

Daniel Taylor

Submission to the Standing Committee on Industry and Resources  
**Inquiry into developing Australia's non-fossil fuel energy industry**

Dear Sirs and Madams

Summary

1. The issues falling for consideration by this committee concern the future direction of humanity, and concerns whether or not the world should make a great leap forward in nuclear power generation and the production of stockpiles of nuclear fissile materials capable of weaponisation. The implicit question is whether the world should invest in the development of solar wind and other renewable technologies or sacrifice all of this to go down the nuclear route. The answer must be a resounding no, since nuclear power may cause the destruction of human society while solar and other renewable technologies will contribute to the preservation and upbuilding of human society.
2. I am convinced beyond question that uranium mining and nuclear power are not only physically unsafe, dangerous and deadly, but that they have already killed. A decision to maintain or expand uranium mining and nuclear power will kill human beings. A decision to abandon uranium mining will save lives and provide a great example to the world to abandon the illusory benefits of nuclear power and to embrace a long term hope for all of humanity by investing in genuine renewable energies.
3. The term 'future eaters', coined by Tim Flannery, applies to those who would condemn the future generations to suffer, maintain, and clean up this generations radioactive toxicity generated by uranium mining and the nuclear industry. Those who pursue the radioactive nuclear energy route will not end the future of this planet, but if humanity survives the curse those people are bequeathing it, they will look back upon this generation and consider it no different to the scribes and pharises, hypocrites condemned by Jesus.
4. I propose the following answers to the terms of reference of the Committee, and below I will detail my reasons;
  - A. *Global demand for Australia's uranium resources and associated supply issues;*

Australia should legislate to terminate all mining and exports of uranium in Australia, including a ban on disturbance of uranium deposits in any other mining activities.

*B. Strategic importance of Australia's uranium resources and any relevant industrial developments:*

Australia should make a clear statement to the world that the nuclear industry is not the way to create a viable future for humanity on earth, and immediately halt all uranium mining and exports forthwith. Australia should not support the idea that all fossil fuel energy consumption should simply be replaced with nuclear derived energy. This would be uneconomic, unrealistic and unattainable, unsafe, lead to wars and nuclear terrorism and accidents, and ultimately be probably lethal for humanity and life on planet earth.

*C. Potential implications for global greenhouse emission reductions from the further development and export of Australia's uranium resources;*

The uranium and associated nuclear industries even if fully implemented in a 'bigger better faster more' mentality, will not significantly affect greenhouse gas emissions, which would continue to rise with unabated energy use. Long term economic costs of Renewable industries are poised to deliver mankind with power over the next several thousand years but requires decision makers now to support renewables as opposed to nuclear.

*D. Current structure and regulatory environment of the uranium mining sector (noting the work that has been undertaken by other inquiries and reviews on these issues)*

Uranium mining is itself unsafe in that it liberates otherwise fixed uranium deposits and makes them water soluble or capable of transmission by air in the form of liberated radon gasses and dust particles. All disturbances of uranium deposits must be prohibited by law.

5. I think it is important to remember the words of Mikhail Gorbachev, to the Politburo on 3 July 1986, words which applied not only to Soviet nuclear industry, but to the whole nuclear industry throughout the world in the world, not only in 1986, but also today;

*"For thirty years you scientists, specialists and ministers have been telling us that everything was safe. And you think that we will look upon you as Gods. But now we have ended up with a fiasco.."*<sup>i</sup>

The democratic risk of uranium mining and nuclear power:

6. Nuclear power and uranium mining are non-consensual industries. There always has been and always will be opposition to uranium mining and nuclear power. The ultimate form of democracy involves genuine consensus decision making and this will never be possible with uranium mining and nuclear power which will always involve trampling over the objections of significant sections of the population.
7. Consent, to be real, must be informed consent. Neither can it be mere apathy. Silence is not consent. There is no silent majority decision. The reality is that participatory democracy means participation in the decision making process. The Government is the decision making body, but it relies on participation of stakeholders in the decision making process, to provide it with sufficient relevant information to make a genuinely informed decision.
8. Thus the opponents of nuclear power are one side of the debate and the proponents are on other. Neither side can say that the silent majority supports them, for the silent majority are not participants in the decision making process, and if they wish to be then they must take up their pens and participate in the decision making process.
9. A genuine consensus means taking a path to which nobody can object. Nobody can genuinely object to solar power since it will not hurt anybody. Hence the creation of a solar energy farm will be consensual in that any objections can be satisfactorily negotiated between the parties.
10. Wind power is another factor where there may be some slight objections, but nothing which cannot be resolved by way of negotiation. For instance, some people have objected to the sight of wind farms – however the wind farm will not kill them and they can move away if they so please. Of more concern is bird strikes by wind turbines, however this may be able to be dealt with by placement, or deterrence in the same way that scarecrows used to be used to deter birds from farmers crops. In any case, the amount of bird strike will not of itself eliminate birds on earth, however climate change may and so wind farms are preferable at this time while efforts are made to address bird strike. In any case, wind power is not fundamentally anti-democratic since by negotiation amongst the differing parties all objections can be resolved.
11. But the unspoken objection of the uranium mining and nuclear power advocates to renewable energies is the opportunity cost – which is to say that they argue that money invested in renewable energies is money, which should instead be invested in nuclear power. A serious government investment in non-nuclear renewable infrastructure is required, such as the Government formerly invested in Telecom to build a national telecommunications infrastructure. However this would require a quantum shift in Australia away from the current debate which has been limited to the question of whether or not to support uranium mining and whether or not to build nuclear power stations in Australia. A real government investment in renewable solar and

