

Why you have to be RED to be GREEN

**An exploration of why we need
socialism and democracy to achieve
sustainability in the 21st century**

**A Scottish Socialist Party
discussion document**

£3

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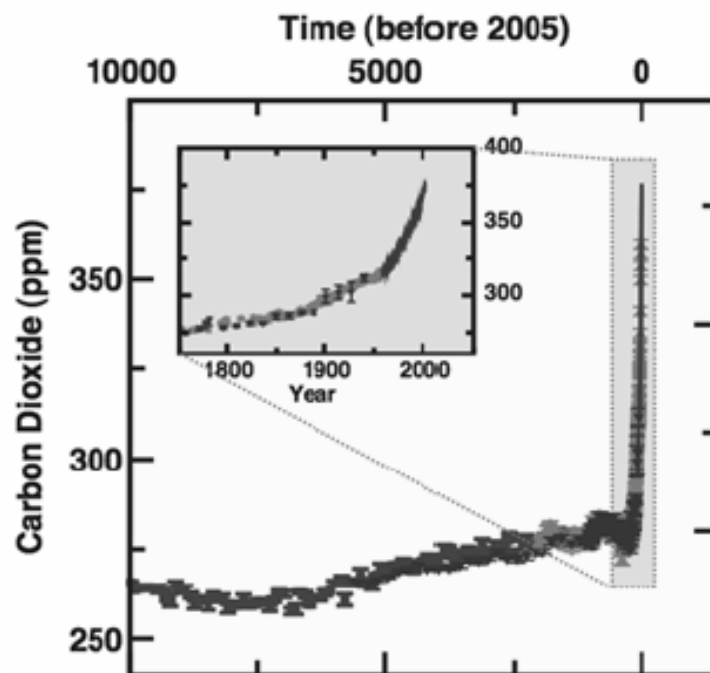
why is the environment so important?

Gerry McCartney

climate change

There is now scientific consensus that climate change is happening and that human activity is at best a major contributory factor and at worst entirely responsible. The release of greenhouse gases such as methane from livestock and carbon dioxide (CO₂) from burning fossil fuels, combined with continued destruction of forests (which absorb CO₂), has led to an exponential rise in atmospheric CO₂ concentration since the beginning of the industrial revolution (Figure 1).

Figure 1 – The rise in CO₂ levels since the industrial revolution (Source: IPCC)



These greenhouse gases gather in the upper atmosphere reflecting heat back to the earth. This is what generates a rise in average global temperature. This change in temperature interferes with the complex climatic systems that operate across the globe that causes many areas to become warmer, and some areas to become cooler. It is also likely to interfere with the pattern of rainfall leading to both droughts and floods.

Climate change poses an urgent and potentially devastating threat to humankind. If current trends in the release of greenhouse gases continue it is expected that the world will soon reach a 'tipping point' where massive climatic change will occur. At this tipping point (estimated at around 450-550ppm equivalent of CO₂) action to reduce greenhouse gas emissions will be too late as the warmed atmosphere will generate a positive feedback loop through the release of CO₂ from Siberian permafrost and the increased decomposition of organic materials in the rainforest areas. Action to prevent catastrophic climate change (ie a rise of greater than 2°C which approximates to this tipping point) therefore has to occur before the worst problems are revealed.

If the average global temperature rises by more than 2°C the effects on humankind will be largely mediated through economic and social disaster rather than direct threats to health. It is true that the rates of skin cancer due to a higher exposure to the sun's rays will occur. It is also true that malaria may again be seen in Europe. However, it is the flooding of Bangladesh, the Maldives, the Thames estuary and Grangemouth that will have a greater effect. This will evict millions of people around the globe from their homes, it will destroy their source of income and their social networks. There will literally be tens or hundreds of millions of people homeless without land, housing or jobs.

Furthermore the agricultural basis for the food supply of the globe will be under threat. This includes not only flooded land, but increasing drought and pestilence and increasing incidence of severe weather and unpredictability.

The globalised nature of the world economy leaves few safe from the ructions of climate change. A failure of the rice crop in South East Asia could cause the 21st century equivalent of the Irish potato famine, but effecting 2 billion people.

In short, discussing the likely implications of rapid climate change can make Armageddon seem attractive. This is a disaster that is avoidable, but capitalism is powerless to do what is necessary.

sustainability

The fundamental truth about unsustainable systems is that they are, by definition, unsustainable and liable to collapse. Therefore the questions

that should be posed about all unsustainable systems are simply when is collapse going to occur and in what manner.

Marx was clear that capitalism would “sow the seeds of its own destruction”, but it may be that capitalism collapses not because it is overthrown by a working class united against the injustice of the system, but instead by the destructive power of the incessant requirement for economic growth, the ever-increasing thirst for resources and unplanned nature of the capitalist system, thereby destroying the planet.

There are many aspects of our modern world, and the capitalism economic system based on the pursuit of profit, that are unsustainable. One example of this is “peak oil” (discussed below).

The ecological footprint is a measure of the land area used to sustain a defined population’s life and is a good measure of how environmentally sustainable a system is. It measures the area of land needed to produce all the goods and services for a population (eg food, energy and metals). The footprint therefore indicates both how the earth’s limited natural resources are distributed amongst groups and whether or not the total (or aggregate) consumption of the world is sustainable.

The ecological footprint of the UK is 3 times the area of the country. This means that if everyone currently alive in the world consumed as much as the us we would need 3 planets to sustain us (Living planet report, WWF, 2006). The population of the earth as a whole is heading towards 2 planet living. This is setting the planet up for an environmental collapse not dissimilar to Easter Island or Rwanda where the combination of environmental damage with population growth, competition, conflict, poor political leadership and climatic change (Collapse, Diamond, 2006).

