Thorium Power, Ltd. – News Update
June 22, 2007

Letter from Seth Grae, CEO

Dear Stockholders:

We are pleased to share this latest news update, which includes company news as well as industry-related developments.

Media Coverage:
We were encouraged by the recent coverage in *Canadian Business Magazine*, Canada's largest and longest publishing business weekly and the influential *Times of London*. We were also pleased to see the latest reports in *Moneyweek*, a leading British financial news outlet, and *Cosmos*, which is published in Australia and is one of the most prominent scientific journals in the world. In an article titled "Mighty Thorium," *Canadian Business* noted that the "original worries about uranium-fuelled reactors are still us" but thorium provides a superior alternative as it is "commonly found all over the world – and is considered safer than uranium." Meanwhile, *The Times of London* and *MoneyWeek* concluded that "nuclear power looks like it's winning the [energy] battle" and "thorium can be used to produce nuclear power in much the same way as uranium with the happy difference that its waste is much less radio-active, making it both easier and safer to dispose of." The articles also specifically mentioned Thorium Power. Finally, *Cosmos* surveyed the emerging crop of Norwegian companies and highlighted Thorium Power's industry-leading position by reiterating that "thorium has seen only limited application, such as by U.S. company, Thorium Power, which produces mixed uranium-thorium fuel." Ultimately, the publication endorsed the thorium fuel alternative and noted that "safer, cleaner nuclear power is a step closer to reality."

CASEnergy Coalition / Nuclear Power Industry Developments in Europe:
Thorium Power has joined the CASEnergy Coalition, an industry organization committed to broadening the nuclear power debate. The organization is co-chaired by Christine Todd Whitman, the former Governor of New Jersey and Administrator of the EPA, and Dr. Patrick Moore, the Co-Founder and former leader of Greenpeace. Thorium Power is working with CASEnergy to add to the discussion about the advantages of non-proliferative, low waste thorium nuclear fuels into the national debate on nuclear energy. The global debate continues to evolve and we are also encouraged by recent developments in Europe: Most recently, the British government maintained its steadfast support for nuclear energy through the publication of the Energy White Paper and the G8 members reiterated that they are committed to the paramount importance of safety, security and non-proliferation in using nuclear power. Yvo de Boer, executive secretary of the United Nations Framework Convention on Climate Change (UNFCCC), echoed the environmental consensus by noting that there is "no credible scenario without nuclear." De Boer helped to launch the World Energy Council's "Energy and Climate Change" report, which concluded that "nuclear power is the most technically confident large scale approach to low-carbon power production up to 2050, and a key contributor to the world's clean energy portfolio."

These developments support our unique positioning as a source of solutions to address the major industry concerns– how to solve proliferation, reduce waste and improve profitability.

Very Truly Yours,

Seth Grae
Chief Executive Officer

Thorium Power News

Canadian Business – Mighty Thorium (06.18.07) – Jeff Sanford chronicles the rapid emergence of nuclear renaissance, noting that "concerns about global warming and the sustainability of a fossil-fuel economy have restored the luster" to nuclear power. He goes further to note that "precious uranium supplies are dwindling" – even as prices increase – and concludes that thorium is a superior yet practical, fuel-based alternative that is "commonly found all over the world [and is] considered safer than uranium."

Sunday Times (UK) – Finding the silver lining (06.10.07) – Writing in *The Sunday Times*, Merryn Somersett Webb of *MoneyWeek* once again recommended Thorium Power and thorium, noting that "this relatively unknown heavy metal can be used to produce nuclear power in much the same way as uranium with the happy difference that its waste is much less radioactive, making it both easier and safer to dispose of. It is also much more plentiful than uranium and has a half-life of only 500 years rather than tens of thousands." *Please note*: The article was also published in *MoneyWeek*, a leading financial news magazine published in the UK.

adnkronosinternational.com – India-US: Right to Reprocess Nuclear Fuel Still Point of Discord (06.05.07) – The online journal reviews the situation of the Indo-US civil nuclear deal and the issue of fuel reprocessing in India. It goes on to cite President Kalam's insistence on "putting his weight behind thorium-fuelled reactors." The article concludes by noting that Thorium Power and Red Star of Russia will jointly conduct research on the application of thorium for use in commercial reactors.

Cosmos Online – Green nuclear power coming to Norway (05.24.07) – The Australian publication notes that the country must push forward with thorium-based technologies and reports on developments in Scandinavia. While the article cites the emergence of Swedish companies such as Statkraft, Bergen Energi and Thor Energi, it notes that Thorium Power is the only company to have applied thorium-fuel for use in conventional nuclear reactors.