windfarm infrastructure and technologies would pay long term benefits and dividends to Australia over centuries and millennia, and as this reality becomes clearer it would threaten and undermine every argument put forward by the proponents of nuclear power and uranium mining. This is because the opportunity cost of not investing in nuclear power is ultimately not a cost at all. As a nuclear reactor finishes its productive life the burden it and its related infrastructure including uranium mines imposes a perpetual and increasing burden on society.

12. In contrast, any investment in renewable energies such as solar or windfarms can continue to benefit society for decades, centuries, and even millennia (while a solar panel may need a clean every year for several centuries, a wind turbine may need replacement parts on a more regular basis).
13. The opponents of uranium mining and nuclear power have a genuine objection to uranium mining or nuclear power in that cannot be proven to be safe, because both have already caused deaths and so by their nature are unsafe. The uranium mining and nuclear power industries may say that precautions can be taken but the risks and dangers remain. One death from either uranium mining or nuclear power indicates that in fact the industries are not safe, and there have been many such deaths. So any objection to uranium mining and nuclear power is a genuine objection not capable of resolution by negotiation, and therefore the imposition of these industries over the objections of others is non-consensual.
14. Renewable energies could with proper investment now create a modularised infrastructure system which can be maintained and expanded in perpetuity to supply all of our power needs over the next millennia and beyond, but nuclear power could not. The problem is that the parameters of the debate are skewed by looking only at a ten, twenty, or fifty year economic and safety time frame rather than a hundred, two hundred, five hundred or one thousand year time frame and beyond.
15. An unspoken but obvious attraction of nuclear power for Australia's trading partners who wish to import Australian uranium is that they intend to produce a stockpile of nuclear fissile material, which can be maintained and in an emergency quickly and easily weaponised into nuclear warheads. As a byproduct electricity can also be produced at the same time. In order to keep such a stockpile of nuclear fissile material, countries such as Japan, Germany, France, England, and China require a nuclear power industry. This nuclear power industry must then produce apparently rational arguments to justify its existence in terms other than for the mere production of nuclear fissile material, and so the proponents of nuclear power argue that with a great leap forward nuclear power plants can be built by the thousands or tens of thousands and can reduce or replace all fossil fuel emissions and save humanity from the greenhouse effect. But the industry must go further and criticize renewable energy sources such as solar, wind, geothermal, tidal, or ocean current energy as being uneconomical and no alternative to nuclear power. The nuclear industry must ridicule the proponents of renewable

energies as superstitious luddites, fairytale dreamers, ultra-leftists, and environmental fascists.

16. Experience shows that with sufficient investment, renewables power sources such as wind, solar, and geothermal are real competitive inputs into continental electricity grid systems, and moreover they will continue to operate long after every single nuclear power plant in existence today is condemned as toxic waste. So the proponents of the nuclear industry must ensure that government investment is diverted away from renewable technologies which would steal the limelight from nuclear, and that the money is instead invested in nuclear fuel cycle, which will create so much ongoing maintenance costs, waste management costs, decommissioning costs, and accident costs, that there will simply not be any money or opportunity to invest in renewables.
17. The proponents of nuclear power speak for the hidden agenda of defence departments and governments of the world who are hidden proponents of so called civilian nuclear power – which will equally produce materials capable of processing into nuclear weapons capable materials. Nuclear fission in the United States was first successfully developed for the purpose of producing nuclear weapons. Electricity was merely a by-product generated from the heat of the fission. Windscale, now called Sellafield, England's first nuclear fission reactor, was first built to produce nuclear fissile materials for a nuclear bombs and only later adapted to the production of electricity as a by-product. Production of electricity has served as a cover for the stockpiling of nuclear fissile capable materials in countries from South Africa to Japan to North Korea and Iran, while it has served as a cover for nuclear weaponisation of such materials in the United States, France, the UK, China, and Russia, Israel, India and Pakistan.
18. The former Governor General of Australia Bill Hayden has called for the creation of a nuclear power industry in Australia for the express purpose of producing nuclear fissile material capable of weaponisation for the Australian Defence Force.
19. Those seeking nuclear fissile materials and requiring therefore a nuclear power industry form a lobby group to promote nuclear power. Just as smoking and asbestos were argued to be safe by industry lobbyists who knew that it killed people, so too the nuclear industry argues that nuclear power and uranium mining are safe knowing that it kills people.
20. In fact opponents and deadly enemies such as the USSR and the United States even at the height of the cold war both had a vested interest in lying to their public's that uranium mining and nuclear power were safe. In this sense the USSR and the United States were allies in presenting a united front in criticising the opponents of uranium mining and nuclear power. Hence opponents of nuclear power in the former Soviet Union, in China and Tibet, in India and Pakistan, in Iran and in Israel, and in Australia, and every country involved in the nuclear cycle, are all criticised by their governments and the