“peak oil”

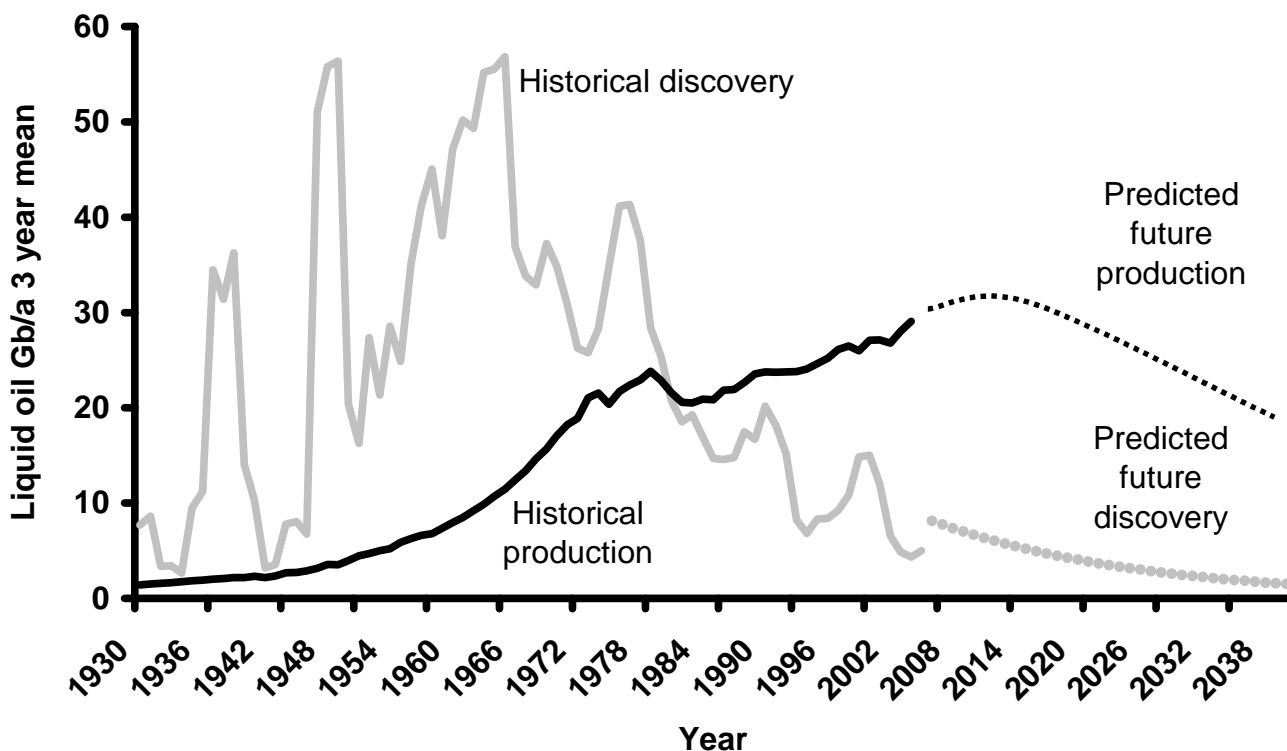
It will come as no surprise to socialists that the war on Iraq was a war for oil. What may not be so clear is the imminent scarcity of oil and its chemical by-products that is likely to strike in the next 10 years, and the consequent imperative for imperialist forces of securing this precious resource before prices start to rise inexorably.

“Peak oil” is the term used to describe the inevitable fall in the rate of production of oil. This has not yet occurred but it is known that this will occur soon because the rate of discovery of ‘new’ oil has been falling

rapidly since 1970. There is therefore a growing gap between the amount of oil being produced every year and the decreasing discovery of any new resource (Figure 2).

Figure 2 – “Peak Oil” and the future decline in oil supplies

(Source: Campbell 2006 and Roberts 2004)



Added to this is the idea of the “low hanging fruit”. The oil nearest the surface and of the highest quality was discovered and extracted first, with the oil that was slightly deeper and of less good quality extracted next. This is why in 2007 there are companies struggling to extract useful oil from the tar sands of Canada and companies drilling in the deep water West of Shetland in an attempt to utilize and find the dregs at the bottom of the global oil barrel. This could mean that oil supply doesn’t decline slowly, but instead collapses rapidly. Demand for oil continues to grow with the ongoing development of India and China being a major driver alongside the dependence of the globalised economy on air travel, cars and trucks.

Unless alternatives to oil are found, the price of oil will rise exponentially and send the globalised economy into terminal decline. It is oil that facilitates the global trading network that the economic base of Europe, China and the USA are based. Take the oil away, or make it much more expensive, then the oil shocks of the 1970s and the consequent de-

industrialisation of Western Europe will seem like minor events compared with the consequences.

There is no alternative energy source that is as concentrated and portable as oil. It is possible to envisage renewable energy resources providing electricity and heat in the future, but it is not realistic to expect that air travel, car travel and the globalised economy will survive this. To illustrate, fossil fuels represent the stored solar energy that fell on the earth's surface over millions of years. It was captured as plankton and vegetation and then compacted by burial under the earth's moving tectonic plates. It would be folly to suggest that any sources of solar energy could reproduce such a large repository in equivalent terms – including wind, waves and photovoltaic cells.

Even if the world does not act to prevent catastrophic climate change, the unsustainability of the capitalist system in terms of its use of oil will bring it down. The real danger is that the global population suffers a 'double whammy' of climate change and rapidly rising energy prices if the necessary actions are not taken.

what is the record of socialists on green issues?

Ken Ferguson

For large numbers of people the idea of Socialists having anything to contribute to the key debates about the environment and green politics seems at best unlikely and at worst bizarre. The political wing of the working class movement is associated with 5 year plans, tractor production, giant dams and a love affair with smokestack industry. And that is just the Soviet bit.

The same trend is reflected in Social Democratic parties such as British Labour who were enthusiastic supporters of nuclear power, oversaw supersonic air travel with Concorde and implemented the notorious Beeching Report which slashed the railways. All this pigeon holing of the Left as outdated productionist and anti nature has been greatly boosted by the ghastly legacy of environmental damage revealed by the Soviet collapse from the Chernobyl disaster to the destruction of the Aral Sea.

This means that that Socialists approaching Greens to discuss the way forward are likely to have to deal with quite a bit of negative baggage.

Given that this is the case it is a vital task for Socialists to reassert that there is a distinct ecological trend in socialist thought developed in some detail by Marx and bringing distinct and important insights to the debate. This is easy to say but runs up against the objection that Marx new nothing of nuclear power, synthetic chemicals, mass motor traffic and many of the other damaging technologies and processes underpinning the environmental crisis.

Claims that all socialists saw nature as a resource to be tamed and exploited through mining, hydro-power and waste dumping will also be raised.

However the reality is rather different given that the early founders of the socialist movement were living and working at a time when capitalism was coming into being and feudalism being supplanted. This meant that they raised questions about capitalist society and issues such as the relation between society and nature were often more fundamental than what takes place in today's world. Work over the past twenty years has now clearly established that Marx was concerned about and arrived at profound and

indeed revolutionary conclusions about the relationship between society and nature. These conclusions have helped socialists to contribute to the developing green movement and bring to it the central point that the ecological crisis is a product not of individuals but is rooted in the antagonistic relations in capitalist society.