Nuclear News

World Nuclear News – Climate chief: "No credible scenario without nuclear" The publication quotes Yvo de Boer, executive secretary of the United Nations Framework Convention on Climate Change (UNFCCC), as saying that he has never seen a credible scenario for reducing emissions that did not include nuclear energy. He was speaking at the launch of the World Energy Council's (WEC's) *Energy and Climate Change* study, where Kurt Yeager, chair of the WEC Study Group and President Emeritus of the Electric Power Research Institute (EPRI) said that there was no way the world would combat climate change without "a strong dose of nuclear power."

World Nuclear News – G8 reach agreement on climate and energy (06.07.07) – WNN reports the recent agreement by the G8 members that "resolute and concerted international action is urgently needed in order to reduce global greenhouse gas emissions and increase energy security." The publication further notes that continued development of nuclear energy would "contribute to global energy security, while simultaneously reducing harmful air pollution and addressing the climate change challenge."

The Times – How to stop the lights going out in a dangerous world (05.23.07) – In introducing the 2007 Energy White Paper, outgoing British Prime Minister Tony Blair notes that the country must consider how nuclear power can help to reinforce the security of its energy supply without increasing reliance on fossil fuels.

Xinhua Online – Official: India working for nuclear renaissance (05.23.07) – The news service reports on comments made last month by Anil Kakodar, the Indian Atomic Energy Commissioner, as he addressed convocation in the city of Ranchi. The article notes Kakodar said "India is working for a nuclear renaissance" as climate changes loom and the need for solutions to reduce carbon dioxide emission become more pressing.

The Independent (UK) – Nuclear has always been the best option (05.22.07) – The paper reports on British Prime Minister Tony Blair's recent Energy White Paper, declaring that it "finally dawned even on the Micawberish Mr Blair that without a very substantial nuclear program there is no way in which [carbon dioxide emissions reductions] can be achieved while simultaneously guaranteeing a constant supply of power and heat at an affordable cost to industrial and domestic consumers."

India-US Civil Nuclear Deal

Hindustan Times – Global warming gets hotter (06.09.07) – Reporting on the recent G8 summit, the paper says that the climate change crisis should encourage Indian officials toward agreement on the Indo-US nuclear deal. The paper also notes that the deal would be an "insurance policy" as imported nuclear fuel will help make up India's plutonium shortfalls and would also enable the country to rejoin the global scientific community.

The Statesman – Move to End Nuke Impasse (06.09.07) – The paper reports that India has offered to set up a dedicated, safeguarded facility for the reprocessing of atomic fuel in an effort toward resolving reprocessing issues in talks over the 123 agreement. The article notes that both sides have maintained that progress has been made at the recent talks, though there was still distance to cover.

Agence-France Presse – Nuclear deal with US possible: Indian FM (06.04.07) – The wire service reports that Indian Foreign Minister Pranab Mukherjee said "it will be possible to arrive at a final agreement" and the "landmark civilian nuclear deal with the United States was possible despite differences over key issues."

Agence France Presse – US "positive" on clinching India nuclear accord (05.30.07) – The wire service reports that the US expressed hope of winding up the civilian nuclear energy deal India as it set out for a resumption of the talks a two weeks ago in New Delhi.

FT.com – US keen for nuclear deal with India (05.16.07) – The paper predicts that the civil nuclear deal between the US and India "will loom" over George W. Bush and Manmohan Singh when they meet on the sidelines of the G8 summit in Germany. The article notes that although both sides reported "progress."

WHAT'S NEXT/NUCLEAR: Mighty Thorium
By Jeff Sanford
Canadian Business
June 18, 2007

It was only three years ago that the nuclear industry seemed to be powering down in the western world. A new plant hadn't been built in North America in 30 years, while over in Europe the German government had adopted a plan to mothball its reactors by 2025.

What a difference a couple of years makes. Last year, Ontario announced it will build North America's first nuclear plants in a generation, while the International [Atomic] Energy Agency is urging Germany to keep its reactors running. Concerns about global warming and the sustainability of a fossil-fuel economy have restored the luster to this relatively carbon-neutral, domestically supplied form of power.

Indeed, industry talk now is about managing a renaissance that has the likes of India, China and Bulgaria building new plants. And the price of uranium has jumped tenfold to more than $130 per pound over the past four years as investors speculate on a build-out of nuclear power that will dwarf the boom of the '70s.