nuclear industry as being anti-democratic, neo-fascists, ultra-leftists or ultra-rightists, revolutionaries or counter-revolutionaries as the case requires.

21. A second by-product of the production of nuclear fissile capable materials, apart from electricity, and by moving the debate into the field of economics, attention is diverted from the real motivation for the use of nuclear power which is the production of weapons capable nuclear fissile materials.
22. Sixty years into the nuclear age, the splitting of the atom has not proved to be the saviour of humanity. Those who continue to argue that nuclear technology will save us from the global warming crisis fail to see that nuclear power is the stone age technology of destruction. Solar, wind, geothermal, tidal and ocean current technologies are the very space age technologies which can save us.

#### Absence of informed consent

23. The proponents of nuclear power and expanded uranium mining do not explain to the public, or indeed to government, the full consequences of their rationale for arguing that nuclear power can solve the greenhouse crisis. The political and security risks of a great leap forward in nuclear power generation would have to be managed under the non-proliferation treaty, signed by every country in the world except, notably, India, Israel, and Pakistan, and from which North Korea has withdrawn its signature.
24. Opponents of nuclear power are accused of holding back humanity from the one thing, which the nuclear lobby says can save us – unrestrained development of nuclear power. We need bigger, better, faster and much more nuclear power than ever before, so they say. The nuclear lobbyists say that opponents do not understand that it was not nuclear power, which caused the Chernobyl catastrophe, it was communism. I beg to differ. If the vast sums of money invested into nuclear power and nuclear arms had been invested instead into wind and solar technology, then the Chernobyl reactor would not have even needed to be built. There can be no question that a windfarm could not have created a catastrophe such as the Chernobyl disaster. The proponents may say that Chernobyl was an aberration and that a limited number of people have died from radiation. This is the same argument which was used by the tobacco and asbestos industries. ‘Oh so your whole family was exposed to radiation from Chernobyl and your mother and your son died from cancer, you’ve had a miscarriage and a baby with birth defects and you’ve got cancer too? Well prove that it came from Chernobyl’. Of course such matters are individually incapable of proof. But such occurrences obviously did come from Chernobyl. The Uranium Information Centre happily forgets to mention the birth defects, the miscarriages, the childhood cancers, which have risen dramatically in areas exposed to radiation from Chernobyl, since like the tobacco industry, such matters have not been proved in a court of law to be caused by the obvious cause.
25. There can be no question that it would be preferable to see solar and wind farms from Angola and Australia to Vietnam and Zaire rather than nuclear power plants dotting every spot on the globe, for both safety and security

reasons. A principled stand by this government halting all uranium exports on principle would encourage other governments to desist from nuclear programs which would be at the least unsafe and also create a perpetual security risk.