An early pointer to Marx's concerns about the relations between society and nature which informs this can be found in his connection with the great agricultural chemist Liebig who was one of the early critics of modern farming. Liebig, in a highly controversial article in the early 1860s described British farming's frantic bid to feed the rapidly growing population of the growing industrial towns they transported food and fibre from the country to the city. But this system made no provision for the recirculation of social nutrients, such as nitrogen, phosphorus and potassium, which ended up contributing to urban waste pollution in the form of human and animal wastes. Indeed this, at one point, caused a crisis in the House of Commons itself when the smell from the heavily polluted Thames almost overcame the sitting MPs in a crisis known popularly as The Great Stink. The desperate search for fertiliser to keep the soil productive saw war graves across Europe robbed for bones and Guano - bird shit - become highly prized commodity.

The depletion of the land's fertility opened the way for an ever greater concentration of agriculture among a smaller and smaller number of proprietors who adopted intensive methods. But Britain was able to maintain this industrialised capitalist agriculture only by importing guano from Peru as well as bones from Europe. Guano imports increased from 1,700 tons in 1841 to 220,000 tons only 6 years later. Marx was well aware of this critique, which flowed directly from the divorce of people from their own food production resulting from industrialisation, and he highlighted 'the destructive side of modern agriculture'.

Capitalism pitted country and town against each other, turned nature into a commodity to be exploited and lay at the root of the environmental crisis. In common with other socialist thinkers such as Engels, Kautsky, Morris and others Marx highlighted the fact that it is the structure of capitalist society which produces everything from food to televisions for profit which lies at the heart of the environmental crisis. It is this central insight that marks off the key contribution that socialists bring to any discussion of the environment.

Taking the antagonistic nature of capitalist society as the starting point it

follows that socialists do not believe that the fundamentals of the current crisis can be solved within that framework. That is not to say that the left would oppose demands such as expanded public transport, improved home insulation or green energy - clearly any steps that lessen the crisis must be backed. But asking the giant multinationals whose entire existence is based on endless consumption, exploitation and a cavalier attitude to pollution to lead us out of the crisis they have created is putting hope way ahead of experience. What is needed is a new relationship in which society is run by what Marx called “the associated producers” who arrive at a sane, planned use of resources with production for use rather than profit.



The burning of oil and other fossil fuels is the main driver for climate change

Such a system harnesses the vast knowledge held by workers and social activists both to identify the problems and arrive at a rational answer. Previous attempts of this approach can be found the embryonic popular planning movement most notable applied by the 1980s Greater London Council on arms conversion and the use of London’s closed docks. The current popular movements mushrooming around the Bolivarian process in Venezuela is another pointer to what a “Socialism of the 21st Century” might look like. Rapidly developing computer and other electronic communications potentially make this task much easier as vast information flows are available at the click of a mouse.

The Left is not a late convert to the need to tackle the environmental crisis as any serious historical survey shows and it is vitally important for socialists to intervene in this debate and fight for a politics which can deliver both social and environmental justice.

what would it take to achieve sustainability?

Gerry McCartney

To achieve sustainability it is necessary for us to reduce our total consumption of goods and services (to achieve 'one planet living') and to reduce our emissions of CO₂ by 90% to avoid the tipping point of runaway climate change (Monbiot, 2006).

This means that every aspect of our lives will need to be redesigned for sustainability: how we get around, what our houses are like and even what we do for a living. The current capitalist economic system works to produce the highest rate of profit and externalises social and environmental costs such that it will never be able to achieve this. Even more importantly capitalism is predicated on the growth of the economy to repay debts incurred. If the economy cannot grow because the planet cannot sustain more extraction and pollution, or because resources become scarce, then capitalism will quickly collapse. This may well be seen very soon as oil prices rise inexorably. A different form of growth, based on knowledge and social relations is possible, but it is difficult to see how this could happen unless the capitalist system is replaced by a socialist economy. This would be planned not to generate profit but instead to live sustainably within our means and to maximise equity, democracy, well-being, social interaction, health and education.

Scotland's economy is dominated by a service industry of banking, insurance and retail integrated into the capitalist globalised economy. This is incompatible with a sustainable world.

Urgent action is necessary. In the short term we need to encourage people to reduce their use of cars and aeroplanes drastically. This can be done by making public transport free and expanding the network. We also need to reduce the amount of energy wasted in heating inefficient homes by funding local authorities to upgrade the insulation standards of every house. In the longer term the capitalist system needs to be replaced with an economic system that recognises social and environmental value. This is the essence of the changes advocated by the Scottish Socialist Party. To ensure that the amount of goods and services that are used are sustainable, and that these are distributed fairly across the globe and within the country, carbon rationing needs to be introduced.

how do we stay warm and keep the lights on?

Marion Hersh

There is increasing concern about energy supplies, arising from a mixture of factors, including political instability and political changes which may affect the availability of oil and concerns about global climate change associated with anthropogenic (human generated) emissions of carbon dioxide and diminishing supplies of fossil fuels (Hersh, 2006). Consequently there is a need for appropriate alternative strategies to ensure energy supply.

In the UK energy is delivered in the following five main forms (Boyle, 2004):

- Liquid fuels, largely oil and its derivatives (petroleum, diesel, kerosene).
- Gaseous fuels, mainly methane (natural gas), plus bottled propane and butane.
- Solid fuels, mainly coal and its derivatives, with small amounts of fuel wood, refuse incineration and straw burning.
- Electricity, mainly from fossil fuels and nuclear power stations. Hydroelectricity and other renewable sources make a small contribution.
- Heat, to only a limited extent, distributed as hot water or steam. There are a few district or community heating schemes, which provide hot water or steam to buildings from centralised boilers. A small amount of heat is obtained from geothermal sources.

