening to abort the talks. Alkatiri pleaded with Downer, "We want to accommodate all your concerns, but accommodating is one thing and scraping off a plate is another." Downer reiterated that the boundary would not be redrawn, saying "you can demand that forever for all I care, you can continue to demand, but if you want to make money, you should conclude an agreement quickly."

The Howard government therefore deliberately prolonged the border dispute, while continuing to draw revenues from the Timor Sea and East Timor sank deeper into poverty. During 2003 alone, Australia received \$172 million in royalties from the fully operational Laminaria-Corallina field – twice as much as the entire budget of the East Timorese government. Having received only a fraction of the oil revenue it was due, and with the steady elimination of international aid, the Dili government had little to spend on schools, health care, housing or job creation. 5 years after East Timor’s so-called “liberation” by Australia, half of its working people remained unemployed, 40% of the population were living on 50 US cents or less a day, life expectancy was just 40 years and infant mortality rates were among the highest in the world. During another round of border talks in April 2004, East Timor’s President Xanana Gusmao joined Alkatiri in a series of public pleas for relief from Australia’s merciless position. Alkatiri insisted that a new agreement granting East Timor a greater share of the offshore revenues was a matter of “life and death.” Speaking to the Portuguese newspaper *Publico*, Gusmao openly accused Australia of theft. In an interview with the *Guardian*, he warned of dire political consequences unless East Timor

received a better deal. “We would not like to be another failed state. Without this we will be another *Haiti, another Liberia, another Solomon Islands.*” Nevertheless, Canberra’s repeated diplomatic pressure was sustained until, in April 2005, Dili finally agreed to drop its border claims for fifty to sixty years.

The result of this piracy was that, in 2004-5, East Timor’s oil and gas revenues came to a total of just \$25 million. This amount is forecast to rise to \$75 million in 2007-08. Apart from the vast profits already being made by the oil corporations, the bulk of the country’s royalties, \$550 million by April this year, are *frozen in US treasury bonds in a Petroleum Fund at the insistence of the IMF and World Bank*, supposedly to provide for the county’s future. [4] The current Australia-New Zealand intervention follows a number of key decisions by the Fretilin-led government in Dili which sought to lessen, or at least counter-balance, Australian hegemony over the Timor Sea fields. In December 2004, Alkatiri, who was also East Timor’s Natural Resources Minister, announced that a consortium involving China’s largest state-owned oil group, China National Petroleum, and Norway’s Global Geo-Services would conduct a full seismic exploration of the Timorese side of the sea boundary. This

immediately raised the prospect of East Timor being able to gain additional revenue from its own resources by opening licences to competing European and Asian interests.

During 2005, according to some media reports, Alkatiri's government entered into talks with China's PetroChina for the construction of refining capacity in Timor, cutting directly across Australian plans for the piping or shipping of all Timor Sea crude, from both sides of the border, to Darwin, Australia. Alkatiri also called for undertakings by Australia that it would not block the piping of oil from the Greater Sunrise field to Timor.

While many of the details remain obscure, these reports featured in media, diplomatic and business commentary in the build-up to the move by Australia and New Zealand. Writing in *The Australian* on May 9, columnist Philip Adams declared that Alkatiri's "insistence on having gas production facilities in Timor's Suai area rather than Darwin may open the door to China; PetroChina seems to have the deal stitched up. Many in the Western diplomatic and corporate communities think that's too close for comfort."

Loro Horta, the son of Timor's Foreign Minister Jose Ramos-Horta, wrote in the *Asia Times* on May 27th: "There was also widespread speculation that

Alkatiri planned to award a multibillion-dollar-gas-pipeline project to PetroChina, an invitation that would have won both the United States' and Australia's ire."

In September 2005 Alkatiri started an international tour to attract oil and gas explorers to East Timor's own offshore area of some 30,000 square kilometers, declaring that "Timor-Leste is open for business." In November he reported that these efforts attracted more than 20 petroleum companies, "among them some of the biggest in the world."

In January 2006, after 6 years of bitter negotiations, Alkatiri finally extracted a minor concession from the Howard government.

Canberra reluctantly agreed to a 90-10 share, in East Timor's favour, of the proceeds from part of the Greater Sunrise field - the 20% that lies in the so-called Joint Petroleum Development Area, which sits astride the disputed border line. The agreement shares equally (50-50) the royalties from the remaining 80% of Greater Sunrise, in what Australia claims as its exclusive jurisdiction.