26. Another factor which should be considered by this Committee is not only the safety and security risk of nuclear power, but also the geopolitical risk of nuclear power. By promoting windfarm and solar technology, this government could promote international trust and goodwill.
27. The widespread construction of thousands of nuclear power plants throughout the world could itself generate an arms race. It would at the very least contribute immediately to a nuclear power race. It would create suspicions of covert nuclear weapons programs, real or imagined, which would result in breakdowns in trust, resulting in wars. The creation of large and ever growing amounts of nuclear fissile material around the world may result in self-fulfilling prophecies in relation to covert weapons programs and nuclear arms races. The more international suspicions grow of covert nuclear weapons programs, the more need countries will see to have a covert nuclear weapons program. If history is anything to go by, including the intelligence failures in relation to suspicions of Iraq having an ongoing nuclear weapons program, then Australia supplying uranium to the world can only contribute to international instability and make future wars more likely, as well as more devastating.
28. The former Governor General Bill Hayden himself has said that Australia should have nuclear weapons. The proponents argument goes that if the non-proliferation treaty breaks down and an unrestrained nuclear arms race ensues, then we should have a ready stockpile of nuclear fissile material ready to manufacture our own bomb. It is apparently irrelevant that we supply the uranium to the world, some of which will become nuclear bombs, or at least will free up other countries indigenous uranium supplies to be used for their weapons programs. If other countries use our uranium to make nuclear bombs there can hardly be any argument against us making them also, or so the argument would go. But this argument is circuitous if we supply the uranium in the first place to others, just in order that they may develop nuclear weapons, so that we, in response, may also develop nuclear weapons.
29. Nuclear fission was first developed to create materials for the creation of atomic bombs. Electricity was simply a bi-product. Conversely, nuclear weapons materials are an inevitable bi-product of nuclear power. The remains a direct relationship between possession of nuclear power and nuclear weapons while not.
30. Nuclear energy creates war - - witness Iraq, WMD, and the failures of the intelligence agencies of the world. It is not only proliferation of WMD that is the problem, it is also proliferation of suspicion which is equally dangerous. With the nuclear industry, war over Weapons of Mass Destruction is the way of the future. Every country that acquires nuclear power has access to a stockpile of fissile material. Every other country looks on with suspicion. Now

mere suspicion of WMD is a casus belli for war. War is never ever good for the environment.

If the United States and Australia want nuclear power - and want it also for China and India, then they have to think that Mauritania, Algeria, Tonga, Haiti, Congo, Uzbekistan, Kazakhstan, Armenia, Sudan, and so many other countries will also exercise their right to have nuclear power - and build up stockpiles of high level nuclear waste including fissile material.

31. While the Australian government supports the export of uranium, it may be that the soldiers of this country have to again fight another war over suspicions in relation to fissile material and weapons of mass destruction.
32. The conflict costs of nuclear energy are potentially perpetual, enormous, unmeasured, unconstrained, and eternal. The second gulf war was a nuclear war in that it was at least from the coalition side said to be a war over nuclear weapons.
33. Directly related to the conflict costs on nuclear power are the security costs of maintaining in perpetuity security over fissile materials - these costs are again unlimited and unconstrained, and in the case of lost materials, potentially catastrophic.
34. In contrast renewable energies are safe in the sense that they do not directly produce any substances capable of weaponisation, but on the contrary create benign employment and economic empowerment and thereby reduce tensions and conflicts in the global village.

The Chernobyl factor;

35. The nuclear industry is inherently politically unstable - In my view the entire nuclear industry would be rejected by humanity if the full costs of the Chernobyl meltdown were widely known, and these costs include deaths from cancers, enormous social stress costs, miscarriages, birth defects and genetic damage which will be carried from generation to generation, radioactive land, air, water and food, thus crippling the agricultural industries as well. The entire nuclear industry worldwide would be subject to possible closure in the case of another Chernobyl style accident anywhere in the world, whether caused by human error, technological failure, military strike or terrorist action, earthquake or other natural cause, or a single nuclear weapons exchange somewhere in the world.

In contrast such a calamity simply could not happen, or be caused by renewable energies, and neither would the renewables industry be affected by a calamity in the nuclear industry.

36. The proponents of nuclear power wonder why the western opponents of nuclear power are not protesting about Iranian or North Korean nuclear power projects. But the reality is that the very same arguments which are used to oppose nuclear power in Iran and North Korea apply also to Australia and the



rest of the world. Only if we genuinely forego all financial profit from uranium and halt immediately all exports of uranium, can we genuinely argue against uranium mining and nuclear power – per se – anywhere in the world. Only when we halt all uranium exports will we have genuine moral authority to demand another country not to use nuclear power.

37. But some of the opponents of nuclear power are criticised as being emotive or neo-fascists – who wish to impose their view on others. They are said to instill an unreasonable fear in the majority, a fear of radiation. I for one believe that not only industry, but also governments will lie to protect their own interests. The Australian government knew that radiation would harm its servicemen, yet it willingly contributed them to be used as guinea pigs in the testing of British nuclear weapons. Once a liar always a liar. I do not believe that any government can be trusted with nuclear power or nuclear weapons.
38. The uranium industry cannot assure us that if we replace all fossil fuel energy sources with nuclear power, there will never ever ever be an unauthorised release of radiation in Australia not now, not in a hundred years, not in a thousand years, not in ten thousand years.