Machinery and information technology are most conveniently powered by electricity, whereas applications involving heating should use other forms of energy than electricity to avoid the energy losses associated with conversion and transmission. The electricity supply needs to meet the following two specifications:

- Sufficient capacity to meet overall energy requirements
- Electricity provision when and where it is needed

There is a need both to reduce overall energy demand and to manage it to reduce the variation in demand over the base load. There are a number of approaches to reducing energy consumption, including the following:

- Energy efficient buildings, appliances and lighting which are designed to minimise energy use. This will probably require financial support to upgrade existing buildings and stricter building regulations for new buildings, as well as financial support or loans for the purchase of energy efficient appliances which save money overall, but may have higher capital costs.
- Energy efficient heating systems, as well as heating buildings to slightly lower temperatures. Financial support may be required for upgrading existing heating systems and there may also be a need for new regulations and/or legislation on energy and emissions specifications. Heating buildings to slightly lower temperatures will require people to wear more clothes and to be more active and may be inappropriate for some elderly people or young children.
- The use of adaptive and other advanced control schemes in industry to reduce energy and material consumption (which has associated energy costs).
- Reduced consumption, improved waste management and design for waste minimisation, refurbishment and repair, reuse and recycling. The resulting reduction in waste, resource use and the differences between the energy requirements of refurbishment and repair and manufacture of new products will result in energy and carbon dioxide emissions savings.
- A reduction in transport energy consumption. This will require measures to promote a modal shift from private car use to cycling, walking (or wheelchair use) and public transport, an encouragement of facility accessibility rather than mobility and reductions in air travel. Moves to accessibility rather than mobility would require an end to the siting of facilities, away from the population centres they serve. Reductions in air travel will require rail travel to become more competitive with air travel (including by changes in their relative prices, infrastructure development to allow the widespread use of very high speed trains and further technical developments to increase the speed and reduce the environmental impacts of train travel), an increased use of video conferencing to replace business travel and possibly the introduction of tradable air travel permits.

Demand management should include measures to encourage the transfer of energy consuming activities to times of low demand to reduce the variation in total demand. However, it will probably still be necessary to have some additional capacity to cope with demand variations. Currently demand varies both seasonally and over the day, with an average load of slightly less than 40 GW, which can drop to under 20 GW on a summer

night and rise to over 50 GW on a cold winter evening. This gives a base load of about 20 GW plus a varying additional load. Localised peaks also occur due to synchronised behaviour, for instance an increase in demand of over 2 GW in a few minutes as large numbers of people switch on the electric kettle at the end of a popular television programme, as television power consumption is relatively low compared to that of an electric kettle (Boyle, 2004).

Existing large coal and nuclear power plants do not respond well to a fluctuating demand, as they may take 24-36 hours to reach their full output from cold. A changing demand could be followed by running some stations at part load, but this would reduce their overall efficiency and increase carbon dioxide emissions per kilowatt of electricity generated. A smaller combined cycle gas turbine station can produce some power within an hour, but will take about 8 hours to reach full output. Therefore pumped storage stations are generally used to respond to variations in power demand. There are currently three pumped storage plants in the UK, two in Wales and one in Scotland. The combined peak output is over 2 GW or about 5% of the typical winter electricity demand, but they are only designed to operate for short periods until conventional plant is brought on line (Boyle, 2004).

Renewable energy can be defined as energy flows that are continuously replenished by natural processes. This is in distinction to fossil and nuclear fuels and oil, which consist of energy stocks, of which only finite quantities are available, rather than flows. Renewable energy contributed about 10.9% of global energy requirements in 2002 and this figure is growing at 1.5% per annum (World Bank, 2004). Renewable energy sources can be divided into the following three main categories:

- Direct uses of solar energy i.e. solar thermal energy conversion and solar photovoltaics
- Indirect uses of solar energy i.e. hydropower, wind power, wave power and bioenergy or biofuels.
- Sources of renewable energy that do not depend on solar radiation i.e. tidal and geothermal energy.

Since they are energy stocks, fossil and nuclear fuels and oil will be exhausted at some point. The quantity of fuel that can be extracted and therefore the length of time until exhaustion depend on the availability of technology that can extract the fuel and do so at a price that is considered economically acceptable. Advances in technology will increase the amount

of fuel that can be extracted and improve the economics of this process. However attention should be paid to the environmental and social impacts of this technology and the extraction process. In addition increasing scarcity may change the economics of fuel extraction and significantly increase the price at which fuel extraction is considered economically viable. However, the extent to which technology can increase the availability of fossil and nuclear fuels and oil is limited and therefore a technological 'fix' is not the answer.

Since renewable energy sources are flows, a given amount is available each and every year and therefore it is not possible to overconsume, as the amount of energy extracted from the flow in a given period does not affect the volume of flow in subsequent periods. For instance using a flow of water down a gradient to generate electricity in a given period will not reduce the flow of water and its potential energy generating capacity in subsequent periods, though this may be reduced by climatic changes such as reduced rainfall or increased temperatures leading to a (partial) drying up of the watercourse. The one exception, where renewability depends on renewable rates of consumption is geothermal energy which is not generally an option in Scotland.

At least in theory, renewable energy sources provide potentially unlimited sources of energy. In practice, there are technical and economic limits on the energy that can be currently extracted. However, these limits are the result of a particular political context in which research funding has been allocated preferentially to nuclear power and the way in which energy sources are costed actively disadvantages renewable energy. They also have the advantage of much lower life cycle emissions of carbon dioxide and have no or minimal emissions of these gases when operating to generate heat or electricity.

There has been considerable pressure in the European Union to treat electricity as a totally free market commodity. Prior to 1989 the UK electricity system was under national ownership and had three main components (Boyle, 2004):

- The Central Electricity Generating Board (CEGB) power stations which supplied the electricity.
- The National Grid, also part of the CEGB, which distributed electricity at high voltage.
- The local Area Boards which distributed low voltage electricity to customers.

In 1989 the UK electricity industry was privatised and these parts were split up and sold to a large number of private companies. This did not include the older nuclear power stations, which were recognised not to be economically viable. Since privatisation a number of mergers and take-overs have taken place and some companies have invested in the US and/or have been taken over by overseas companies. For instance the state-owned Electricité de France (EDF) bought London Electricity. Currently decisions about which stations run at a given time are made by computer and based on a continuous process of competitive bidding. A computer model run by the private National Grid Company (which took over the national grid) estimates demand for the next few hours and invites bids to supply electricity. The different power station owners supply bids through computer programs, the cheapest offers are accepted and the appropriate stations are brought on line by remote control. Scotland and Northern Ireland were originally outside this competitive bidding pool, but the British Electricity Trading and Transmission Arrangements (BETTA) brought Scotland into the pool in April 2005.