Earlier the Australian government had insisted on a more aggressive siphoning of revenues to Australia. However, in response, the Timor parliament threatened to scuttle the April 2005 deal in which the Alkatiri government had agreed to abandon its claim for the redrawing of the boundary.

In February, the Dili government sought tenders for its own Timor Trough fields after the Chinese-Norwegian survey estimated that the area held half a billion dollars of light oil, and some 10 trillion cubic feet of gas (about 10% of the total estimated Timor Sea reserves). By the April 19th deadline, 5 companies had submitted bids, either individually or in consortia. They were Italy's ENI, Portugal's GALP (in which ENI is the majority shareholder), Brazil's Petroleo Brasileiro

(Petrobas), Malaysia's Petronas and India's Reliance. It is of the greatest significance that none were from the US and Australia.

[5]

From this moment onwards, from early February, the destabilisation of the Alkatiri government began.

Part III of this article will appear in the September edition.

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Footnotes

[1] <http://www.wsws.org/articles/2006/jun2006/etim-j06.shtml>

[2] Ibid.

[3] Ibid.

[4] Ibid.

[5] Ibid.

The Real Cost of the Nuclear Industry: Part II

Uranium is the primary source fuel for nuclear reprocessing. *400,000 tons of rock need to be mined to obtain 33 tons of uranium*, the amount needed to run one reactor for a year. The rock material is abandoned, but the residue of the uranium processing itself is not; instead it is poured into basins. In the enrichment process itself residue is left over, in the fuel fabrication process, residue is left over... and so the process continues. [1] In the reactor itself the 33 tons of uranium ore are turned into the same amount of uranium, plus 300 kilograms of plutonium, plus other byproducts of fission; and here the real pollution difficulty lies, as highly radioactive waste is produced, along with all kinds of low-level waste, discharged liquids, discharged gases, etc. In the so-called reprocessing cycle, this used fuel and the unused uranium are separated from the newly produced plutonium and the fission products which can no longer be used.

The next step is the *uranium milling* in which the yellow cake is extracted from the uranium ore. The greatest portion of the activity – the uranium decay products, thorium, radium, lead., etc. – are left over in the

form of these tailings in the tailing basins which then ‘enhance’ the landscape. [2]



A Nuclear power plant
(Wikipedia.org)

After this comes *conversion*: a uranium gas is made from the yellow cake which is a solid substance. The gas is needed for the enrichment process. Here again there is a large amount of waste, and in the end, after many steps, 5% of the original material taken from the ground actually goes into the reactor and 95% remains in the landscape. The fuel now inside the reactor is now highly radioactive. The uranium mining process alone is responsible for the greatest proportion of health-related damages. In comparison, the running of the reactor, final storage, etc., is relatively harmless when compared to the level of

environmental damage from uranium mining. [3]

In the operation of one single 1-gigawatt nuclear power plant, one large plant results in an average of 76 fatalities in one year, due solely to the radon coming from the tailings. This is *not during the year that the energy is produced*, rather, its sustained for all eternity; *radon will be released for millennia*, this is from one year of energy production.

Radium which trickles into the ground water from these underground tailing pools causes an average of 20 further fatalities, which amounts to about *100 fatalities for one plant for a year*. As there are around 400 nuclear plants in the world, in one year of operation of the current atomic industry results in *40,000 deaths per year resulting from uranium mining alone*. [4]

In economic terms, when the infrastructure costs, fuel cycle costs alone amount to 4.5 to 17 dollars per megawatt of energy. But the great costs involved are related not merely to the fuel cycle, but *also the costs of investment that a nuclear plant requires*.

With fossil fuel, there are relatively lower plant investment costs, but the fuel costs are much higher. This is because coal is comparatively more expensive than uranium. The relevant consideration is where the plant is located. If a hydro-powered plant

is located by a river, it has an energy source at hand; if due to poor maintenance, factored in, coal costs as much as nuclear power. [5]

The cheapest form of energy is energy that is saved. This is not simply a matter of switching off lights at night but the more efficient application of the technical means at hand. To give one example, that of Austria, the energy savings potential for this advanced industrialised country, the energy savings potential with currently available technology is in the order of 50%. This means that 50% of power could be saved without any loss in living standards. The reason this is not happening is due to an energy policy which focuses on the development of new sources of power rather than the more efficient use of existing power. [6]

To give another example, that of the former Soviet Union, with its extensive network of natural gas pipelines, a major source of supply is Western Europe. It was discovered that due to poor maintenance, faulty workmanship, etc., *40 Billion cubic metres of natural gas is lost through leakage. This is equivalent to 90% of the atomic capacity of the former Soviet Union. Using existing technology, 90% of nuclear power in the former Soviet Union could be saved by sealing the leaks*. If the natural gas were put to efficient

use, *more than 100% of the current atomic power share could be covered.* [7]