39. Or should we learn to pray -

Our father, who art in heaven  
Hallowed by thy name  
Thy kingdom come  
Thy will be done  
On earth, as it is in heaven  
Give us this day  
Our daily bread  
And forgive us for contaminating others with radiation  
As we forgive those who contaminate us  
And lead us not into temptation  
But deliver us from evil  
Amen

40. Opponents of nuclear power and uranium mining are criticised for being radiophobic. The opponents fear radiation because they cannot see it, they cannot smell it, they cannot hear it, they cannot feel it. Is this irrational? Certainly not. They are frightened of the unknown. But we should be frightened.

Australia's part in the nuclear fuel cycle.

41. Nuclear power, it is said, will solve the world's greenhouse gas emissions problem. Reactors would be built in every country from Angola, Australia, Burma and Cyprus to Malawi, Surinam, Tierra del Fuego, Tonga, Turkmenistan and Zimbabwe, and in every city from Abidjan, Adelaide, Addis Ababa, Dacca and Dili, to Kathmandu, Surabeya, Sydney, Vientiane and Zagreb.

42. The proponents of nuclear energy envisage that greenhouse gas emissions will be eliminated by a chain of vast nuclear power plants with electricity provided throughout Africa and the world, linking every home to the nuclear grid. They envision enormous hydrogen conversion plants would be built next to nuclear reactors by the sea. They're vision would involve the wholesale displacement of the coal, oil and natural gas industries and its replacement by a vast chain of nuclear reactors powered by uranium from Australia and around the world boiling water to turn turbines to produce electricity to separate water by electrolysis into oxygen and hydrogen and its shipment around the world to consumers in such exotic locations as Addis Ababa to put into their cars to drive to work.
43. In this utopian vision put forward by the proponents of the nuclear industry, everyone can live happily ever after under the protection of the world's biggest brother, the International Atomic Energy Agency, which would need to be expanded by an order of a hundred, a thousand, or a million times in size and power to oversee such a radical great leap forward in nuclear power.
44. We all might also pray that nothing goes wrong.
45. Common sense and Murphy's law tell us otherwise. Something will always go wrong and we had better expect it.
46. Like the historical great leap forward, untold millions would die from this nuclear utopia. For starters, no sooner did human beings pick up sticks than they used them to hit each other, and this has carried through to mankind's discovery of nuclear fission. Human beings always have wars and it would be a wise move for humanity to engage in nuclear disarmament and end the creation of nuclear fissile material. Secondly, human beings are accident prone and if one is not another is and they can kill you with their accidents. It is said that the only certainty in life is death and taxes. I like to rely on the sun coming up and think that solar power might profit from such an expectation. But with the international expansion of nuclear power, it certainly enlarges on the possibilities of both death and taxes.

#### Uranium mining and the issue of waste;

47. The first waste dump in the nuclear cycle is the radioactive tailings. They would have remained fixed for millions or billions of years. Now liberated, even if placed back under ground they can be dissolved in underground water and poison the environment, the local people, and people further afield, and enter into the foodchain. Radon gasses are liberated from the tailings and they can travel thousands of miles affecting first workers and local and indigenous communities, before spreading more widely and possibly reaching large cities.
48. Every single uranium mine in Australia is a waste dump already. I remain deeply disturbed that the Great Artesian Basin is subject to in situ leaching of Uranium deposits, and an expansion of mining at Olympic dam, which will liberate all at once uranium tailings which otherwise would have remained fixed for millions and billions of years. This liberation of radionuclides poses

an unbearable risk to one of Australia's lifelines, the Great Artesian Basin. While human society has lived in inland Australia for many tens of thousands of years, it is only within the last few decades that it has come to like Uranium. It is not necessary, but the dollars it brings may temporarily prop up the economy. But when the Great Artesian Basin is finally lost, used up for mining and polluted with radionuclides, then future generations will look back at us and curse us, as they are forced to leave a country which was and could have remained so beautiful.

49. The recent decision of the Parliament to forcibly impose a nuclear waste dump in the Northern Territory, against the express wishes of many indigenous and non-indigenous locals, and on or near Aboriginal land and communities, exposes the nuclear industry and its consequences as non-consensual in nature. Radioactive waste dumps have been imposed on unwilling local populations in China and Tibet by Mao and in the Soviet Union by Stalin and its descendent governments which inherited the ruins of the USSR, or by military dictatorships such as Pakistan, or by dictation by the majority – the democratic model such as in India, the United States, in Israel - the Jewish State, in Iran – the Shia Muslim state - but it is the nature of the nuclear industry itself has created the problem which would not exist if the peaceful renewable energy route was taken. Now this Parliament in Australia has taken the non-consensual route to impose a nuclear waste dump on the people of the Northern Territory, which must be seen by those locals whose wishes have been overridden as tyrannical.