Like many other countries, the UK has financial incentives for renewables, including the following:

- Capital grants, which are available on a competitive basis for planting energy crops and offshore wind, solar thermal and PV systems.
- The Renewables Obligation, which replaced the Non-Fossil Fuel Obligation (NFFO) in 2002. It puts a statutory duty on electricity supply companies to obtain a certain proportion of their electricity, which will be increased to 10% by 2010, from renewable sources. Additional costs of up to 3p/kWh can be passed on to users, but are unlikely to add more than 4% to bills.
- Exemption from energy taxes.
- Renewable Energy Feed-In Tariffs (REFIT) – fixed premium prices for electricity from renewable sources.
- The Climate Change Levy (CCL), which was introduced in 2001 for energy supplies to business, but not domestic consumers. New renewable sources and 'high quality' combined heat and power systems, but not nuclear power, are exempt.

However, despite these incentives, the basic context of energy policy and infrastructure development in the UK is competitive bidding by a number of private companies. This context does not support the development and implementation of a coordinated energy policy based on long term social and environmental needs rather than short term economic advantage and

including an appropriate energy infrastructure. This type of energy policy will be required to promote a combination of energy efficiency and conservation with a supply based totally on renewables, as the only way to achieve long term security of supply in an environmentally and socially sustainable way that does not contribute to global warming or inequalities in access to energy. (The potentially unlimited availability of renewables was discussed in Section 3.) This policy should involve supply diversity in terms of a mix of different types of renewable energy sources located in a variety of different areas. This would have the advantage of smoothing out variations in supply and improving supply security, as problems with or threats to one type of supply are unlikely to affect others. The costs of more expensive renewable resources could be balanced against those of cheaper ones to give an acceptable average cost.

Only governments are in a position to develop and implement this type of strategy. However they will require pressure from concerned individuals and organisations to do so. Market mechanisms will only promote the energy technologies that are most profitable under existing pricing structures. Government subsidies, legislation and regulation can have a limited influence on pricing and be used to require private firms to supply a certain proportion of renewables, but not to do so in a coordinated way or to the extent required. Market economics based on discounting of the future value, social, environmental and other costs of energy often act as a disincentive to the introduction of renewables. Therefore the introduction of a coordinated energy policy to increase the proportion of energy generated by renewables and promote energy efficiency, as well as a pricing structure to implement social and environmental objectives will only be possible under public ownership. This type of pricing structure could be used to encourage low energy consumption, while penalising high energy consumption, and could even provide a certain amount of energy free of charge to some or all domestic consumers. This would avoid the current tragic and avoidable situation of a number of elderly people dying of hyperthermia each winter.

The direct costs of any energy generating system are based on the following four components: the capital costs of constructing the system (including any interest on loans), fuel costs, operation and maintenance costs and decommissioning costs. For most renewable energy systems, the fuel costs are zero and the capital costs are relatively high and the most significant cost element. Many renewable energy systems have long life-spans. Unfortunately discounting, based on the idea that a sum of money today is more valuable than the same amount in the future, is used in

financial calculations and often applied to the value of the electricity generated, reducing it to zero after a number of years which depends on the discount rate used.

Most renewable energy systems have high capital costs, relatively low running costs, no fuel costs and long life times. For schemes with long life times, such as over 100 years for hydroelectric plants, the capital repayment period (rarely more than 25 years) is much shorter than the plant life-time. Therefore, if the running costs were ignored, the plant could be considered to provide free electricity after 25 years, but the value of this electricity is often discounted to zero. Therefore the existing market approach to evaluating the costs of renewable energy systems generally disadvantages them due to the high initial costs and the use of discounting. This means that the relative economics of renewable and fossil fuel or nuclear systems would change under a different approach to costing.

For renewable energy sources to provide a majority and eventually almost all the world's energy requirements a change in the relative economics of renewable and other energy sources will be required. This will involve one or more of the following:

- A move away from current approaches based on discounting, so that the full life time value of the energy generated can be considered. This will probably require nationalisation of energy provision, as the main concern of most commercial firms is relatively short term profitability.
- Balancing the costs of more expensive renewable energy sources against those of cheaper ones, so that the average cost of the power generated is acceptable, though the costs of some units may be high. This would again require either nationalisation or significant subsidies or guaranteed prices for the more expensive energy systems. Diversity of supply has a number of benefits including smoothing variations in supply, making it easier to follow variations in demand and increasing security of supply.
- Accounting procedures which take account of the full environmental costs of fossil fuels and nuclear power, including the future costs of decommissioning nuclear power stations and storing the radioactive waste for very extended periods.
- Significant financial support, possibly in the form of low or zero interest rate loans, for the construction of renewable energy systems.

This paper has discussed the economic and political context in which decisions on energy policy are taken in the context of a UK case study. It

has demonstrated that this context has a determinative effect on the resulting energy system. In particular it has been shown that a sustainable energy policy based on renewables, energy efficiency and energy conservation will only be possible under public ownership and that current techniques for calculating the costs of energy, including the use of discounting, act as a barrier to renewables.

just say 'no' to nuclear

Roz Paterson

The SSP is opposed to the construction of any new nuclear power stations, not least because of the risks of a devastating, Chernobyl-like nuclear accident, the ongoing problem of radioactive contamination, spelled out in leukaemia clusters and dying marine life, and the million-year migraine of how to dispose of hazardous nuclear waste, still unresolved some 50 years after the nuclear industry was established in the UK.

However, some environmentalists - including James Lovelock, the scientist and founder of the Gaia theory of the earth as a self-regulating mechanism - argue that nuclear power, for all its dangers, is the lesser of two evils in that at least it's carbon neutral and offers a steady source of energy that won't contribute to global warming. But it's a blind alley. Nuclear power is not the clean, green energy source it's cracked up to be, and people like Lovelock should know better. For a start, nuclear power generates electricity, which accounts for only 16 per cent of total carbon emissions.

According to the Sustainable Development Commission Scotland, even if we doubled our nuclear capacity, we would only cut our carbon emissions by 8 per cent by 2035, and not at all by 2010. Secondly, nuclear power generation is by no means carbon neutral. In fact, the nuclear power industry consumes vast amounts of fossil fuel through mining and enriching uranium, and then transporting it halfway across the globe. On top of which are the CO₂ emissions generated during construction and decommissioning of power plants.