But the original worries about uranium-fuelled reactors – core meltdowns and weapons proliferation – are still with us. Plus, precious uranium supplies are dwindling. If only there was some other fuel we could use – one that was difficult to turn into a weapon, less likely to melt down and more common.

There is. It's called thorium, and it's found in just two places to the left of uranium on the periodic table. More importantly, it's commonly found all over the world – soil, for example, contains six parts per million of thorium on average – and is considered safer than uranium. Best yet, some fuel designs produce 85% less plutonium than standard uranium, meaning it's much harder to make a bomb with it.

"It's like switching from leaded to unleaded gasoline," says Seth Grae, the CEO of Thorium Power, a McLean, VA-based company developing a thorium-based nuclear fuel supply. "The first nuclear build-out in the '70s was in a very different world than the world we're about to see in nuclear power. It's not sustainable to deploy hundreds of new uranium-based nuclear plants into the developing world."

Unfortunately for Canada, Thorium Power's product is designed for light-water reactors, which means heavy water Candu reactors won't be able to switch to the new fuel. But for everyone else "thorium is a logical way to go," says Grae.

Finding the silver lining
By Merryn Somerset Webb
Sunday Times (London)
June 10, 2007

I HAVE been reading two interesting publications this week. The first comes from Capital Economics and is called Global Inflation Watch. This is interesting mainly because of the title -who'd have thought even five years ago, when as far as most commentators were concerned rising prices were a thing of the past, that any research groups would ever bother to devote an entire 40-page report to worrying about the subject.

The second is the New Scientist, which pretty much sums up the reason why the price of almost everything is on the up with its headline: World Stripped Bare.

The basic premise here is that we are using up the world's resources, and its minerals in particular, at a most alarming rate. If the world keeps consuming metals at its current rate we have a mere 45 years of gold left, 46 years of zinc, 29 years of silver and 59 years of uranium.

If the rest of the world catches up with America and starts consuming these minerals with the same enthusiasm, things look worse: there is only 19 years' worth of uranium, less than 10 of silver, 36 of gold and 34 of zinc.

The first thing these figures make me want to do is rush out and buy silver. The price of the metal has risen threefold since I first started writing about it here, having been told in 2001 that Bill Gates and Warren Buffett were pouring money into silver miners. It has already risen another 6% this year, but as these figures make clear the supply-and-demand situation is so tight that it is still worth owning.

Silver has a long history as a monetary metal and as a safe haven in difficult times so, given the inflationary environment around the world, it makes sense to hold it -along with gold -as a way of protecting your capital.

However, there is a lot more to the story than this. Unlike gold, silver is indispensable to a huge number of industrial processes. It has the highest thermal conductivity of all metals. It is very strong but also malleable and it can put up with extreme temperatures with no change in its properties.

It also has disinfectant attributes. Only last year there was talk of making NHS patients wear pyjamas with silver streaks running through them to try and stave off the MRSA super bug. Silver has always been considered to be good for health: rich babies aren't said to have been born with silver spoons in their mouths for nothing.

Add all this to the fact that silver looks very pretty (despite my passion for investing in gold, I really only wear silver) and you've got the perfect metal.

It is used in computer keyboards, in mobile phones, washing machines, batteries, TVs, cameras, photography, medical devices and a large number of the other things you own. Look round you: every gadget you see will have a tiny bit of silver knocking about in it somewhere. Industrial demand for silver is forecast to rise at some 6% this year.

Herein lies the problem -and the opportunity. Like most perfect things, silver is in short supply.

Until recently this hasn't been much of a problem as inventories have been high and government stockpiles have been there for the taking. No more. Most official stockpiles are all but gone -certainly sales from them have fallen off fast and estimates suggest

total stocks of refined silver are about 300m ounces, less than a seventh of what they were only a decade or so ago.

It is possible to recycle some silver, but most is lost for ever after use. To me this says that the silver price is going to keep rising for a while yet and that buying into it, probably via the iShares Silver exchange traded fund, is a good idea. Silver currently trades at about $14 per ounce. The real bulls think it will hit $20 by the end of the year.

However, there are other metals that are in even scarcer supply. There is uranium, for starters. I am slowly coming round to the idea that at some point in the future wind and wave power may be of some use to us, but in the shorter term nuclear power looks like it is winning the battle. Bad news then that there may be only 19 years of uranium left.