#### Costs of uranium mining.

50. The environmental impacts of uranium mining including the sudden release of radon gas and the liberation of radioactive tailings which even if placed back in the ground are liberated and free to be dissolved in ground waters, which otherwise would take millions or billions of years to dissolve.
51. This exposes local communities including mine workers at work and at their residences, local towns and indigenous communities, to the risk of radon gas exposure or radioactive dust exposure. In addition liberated radioactive tailings even if stored underground are capable of dissolving in underground water, and release in a geographically instant (i.e. release into the environment over a decade or century of radiation which otherwise might take millions or billions of years.
52. I propose that not only is the nuclear power industry uneconomical in comparison to renewable energy, nuclear energy imposes lethal social environmental, and human costs on humanity, and a potentially perpetual and crippling economic cost on the long term viability of human society. In contrast, renewable energies offer hope for a clean and passive increase in benefits, wealth, employment and consequently human happiness, with diminishing costs.
53. Even limiting the question to that posed by Bill Clinton to his rival George Bush (Snr) in the 1992 United States presidential election campaign – *“It's the*

*economy, stupid*”, I firmly believe that on the hundred or thousand year cost/benefit analysis there can be no question that renewable energy is economical whereas nuclear energy is uneconomical.

54. Economic modelling requires life-cycle analysis but I also propose that it must be stated that the technologies must be assessed not only in terms of their productive life-cycles but also of their non-productive life-cycles.
55. Thus a feasibility study of a solar farm or wind farm should expect benign production to be continuing in 200 years. In stark contrast, a nuclear power station would be after 100 or 200 years not a unit of economic production, but rather of economic destruction, or waste, in the sense that the entire infrastructure and spent fuel of the entire project, as well as the tailings and machinery used in mining the uranium, has become radioactive waste requiring economic input but providing no useful economic output.
56. In this sense, whereas our forefathers left for us the great railways, the sewerage systems of London and other great cities and so on. What the nuclear industry proposes to leave to the future generations of this country and the world in 200 years is nothing short of an unproductive, and expensive, dangerous and poisonous nightmare.
57. The nuclear fuel cycle involves the destruction of matter and turning it into energy. We should think a little bit more seriously about the concept. The destruction of the Uranium atom releases explosive energy and remnant matter which is itself destructive of life. This is why it is inherently dangerous, because it involves breaking down that which has been created. I do not believe that the nuclear industry is necessary for human survival on this planet, but this industry could bring about humanity's demise.
58. I do not think it dis-ingenuous to propose that we take a one hundred, two hundred, five hundred, and one-thousand year approach to this issue in our economic modelling.
59. An unstated assumption of the proponents of the nuclear industry is that the future is too uncertain to make investments having a one thousand year return. However this reasoning is not only short sighted, but also circuitous. The nuclear industry itself creates conditions for future uncertainty for the world – will there be a world? Will there be a nuclear holocaust? Will we all be consumed by radioactive contamination and the human species die out? The nuclear industry then uses that uncertainty to push the illusion of its own inevitability.
60. We should not fall into this trap. The nation of China has existed in some form or another for several millennium, and so has the Great Wall of China. Although it no longer serves its original purpose, the Great Wall of China is a current asset of the Chinese nation, giving it pride and drawing tourists. But it is not only emperors and despots who can think of the nation into the next thousand years. In contrast not only Chernobyl, but every single nuclear reactor in existence today will only become a toxic and barren wasteland

robbing future generations of access to the prime gift to humanity of land, and tying up resources in care and maintenance of the toxic wastelands left by this current generation.

61. While Hitler proposed that his Reich of death would last for a thousand years, why cannot we build an infrastructure of peace to last a thousand years.
62. The planners of this generation should model the energy industry on the great railway systems and great sewerage systems of old, as well as those great planners who set aside national parks in the nineteenth and twentieth centuries and planted or replanted forests or even plantations of trees for future generations. The railway and sewerage corridors may have been upgraded, but the infrastructure produced even two hundred years ago has given benefit over its entire life cycle and indeed will continue to do so for another one thousand or even ten thousand years and beyond.
63. The same principles must be applied in the case of the energy industry. I can see no reason why a solar cell should not be installed in an Australian desert, and with proper maintenance and cleaning, continue to provide electricity to future generations for the next 100, 1000, or even 10,000 years.
64. The same principle applies with the wind power industry. Although a turbine may need maintenance and replacement of parts, the tower itself if properly built can be maintained for the next thousand years or so and be an asset contributing to society for a thousand years and beyond. If it needs to be recycled it can be recycled safely and give employment.
65. A uranium mine, and a nuclear power reactor, as well as a nuclear warhead, reactor, or cargo sunk in the ocean in a vessel at sea, will become nothing but a cursed liability to the future.
66. We should beware what happened in regards to Chernobyl for it was not a symptom of communism but of the nature of the nuclear industry itself; *“Throughout the entire system there has reigned a spirit of servility, fawning, clannishness and persecution of independent thinkers, window dressing, and personal and clan ties between leaders”*<sup>iii</sup>
67. The same can be said of the uranium and nuclear power lobby in Australia who criticise and scoff at independent thinkers who oppose uranium mining and nuclear power.