According to a study by Germany's Oko Institute in 1997, when you considered the full life cycle of various energy technologies, nuclear power had nearly twice the CO₂ output of wind power. Since then, uranium has become much scarcer and harder to mine, and what is available is of poorer quality, requiring more energy to refine. All of which means that the CO₂ cost of nuclear energy has increased fivefold on the Oko estimate.

There are further drawbacks to nuclear power. It's notoriously expensive. British Nuclear Fuels Ltd has been bailed out to the tune of billions by the UK taxpayer, proving that it cannot compete in the marketplace without massive public subsidy. So it's neither green nor cheap. Plus, if we build a new generation of nuclear power stations, as the government is proposing, it locks us into a centralised energy distribution system for decades to

come.

Yet micro-generation and local distribution could be key to energy security in the future.

There's also the tiny problem of nuclear proliferation. If we don't want Iran to have a nuclear power industry, for fear it could lead to Iran having a nuclear bomb industry, what on earth are we doing expanding our nuclear industry?

Given how close we are, in global terms, to a nuclear conflict, surely this is not the time to start raising the stakes?

Lastly, nuclear enthusiasts are guilty of perpetuating the myth that we can carry on a normal, in terms of energy consumption, so long as we get the right technology in place. This is not so. We need to cut our energy use, and the nuclear lobby's propaganda is just irresponsible time-wasting. We cannot afford nuclear power, on any level, and it's time to move the debate on.

free public transport

Roz Paterson

A report by the TUC's young members forum has found that the rising cost of public transport has impacted badly on young people looking for work, with a quarter of people aged between 16 and 25 reporting that lack of transport is a major reason for them being out of work.

The research entitled Unfare! - found that around half of 16 to 18-year-olds struggled to meet the cost of transport. With the global warming alarm bells ringing, we all know we're supposed to use cars less. But many don't have a choice. In the last ten years, the cost of motoring has fallen in real terms, while deregulation and privatisation has seen the average cost of journeys on trains and buses pushed up by a third. And running public transport for profit means that bus routes which are life-saving for some people, but not enough people to make tasty revenue for corporate shareholders, are scrapped.

The Scottish Socialist Party has put the call for free public transport for all at the heart of its recent election campaign. We'd start with treating public transport like the essential service it is, by taking it out of the hands of millionaire profiteers, and bringing it under the democratic control of elected, public boards at local and national level. Then we could get moving on a programme of expansion, so Scotland has the public transport network we desperately need, and make it free to use.



*Free public transport
is a practical step that
could be taken to
reduce carbon
emissions*

It's a radical step to tackle the climate change crisis - but it's not an outlandish one. In fact free public transport has already been running, with roaring success, in the Belgian city of Hasselt for ten years. The mayor of San Francisco is considering it for his city, and Hawaii has set up a free

public transport zone. The tourist board Visit Scotland has mooted the idea, as a way of getting more holiday-makers to Scotland, and getting those of us who live here moving round the country rather than jumping on the EasyJet to Prague.

Including the cost of public ownership and expanding the network, scrapping transport fares in Scotland would cost around £1billion a year. That's the same amount the Scottish Executive have been prepared to commit to one new five-mile stretch of motorway through the southside of Glasgow, which will only succeed in channelling more exhaust fumes through one of the poorest localities in the country. In fact congestion costs the Scottish economy £1billion every year, and we reckon making public transport free will do more to cut congestion than any other plan on the table.



The perfect ticket for a sustainable Scotland

Road tolls and congestion charges hurt the poorest hardest - and when public transport is already too expensive, that means not travelling at all, further exacerbating the problems found by the TUC's youth forum. Free public transport will make Scotland a green world leader in combating climate change - and it is a tremendous anti-poverty measure, which will generate jobs and end the days where people are cut off from work, training or education, not to mention the more fun things in life, by the cost of getting from A to B.

housing for the future

Gerry McCartney

If a 90% cut in CO₂ emissions is to be achieved, whilst still allowing us to have warm and lit homes then a string of important changes needs to be made.

New housing is continuing to be built to poor standards that do not come close to achieving carbon neutrality. The regulations are loose and are not enforced. Therefore the drive for profit dominates the rationale of developers (Heat, Monbiot, 2006). The Scottish Socialist party have a policy to build 100,000 new homes to rent. This would kill the private development market stone dead, allowing house building to flourish not in the interests of profit, but in the interests of sustainability and social need. Any continuing private development should be regulated by local authorities (not the private sector as is currently the case) and to a much higher standard (see below).

All new-build housing should be to “Passivhaus” standards. This standard of building means that heating of homes is no longer necessary, saving a huge amount of energy. Passivhaus housing is heated by judicious use of solar energy and body heat, as well as gold-standard insulation and elimination of ‘thermal bridges’ (routes for conduction of heat out of a house). A policy to build new public sector housing up to this standard would not only be an environmental measure, but anti-poverty measure as heating bills would disappear.

Existing housing also requires attention. As a matter of urgency a policy to install cavity wall insulation, loft insulation, eradicate thermal bridges, repair draughts and to upgrade glazing to double or triple standard should be instigated. The current grant scheme for insulation is a complete failure. Local authorities should be funded to employ staff to carry out a systematic upgrade of all existing housing in their area to the highest standard that the building allows. This should include local authority, housing association and other public buildings.

In addition to this, community heating and combined heat and power schemes should be considered for areas of housing that cannot be brought up to passivhaus standards. This is a far more efficient method of heating than the current arrangement.

why we need carbon rationing

Roz Paterson

We must cut carbon emissions to the bone, and as quickly as possible. There are two ways this can be done. The first is to allow price to dictate. If oil and gas is rendered costly through green taxation, our carbon usage will certainly fall. Wealthy people will be able to live life as normal but the non-wealthy will find themselves priced out of not just foreign holidays, but also cars, heating, possibly also electricity in general and even food. Many will undoubtedly die, reducing our carbon footprint even further. Not like that option?

Luckily, we have an alternative. Rather than let the markets take charge, we can share the world's resources - there are still enough to go round and we can manage them sustainably - through schemes such as carbon rationing.

Carbon rationing is not to be confused with carbon trading, an EU scheme that enables corporations to buy and sell carbon on the open market while doing nothing to actually reduce carbon usage. Carbon rationing involves giving everyone a fair share of what's left, just as food rationing during the second world war ensured that everyone got enough to eat during a time of scarcity.

To implement such a system, we would need to establish an independent commission to work out how much the UK (or Scottish) carbon emissions total would be for, say, 2008, with a view to reducing this total every year until we reached a sustainable level. This total would then be divided up across the population, with a substantial proportion reserved for industry and public sector usage.