In terms of the costs of a nuclear accident, if an accident on the scale of Chernobyl, or greater, were to take place, it is generally accepted that the damage would be so great that it would be far beyond the capacity of the world's insurance industry to cover. It has therefore been agreed that governments should step in and meet the costs of a nuclear accident once the damage goes beyond a certain limit. [8]

In Britain, the Nuclear Installations Act of 1965 requires a plant's operator to pay a maximum of £150 million in the ten years after the incident. The government covers any excess and pays for any damage that might arise between 10 and 30 years afterwards. Under international conventions, the government also covers any cross-border liabilities up to a maximum of about £300 million. These figures are an *obvious gross understatement of the problem.* If Bradwell power station in Essex blew up and there was an east wind, London and perhaps the whole of Southern England would have to be evacuated. *The potential costs of a nuclear accident could be closer to £300 trillion rather than £300 million, an increase of six orders of magnitude.* [9]

In terms of the alleged benefits to the environment from

nuclear's supposedly lower carbon emissions, the emissions themselves are understated, as they fail to take into account the releases of other greenhouse gases used in the fuel cycle. The stage in the cycle in which other greenhouse gases are particularly implicated is enrichment.

Enrichment depends on the production of uranium hexafluoride, which requires fluorine, plus its halogenated compounds, not all of which can be prevented from escaping into the atmosphere. The conversion of one tonne of uranium into an enriched form requires the use of about half a tonne of fluorine; at the end of the process, only the enriched fraction of uranium is used in the reactor, as explained above: the remainder, containing the vast majority of the fluorine used in the process, is waste, mainly in the form of depleted uranium, now of course being used as a weapon of war in its own right. It is important to emphasize:

1. that to supply enough enriched fuel for a standard 1GW reactor for one full-power year, about 160 tonnes of natural uranium has to be processed;
2. The global warming potential of halogenated compounds is *many times that of carbon dioxide*: that of Freon 11, for example, is nearly *10,000 times greater than that of the same mass of carbon dioxide.* Moreover, other halogens, such as chlorine, whose compounds are

potent greenhouse gases, along with a range of solvents, are *extensively used at various other stages in the nuclear cycle, notably in the reprocessing process*. There is no readily available data on the quantity of these “hyperpotent” greenhouse gases released on a regular basis into the atmosphere by the nuclear power industry. Nor is any data available on the actual, presumably variable, standards of management of halogen compounds among the various nuclear power industries across the world. There is a well-founded suspicion that this crucial source of climate-changing gases substantially reduces any advantage that the nuclear power industry has at present in their highly propangandized production of carbon dioxide, but no well-founded claim can be made in favour of this. It is vital that reliable research be carried out into the quantity of freon and other greenhouse gases released from the nuclear fuel cycle as soon as possible. [10]

The advantage of nuclear power in producing lower carbon emissions holds true only as long as supplies of rich uranium last. When leaner ore is used, ore consisting of less than 0.01% (soft rocks), and 0.02% (hard rocks), so much energy is required by the milling process that the *total quantity of fossil fuels needed for nuclear fission is greater than*

would be needed if these fuels were used directly to generate electricity. In other words, when forced to use ore of poorer quality, nuclear power begins to slip into a so-called *negative energy balance*: more energy goes in than comes out, and more carbon dioxide is produced by nuclear power than by the fossil-fuel alternatives. [11]

The world’s annual production of uranium oxide has been lagging behind its use in nuclear reactors for the past 20 years. The shortfall has been made up from military stockpiles, so taxpayers’ money continues to subsidize the military industry. [12] The rise in the price of uranium oxide (so-called “yellowcake”) has soared recently. One cause of this is the higher cost of the fossil energy needed to mine and extract uranium. [13]

As to reserves of uranium ore, there is enough usable uranium ore in the ground to sustain the present trivial rate of consumption – a mere 2 1/2 % of all the world’s final energy demand – and to fulfill its waste-management obligations, for around 45 years. In terms of nuclear power actually supplying the energy for the world’s electricity supply, the best estimate (supposing that the all the needed power stations were constructed simultaneously and without delay), is that the global

demand for electricity could be supplied from nuclear power for about 6 years, with margins for error of roughly 2 years either way. Perhaps we could be more ambitious than that: it could supply all the energy needed for an entire (hydrogen-fueled) transport system. It could sustain this for 3 years (with the same margin of error) before it ran out of rich ore and the energy balance turned negative. [14]