The opportunity cost of nuclear power and the one hundred year scenario

68. In the case of renewable energies there is and remains for the future the opportunity for choice of centralisation and decentralisation whereas in the case of the nuclear industry there is only the route of centralisation.

69. In my view the government has to look at the long term efficiencies in renewable technologies - maintenance costs of a solar panel over 1000 years (regular wiping away of dust) and long term production of electricity (1000 + years?) versus 100 year maximum use of a nuclear reactor with every component of infrastructure, fuel, and all inputs becoming radioactive waste - i.e. future costs beyond the productive life of the plant of lost land, maintenance and accident costs.
70. Renewable energies are adaptable, and updatable technologies compatible with existing technologies for both centralised and decentralised renewable energy production (i.e. multi module production) versus frozen technological status in the case of megalithic nuclear reactor production.
71. In the case of renewable energies new technologies can simply be bolted on to infrastructure already in place for the older technology renewables and thereby supplement existing infrastructure - whereas in the nuclear industry the safety deficiencies and decay, deterioration and contamination of obsolete units renders them worse than useless as time goes by.
72. Solar energy and other renewables are high technology whereas nuclear power is comparatively low technology or stone age.
73. The safety costs/benefits of renewable energy are compelling (e.g. construction accidents, electrocution from produced electricity) versus the the safety costs of nuclear energy - safety costs such as nuclear meltdown, radioactive releases, radiation exposure to workers or civilians, nuclear weaponisation, loss or theft of nuclear materials, use of depleted uranium in weapons, and construction accidents or electrocution & etc.
74. There has been little public discussion in Australia of the possibilities of large scale solar and wind power collection for the production of hydrogen fuel. A renewable energy infrastructure devoted to production of hydrogen from renewable will increase in financial efficiency with technological advances over its life of years, decades, and centuries. Conversely a nuclear infrastructure commissioned for this purpose is of an inherently limited lifespan, and inherently unable to take advantage of new technologies in either safety or efficiency due to the frozen megalithic nature of a nuclear power plant.
75. One of the most powerful stories that I have seen in relation to nuclear power is the story of "The widomaker" - its the true story of the Soviet nuclear submarine that had a near meltdown in 1961, and one after another, seven sailors had to volunteer to undertake the fatal task of entering into the reactor zone to weld a makeshift cooling system to the reactor. The proponents of nuclear power should ask themselves whether in similar circumstances they would exhibit such courage, especially when the whole concept is unnecessary if renewable energy route is taken instead.

#### Social and human cost/benefit analysis

76. The government should include in its decisions a philosophical cost benefit analysis of the importance of being able to walk in the bush or the forest (and having a bushland or forest) in bare feet if desired, and feeling safe from radioactive contamination, secure in breathing the air, drinking the water, and eating the food produced by the nation.
77. Any analysis of nuclear power should include an examination of the social impact of lost land at and around Chernobyl, and the psychological and social impact, as well as economic impact of radiation pollution in that case. (i.e. the fact that Eastern European and especially Belorussian, Ukranian, and Russian food exports are treated with suspicion by many consumers due to the possibility of radioactive contamination.
78. It is no good for the nuclear industry to simply say that nuclear power is safe. Solar power is safe. Nuclear power is not safe. Honesty is very important in this debate and it is not honest for any human being to say that nuclear power is safe.

The alleged unreliability of renewable power;

79. The sun is the most reliable thing in our lives. We rely on the sun coming up every morning and setting every evening. Transmission lines accross time zones can take advantage of the revolving earth to supply regular reliable solar power over the coming centuries.
80. The possibility of renewable energy input into a east west cross continent (or intercontinental) transmission grid should be explored. Such a system would be capable of modular expansion by the inclusion of progressively more solar or wind farms accross the continent. Such a system could conceivably provide power to South East Asia via undersea transmission. Undersea power transmission to and from New Zealand would enable solar collectors in Western Australia to power night lights in Sydney or Auckland while thermal power from New Zealand could supply power to night lights in Perth or conceivably, Jakarta.
81. There is also an international benefit of sharing safe high technology renewable resource technology versus the high security costs, high secrecy and comparatively low technology and frozen technology of the nuclear industry.