At the moment, carbon rationing is just a theory, though an increasingly talked about theory. On a voluntary basis, activists are trying out low carbon living, through all kinds of initiatives, from communal living to LETS schemes to Carbon Reduction Action Groups (CRAGs). This is an attempt not just to lessen their individual impact, but also to make political waves, and establish what kind of changes we will have to make in future.

Environmental journalist and campaigner George Monbiot, author of *Heat: How To Stop The Planet From Burning*, proposes dividing that total 60/40 between industry and people, this being the proportional usage currently (industry in this case including hospitals, schools, public transport and

private business). The public sector would receive a substantial portion of the 60%, the rest being auctioned off to private business. As for individuals, the 40% would be divided per capita, to give a personal allowance, redeemable through either a smartcard system or even a ration book. Individuals would need their smartcard to purchase petrol, pay energy bills, and buy airline or cruise ship tickets. When it came to things like imported foods, the carbon ration would already have been 'spent' by the business selling them, which could mean that there were more locally produced foodstuffs on our shelves and fewer imports.

It's not the case that richer people could buy their way out of reducing their carbon usage as they would receive the same ration as everyone else, and could only purchase more if they found someone willing to sell. In fact, people on lower incomes who didn't run a car, or didn't take foreign holidays, could do well out of the scheme as they could sell some of their unused ration. An important caveat is that the government would need to pay for the upgrade of energy-inefficient houses. Otherwise those in poorly-built housing would tear through their rations simply through trying to keep their house from being cold.

A second caveat is that public transport would need to be improved, so that those in rural areas, who need cars simply to get to work, wouldn't end up disadvantaged either. Public transport would need to reach a sufficient level that private car use was a choice, not a necessity, which dovetails very neatly with our Free Public Transport policy. Where cars were a necessity, there would have to be carbon allowances for certain circumstances - for instance, if a person was disabled and couldn't achieve mobility any other way. Over the years, the carbon emissions total would contract, as mentioned above. If Scotland's example sparked off similar schemes in other countries - and it is highly likely it would, through public pressure - we could see nations adopting the principle of contraction and convergence.

It goes like this: the developed, or richer, world burns carbon at a vastly increased rate compared to poorer nations. The USA uses 25% of the world total, for instance. Meanwhile, a number of nations are developing their economies, and their carbon usage is going up. However, despite the hype, China and India are using much, much less carbon than we are. And other nations, particularly in Africa, are burning almost negligible amounts. The idea of contraction and convergence is that the world works together on the issue of carbon emissions reduction, so that everyone, in every country, ends up with the same entitlement. We contract our usage, year on year, until there is global convergence, and then we all reduce together, if that

continues to be necessary.

So what will a carbon rationed life be like? It's a good question. We're talking about a life without a car, without flights (unless you saved up carbon credits over a couple of years, or received them as presents from pals etc, to fly to Australia, for instance), with energy efficient homes heated to a degree or two less than the UK average, local food and goods, shops that aren't overheated and overlit, negligible packaging, no plastic bags, etc. This will have to happen if we are to avoid environmental catastrophe, and chances are it will. But we have a choice on how it will happen.

We can let the market decide, which means people on lower incomes would find themselves simply unable to afford transport and heating and perhaps even food, while those on higher incomes could maintain their lifestyle. Or we could do it fairly, and strategically, and ensure that everyone plays their part, and everyone gets through it

In this low-carbon future, we'll likely travel less, and thus live closer to our work and families, eat more locally grown food, throw away less and buy less. In a fairer, less competitive world, we may also find ourselves living with less violence, less war, and less loss. But this can only happen if we are the architects of our the future, not the corporations and capitalists who have brought us to this impasse and, far from searching for a way out, are busy working out how to make a profit from it.

but haven't all the parties 'gone green'?

Gerry McCartney

There is currently a competition on between the big business parties to give the best green impression. Invariably the policies revolve around one of 4 ideas:

Green taxes

Green taxes can come under different guises. Congestion charging, tolls, tariffs and tax relief for 'environmental improvements' can all be described as such. The crucial point with these taxes are that they are regressive. This means that they affect those on lower incomes are disproportionately taxed when compared to the rich. It also means that the rich can 'buy their way out' of restrictions on their consumption, creating an increasing gap between the haves and the have-nots. This can be best illustrated by the recent introduction of car parking charges in hospital. This meant that hospital cleaners and nurses are required to pay the same tax as hospital managers and consultants, taking a disproportionate amount of their income. This was changed to a variable charge based on salary after sustained protests, but remains a flat rate for visitors.

Without any alternative provision (such as improved and cheaper public transport), it is not possible to do anything except drive. Therefore green taxes are more often than not a simple tax on the poor not dissimilar to the poll tax and do not reduce environmental damage without the provision of alternatives.

Carbon offsetting

Another frequently cited environmental policy is that of carbon offsetting. This is where the emissions of greenhouse gases are compensated by the planting of trees which absorb carbon dioxide. There are several problems with this idea. The offsetting industry is unregulated and rarely are the promised trees ever planted. The trees being planted are double counted and are not additional to the planned rate of planting (often for commercial wood and paper production). Therefore the offsetting process does not create an increase in the rate of tree plantation. The fundamental problem is of course that it provides a fig leaf for continued production of greenhouse gases. It is not possible for the planet to burn all the fossil fuels set down in

the earth's crust over tens of millions of years, put the resultant gases into the atmosphere and expect there to be no climatic effect.

Technological development and biofuels

It is often said that technology will save the planet. The increased efficiency of new technologies or the arrival of some silver bullet will allow consumption to continue at the current rates. In contrast it is the continuous development of technology that has driven the increase in emissions. One example of a technological development often cited as a saviour for the environment is biofuel. This is where organic materials (such as oil from palm trees) is grown and used for energy production. This is carbon neutral, but has several problems. Firstly the change in land-use for the production of biofuels has increased food prices as the amount of land for food production has decreased. Furthermore the amount of energy contained within biofuels compared to the area of land needed to produce it is very small. Biofuels could never replace fossil fuels as it would be expecting the solar energy laid down over a year or two captured by a biofuel crop to replace the solar energy trapped over millions of years by plants and animals that have been crushed and converted into coal, oil and natural gas.