If, as an economy measure, all the energy-consuming waste-management and clean-up practices were to be put on hold while stocks of rich ore lasted, then the energy needed by nuclear energy might be roughly halved, so that global electricity could be supplied for a decade or so. At the end of that period, there would be giant stocks of untreated, uncontained waste, but there would be no further prospect of available energy to deal with it. At the extreme, there might not be the energy to cool the storage ponds needed to prevent the waste from being released from its temporary containers. However, the situation is far worse. There is already a backlog of high-level waste, accumulated over the last 60 years, and now distributed around the world in cooling ponds, in deteriorating containers, in decommissioned reactors and heaps of radioactive mill-tailings. Some 1/4 million tonnes of spent fuel is already

being stored in ponds, where the temporary canisters are so densely packed that they have to be separated by boron panels to prevent chain reactions. The task of clearing up this deadly rubbish will require a large amount of energy. How much energy? This is unknown, but a rough estimate has been made: energy equivalent to about 1/3 of *the total quantity of nuclear power produced – in the past and future – will be required to clean up past and future wastes.* The whole of this requirement will have to come from the remaining usable uranium ore, which is not much more than half the entire original endowment of usable ore. [15]

The result is that, if the nuclear industry were to clean up its wastes, only about 1/3 of the present stock of uranium would be left over as a source of electricity for distribution in the various national grids. In other words, the electricity that the industry would have available for sale in the second half of its life – if it were simultaneously to meet its obligation to clean up the whole of its past and present wastes – would be approximately 70% less than it had available for sale in the first half of its life. On this calculation, the estimates given above for the contribution that nuclear power could hypothetically make in the future will have to be revised: *Nuclear*

energy, if it cleared up all its wastes, could supply enough power to provide the world with all its electricity for some 3 years. This is not speculation: these wastes will have to be cleared up; the energy required for this process will reduce the contribution that can be expected from the trivial to the virtually nonexistent. [16]

The financial costs of this must *constantly be borne in mind.* If the nuclear industry in the 2nd part of its life were to commit itself to clearing up its current and future wastes, the cost would make the electricity produced virtually unsaleable. Bankruptcy would inevitably follow, *but the waste would remain.*

Governments would have to keep the cleanup programme going, whatever the cost. They would also have to keep training programmes going in a e.g., college of nuclear waste disposal, ensuring that, a century after the nuclear industry expires, the skills they would require for waste disposal still existed. However, the Government, in an energy-strapped society, would lack the funds. The disturbing prospect is now opening up of massive stores of unstable wastes that no one can possibly afford to cope with or clean up. [17]

Let us move away from a hypothetical situation in which nuclear energy would provide all available power, which is not

going to happen, and return to the present costs involved in the advance of nuclear power to deal with energy needs. A useful example is Canada, in Ontario Province. In the 1980s, Canada defied the international trend away from nuclear power, by then well under way, and constructed the world's largest nuclear plant at Darlington. It was specifically exempted from the province's environmental act. However, when it was finally operational, this plant, *budgeted at \$3.4 billion, had cost nearly \$15 billion.* [18]

The company involved, Ontario Hydro, now has debts amounting to almost \$40 billion, resulting from its investment in nuclear power stations since the 1970s. [19]

Since its beginning, nuclear power has cost the United States over \$492,000,000,000 – *nearly twice the cost of the Vietnam War and the Apollo moon Missions combined.* In return for this investment, an energy source exists that, until the mid-1980's, resulted in less energy than the burning of firewood, 20-22% of electricity, and 8-10% of total energy consumption in the US. [20]

Since 1950, nuclear power has received over \$97,000,000,000 in direct and indirect subsidies from the federal government, such as deferred taxes, artificially low limits on liability in case of

nuclear accident, and fuel fabrication write-offs. Many costs for nuclear power have been deliberately underestimated by the government and industry, such as the costs for permanent disposal of nuclear wastes, the “decommissioning” (shutting-down and cleaning-up) of retired nuclear plants, and nuclear accident cleanup.