Solar and renewable technologies;

82. With solar or renewable technologies, technology capital costs need not be sunk at frozen technology levels so efficiency can increase with time, benefits increase not only lineally but exponentially with time as efficiency increases (i.e. an energy saving light globe makes a solar cell and battery system more economically efficient), while future costs diminish down to zero and below

zero (i.e. while solar cells are theoretically capable of operating forever and compatible of horizontal and vertical integration with more technologically advanced infrastructure and components, if a time comes when a future generation decides to dismantle and recycle the solar or wind generation materials this can be done safely and generate employment at the same time).

83. Thus in the case of renewable energy the 100 year or 200 year situation we are presented with the benign and democratic situation where costs reduce towards zero while benefits continue to increase by horizontal integration with the addition of bolt on modules to increase the size of the total infrastructure (i.e. progressively adding more (and more advanced solar cells or windmills to complement the existing solar cells or windmills), and vertical integration of new technologies and infrastructure to increase the efficiency and benefits of the existing solar cells (e.g. a transnational grid to link a solar farm in Western Australia to provide electricity to Sydney or even to Auckland, and the use of progressively more efficient means of transmission of that power and end point use with more efficient appliances).

#### Cost benefit analysis

84. The shortcomings of feasibility studies into nuclear power and the unrealistic limitations placed on renewable energy infrastructure feasibility studies are in my view causing the government to make wrong decisions in relation to both.
85. Whereas the 100 or 200 year costs are not realistically addressed in assessing the unit costs of electricity generated through nuclear power, conversely, the 100 or 200 year cost/benefits of renewable energies are not realistically assessed in projecting the unit costs of electricity of renewable energies.
86. While nuclear technology for any given nuclear power plant largely frozen at the date of construction, with a sunk capital cost (including dollar costs, lost opportunity to invest in other areas costs, health costs, waste management costs, lost land area costs, pollution costs, lost peace of mind costs) and a hundred year life plan for current generation reactors, efficiency growth is inhibited and the structure becomes progressively less efficient until it becomes in totality nuclear waste. There is a progressive decline in efficiency and benefits of nuclear power as new technologies leave the existing plant behind, and a progressive increase in economic and social costs of the nuclear power plant.
87. A nuclear power plant starts with high sunk capital costs, frozen technological status, and limited benefits. There is a small amount of employment in running a plant, hopefully regular electricity over a life of not more than 100 years, but possibly less due to effects of effects of international nuclear weapons exchanges or large scale nuclear accidents or radioactive releases. However as time progresses, the economic social and environmental costs of the uranium mine and the nuclear power plant increase exponentially into perpetuity, what is for humankind effectively eternity, while the limited benefits reduce over time to zero and worse, go far below zero again in an unconstrained, unlimited



and perpetual way. It takes manpower and electricity and other sources of power to maintain the radioactive waste including the decommissioned plant, wasted land, and to look after people who fall sick from radiation exposure.

88. In my opinion the concept of imposing perpetual and unconstrained costs and zero benefits on future generations is unfair and undemocratic, unreasonable and wrong. In my view this kind of imposition has all the hallmarks of *maoist* or *Bolshevik*, or *fascist* totalitarianism, and this is so even where the decisions are made by or by international or intranational corporations, by the world bank (by financing such nuclear power projects), by democratically elected governments. Thus the 100 or 200 year scenario in nuclear power is a nightmare of exponentially increasing, perpetual, limitless and unmeasurable economic, human, social, and environmental costs and zero benefits.
89. Capital invested into nuclear energy is truly sunk capital cost but worse it is a lost capital cost in that ultimately the investment will turn into radioactive and toxic waste.
90. The use of nuclear power is such a massive sunk capital cost that it discourages investment in efficiency (i.e. an education campaign to encourage saving power), and reduces the ability of society to invest in other more efficient technologies.

#### CONCLUSION

---

91. By allowing the mining and export of uranium, the Australian government is liberating vast quantities of radiation, radiation which if it contaminates human beings will not only kill but will also interfere with, impede, or prevent human reproduction. The victims will curse those who imposed such a cruel affliction upon them. I will not stay silent. Your government should support safe renewable solar, wind, geothermal, tidal, and ocean current renewable technology infrastructure which will uplift human society over the coming millennia, rather than nuclear power which will only impel human society to destruction, misery, suffering, wars and death. The Government should support natural renewable energy technology and infrastructure to underwrite the nation for the next thousand years.

Yours faithfully  
Daniel Taylor

---

<sup>i</sup> Quoted in *Memoirs*, by Mikhail Gorbachev, excerpted in *Chernobyl and other Nuclear Accidents* at page 22, by Judith Condon, Wayland Publishers, East Sussex, U.K., 1998.

<sup>ii</sup> *ibid*