Carbon trading

This is not to be confused with carbon rationing. The European emissions trading scheme has actually resulted in both an increase in emissions and the polluters being paid for the privilege! Carbon trading could be made to work if the total amount of emissions allowed was reduced to a level that would prevent climate change and drive adjustment to a post-cheap-oil world. However the whole point of the current trading scheme is to give the impression of environmental action whilst perpetuating the current destruction. Examples of the obfuscation that the government engages in is with their own target setting. Air-travel, one of the main sources of carbon dioxide emissions for the UK, is excluded from the calculation because of a refusal of government to accept half of the emissions of planes taking-off and landing in the country. Additionally, many of our manufactured goods now come from abroad. In this way the carbon costs of our consumption is counted in other countries emissions. This is a contributing factor to the rise in carbon emissions in countries like China.

so what does all this mean?

Gerry McCartney

It is now clear that to avert catastrophic climate change a massive reduction in the production of greenhouse gases has to occur quickly. It is also likely that the availability of cheap fossil fuels is soon going to end and society will be restructured, either in an unplanned and chaotic manner to the benefit of the rich, or in a planned and fair way for the benefit of the entire population.

Scotland as a country is unsustainable, facing climate chaos and an oil-fuelled economic collapse if the status-quo continues. It is in this context that both the necessity and benefits of an alternative should be considered.

The measures described in this pamphlet would have additional benefits that simply those for the environment. Health would improve as food production is taken from the profiteers and planned for sustainability. Carbon rationing would generate equity and a renewed sense of society. The globalised economy and the resultant consumerism would disappear allowing population well-being to rise once again.

However there are potential pitfalls for socialists. A common analysis in the past was that the poor would be 'leveled-up' to the level of the rich with socialism. In the 21st century the analysis needs instead to be that income and consumption will be leveled to a sustainable level, and that in the developed world and countries like Scotland this will actually be a lower level. This does not however mean a population in poverty. But it does mean that we cannot expect everybody to have a foreign holiday every year and a personal car. It does not mean cold housing, but it may mean a return to smaller televisions instead of plasma screens. It does not mean that we will never see a banana again, but it does mean that we cannot expect to have South African fruit every day.

This is a future worth fighting for. Unsustainability is by definition unsustainable. If Scotland does not change course then change will be forced upon us by climate change, energy shortages and economic havoc. The left must argue for a planned and equitable route to sustainability and this could be the opportunity for socialism that we have all been waiting for.

what do we do now?

The principle of sustainability needs to be adopted. This means that the actions of today should not compromise the actions of the future. To achieve this consumption and emissions must be reduced fairly through a process of contraction and convergence globally between citizens. This means a 'leveling up' for those in the poorest countries of the world but a lower average level of consumption for Scotland.

transport

To avoid unsustainability and the worst excesses of climate change there has to be a modal shift from car use to public transport, walking and cycling. This can be achieved by bringing transport into public ownership, making it free at the point of use and expanding its coverage. Dutch-style cycle paths should be built every time a road is dug up and new motorway and airport plans scrapped. A carbon rationing scheme should be implemented and the population should be encouraged to holiday closer to home. A job-swap scheme should be introduced to allow those with the same jobs to swap so that they work closer to where they live.

food

The food industry requires to be brought into public ownership and the production of food localized. In taking the profit out of the system the amount of packaging will be slashed. Recycling and composting of waste has an important role to play. The population needs to consume less meat to be sustainable and carbon rationing will enable this to be done fairly. The recent rise in food prices has been caused in part by the development of land for biofuels in competition to use for food crops. There isn't enough room for both and so biofuels are not the solution.

land use

Many of the schemes to 'offset' carbon emissions have been shown to be a scam with already planned forest planting being sold to naïve consumers as 'additional' afforestation. Most of Scotland used to be forested but this was cleared to provide fuel and building materials to build and supply our urban centres some 300-400 years ago. A new rural policy needs to be developed that includes a major shift towards reforesting the Scottish countryside.

housing

The regulation of the building industry cannot be left to the private sector. All new homes should be of 'Passivhaus' standard and teams should be funded in each local authority to audit every building and make all necessary changes to maximise energy efficiency (such as introducing double glazing or loft insulation). Carbon rationing will limit the use of inefficient household white goods and 'gadgets'. Combined heat and power schemes, or community heating should be funded for suitable areas where passivhaus standards cannot be achieved.

electricity

The production and distribution of electricity should be brought into public ownership. The development of a dispersed renewable energy generation plan should be a priority action and the development of infrastructure (such as electricity cabling) to support this should be facilitated. Fossil fuels and nuclear generation should be quickly phased out.

the economy

The economy should be orientated away from a goal of maximising profit (capitalism) towards goals of sustainability, equity, democracy and population health and well-being. Carbon rationing will be a vital aid to achieving sustainability.

tactics and common ground

There are a number of initiatives that should be adopted:

- Transition communities, towns and local authorities (this is a grassroots movement that takes actions to minimise greenhouse gas emission and reduce dependence on oil).
- Rationing approaches to narrow inequalities and redistribute wealth.
- The enhancement of democracy through public ownership. As energy generation, public transport, building regulation and other sectors of the economy are brought into the public realm, this will enhance the role of local authorities and create a new era of local democracy. Local councillors will gain powers from private industry and the lines of accountability between people and power will shorten.
- Ensure changes do not impact disproportionately on the poor. Carbon rationing is a good example of such a change.

join the fight for sustainability, join the scottish socialist party!

It's been a tough couple of years for the Scottish Socialist Party, but we're still here. We're still fighting for a socialist transformation of society, for a sustainable society free from gross inequalities, free from the horrors of war, and free from the profit-driven madness that blights all of our lives. The SSP has branches across Scotland and if you agree with our ideas, now is the time to join us.

To join, return the form below with a cheque (payable to the Scottish Socialist Party), postal order or standing order form or call in at our office to pay by cash. The minimum subscription is £3 a month. You choose the most appropriate amount based on your own income. If you're paid a wage, we ask you to consider paying a higher rate in order to fund the party's work. As a guideline, those in full time work are asked to pay £12 a month and those in low paid or part time work £6 a month. If you can afford more than this, great. But no matter what subs you pay, your contribution is welcome.

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“Why you have to be red to be green: an exploration of why we need socialism and democracy to achieve sustainability in the 21st century. It was written to encourage debate amongst the broad left and the environmental & green movement. It is based on, but does not necessarily represent, the policies of the Scottish Socialist Party.

Published in February 2008 by the Scottish Socialist Party.