US nuclear power contributes only 20-22% of electricity; but research makes clear that 25-44% of all energy generated is wasted or inefficiently used. 3 separate studies carried out by government and private firms since 1982 revealed that the US has the potential to conserve the electrical equivalent of between 145 to 210 power plants. A 1990 study by the Electric Power research Institute (EPRI) indicated that, “Use of energy-saving technologies would result in a saving [by the year 2000]... of 24-44% of energy consumption.” Japan, Germany and Sweden use 40% to 60% less energy. Nor will increased use of nuclear power decrease dependency upon oil. What will achieve this is improving the fleet mileage of US cars from 26 miles per gallon, which will greatly decrease oil imports, as only 8% of electricity comes from oil, domestic and foreign. Of this, half is used in “peak-load” (quick start-up) oil fired plants used on the hottest days of the year and in

emergencies. Nuclear plants take too long to start up, and therefore cannot be used as “peak-load” plants. [21]

Nuclear power is not a serious option for the US in the face of global warming, for the following reasons:

1. The Prohibitive Cost: Each plant costs between \$3 and 5 billion to construct. The US would need over 400 additional reactors (on top of its present 108) to replace its coal plants. The construction costs alone would amount to roughly \$1.2-2 trillion. On a worldwide, basis, 8,000 nuclear plants would be needed to replace coal plants, to meet projected energy needs for the next 30 years (there are only 430+ plants in operation at present). *These plants would cost the world approximately \$24 trillion just to construct.* However, additional costs would have to be added to these calculations: the increased costs for nuclear waste disposal and plant decommissioning; increased costs for scarcer nuclear fuels such as uranium; increased costs to safeguard nuclear facilities and materials from sabotage or terrorism, and the increased risk of major, multi-billion dollar accidents and their consequent disruptive economic effects.

2. Action on Global Warming is needed at once, and not at some

unspecified time in the future. The nuclear option is in fact a clever device to long-finger the issue: most experts agree that major action must take place in the next 5-10 years in order to lessen the predicted global warming effects. However, to construct enough nuclear plants, even if the resources could be found, would take decades. Calculations reveal that even if the 8,000 plants mentioned above were completed, world CO₂ levels would still increase 65% over the next 30 years; this is operating on the assumption that the process of mining and processing the uranium does not in itself greatly increase CO₂ levels.

3. Coal energy is only one contributor: only 7% of world CO₂ comes from US coal, oil and gas energy plants, and worldwide, CO₂ represents only one half of the problem. Nuclear power therefore does little to reduce CO₂ levels; in fact, as we have seen, it rather does the opposite. It does nothing to reduce the other greenhouse gases such as methane, chlorofluorocarbons, halons, etc. On the contrary, it merely serves to drain needed money and resources away from the solutions needed for the other, non-CO₂ half of the problem.

4. Faster Means Do Exist: *It has been calculated that, compared to nuclear power, for every dollar spent on conservation and*

efficiency techniques, 7 times the amount of CO₂ is removed from the atmosphere. These measures can be more quickly implemented, and at lower costs. There are other, logical steps that Governments can take which include: constructing more fuel efficient cars; the greater use of public transportation and bicycles; decreased energy consumption; the increased planting of trees (non-GM); halting the catastrophic deforestation of indigenous rainforest across the world and stopping ocean pollution (as both rain forest and ocean help absorb CO₂); halting the spread of deserts through land reform and active assistance of indigenous peoples to reclaim their own rightful inheritance (Ibid). Nuclear power is a contrived distraction away from relevant measures to save the environment, which is why it is being promoted by the very people who are engaged in systematically destroying the environment. The primary reason for the advancement of nuclear power is to sustain the nuclear weapons industry, whose effects can be seen in Japan, Iraq, Yugoslavia, and the Ukraine. Preventing the acquisition of yet more terrible weapons should be the concern of every informed citizen.

In the next issue we will look at the effects of “Depleted Uranium”

warfare, a by-product of the nuclear weapons industry and its application in Iraq, Afghanistan and Yugoslavia.

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Footnotes

- [1] <http://www.ratical.org/radiation/WorldUraniumHearing/PeterBossew.html>
- [2] Ibid.
- [3] Ibid.
- [4] Ibid.
- [5] Ibid.
- [6] Ibid.
- [7] Ibid.
- [8] http://www.feasta.org/documents/energy/nuclear_power.htm
- [9] Ibid.
- [10] Ibid.
- [11] Ibid.
- [12] http://www.uxc.com/cover-stories/uxw_18-34-cover.html
- [13] <http://www.uex-corporation.com/s/UraniumMarket.as>
- [14] Ibid.
- [15] Ibid.
- [16] Ibid.
- [17] Ibid.
- [18] http://www.davidsuzuki.org/about_us/Dr_David_Suzuki/Article_Archive_s/weekly03170601.asp
- [19] Ibid.
- [20] <http://www.neis.org/literature/Brochures/npfacts.htm>
- [21] Ibid.