Earlier this year I mentioned thorium. This relatively unknown heavy metal can be used to produce nuclear power in much the same way as uranium with the happy difference that its waste is much less radioactive, making it both easier and safer to dispose of. It is also much more plentiful than uranium and has a half-life of only 500 years rather than tens of thousands.

In Norway, Bergen Energy has already applied to build a thorium based power plant. In February, I suggested buying shares in US-listed company Thorium Power, which is testing thorium in Russia and hopes to be using it commercially in the next three to four years. Those willing to take even more of a gamble might also look to the tiny UK-listed All Star Minerals, which has registered to explore for thorium in Sweden.

Finally note that a great number of other metals you have never really heard of are also in increasingly short supply. We've got practically no rhodium, which is vital for diesel catalytic converters, very little indium, used in flat-screen TVs, and only about 10 years of tantalum which you can find in all mobile phones.

Supply is also tight for ruthenium used in computers, and molybdenum, a component in high-strength erosion-resistant steel.

You can get exposure to these metals through most of the big miners. Xstrata, which I hold, has a good position in the minor metals markets.

* Merryn Somerset Webb is a former stockbroker and now editor of Money Week. Her views are personal and investors should always seek professional advice.

India-U.S.: Right To Reprocess Nuclear Fuel Still Point Of Discord
adnkronosinternational.com
June 5, 2007

New Delhi, 5 June (AKI/Asian Age) - The not so subtle attempts by the United States to cap India's nuclear capabilities, by denying reprocessing rights and insisting that New Delhi yield on harnessing of the thorium - a relatively cheap source of nuclear energy - for its three-stage programme to generate electricity, remains a sticking point despite the latest round of talks between India's foreign secretary Shivshankar Menon and US undersecretary of state for political affairs Nicholas Burns.

The US has sought to justify its reluctance to give India the right to reprocess spent nuclear fuel on the grounds that the Indo-US civilian nuclear cooperation agreement could be a "template" for dealing with other countries, but the Indian nuclear establishment led by Atomic Energy Commission chairman Anil Kakodkar has maintained that reprocessing was non-negotiable, as it held the key to India's energy independence.

Some retired nuclear scientists have pointed out that thorium research was being carried out in the West and there should therefore be no let-up. Even Indian president A.P.J. Abdul Kalam has cited the abundant reserves of thorium in the country to put his weight behind thorium-fuelled reactors. The construction of the indigenously-developed Advanced Heavy Water Reactor (AHWR) was expected to begin this year.

Washington had made its intentions known last year. Dr Ashley Tellis, a strategic affairs expert who had spent a stint in New Delhi as a senior aide to former US ambassador Robert Blackwill and is now a senior adviser to Burns, had said that by signing up for the nuclear deal it was certain that New Delhi had determined that its plutonium-based deterrent "suffices". This newspaper had reported Tellis' speech in New Delhi on July 18 last year, in which he said that the nuclear deal offered an "alternative" to India's three-stage nuclear programme.

Tellis made it explicit that Washington could be expected to act on a "straightforward, cold-blooded calculation of [US] national security interests." He had then gone on to suggest that the "absence of uranium scarcity undermines the viability of the three-stage programme" and, therefore, "if uranium is available (through this deal) to India for all time to come, should India pursue the three-stage (nuclear) programme?"

"(The nuclear deal) could undermine [India's] three-stage programme but it does not do so necessarily," Tellis said during the question-and-answer session that followed his presentation. He was responding to questions raised by Prof. Bharat Karnad of the Centre for Policy Research and others who felt that the nuclear deal placed constraints on India's strategic programme.

Reprocessing is needed to separate Plutonium 239, a byproduct from the first stage, and use it with thorium to fuel fast breeder reactors (FBRs), which is the second stage. The FBRs breed more fuel than they consume. In the third stage, the Uranium 233 (extracted via reprocessing) will fuel FBRs to generate electricity. The three-stage programme overcomes the scarcity of uranium by relying on the abundant reserves of thorium.

According to the US-based outfit Strategic Forecasting (commonly known as Stratfor),

India owns more than 30 percent of the world's thorium reserves, compared to just 0.7 per cent of uranium reserves. It has said that using thorium made good economic sense but Uranium 233 also could be used to make nuclear weapons, and that was not something US President George W. Bush would be able to sell to the US Congress.

Reports in the Western media suggest that Thorium Power of the US and Red Star of Russia would jointly conduct research on the harnessing of thorium for use in commercial reactors. Australian Prime Minister John Howard has said that his government would support the efforts to develop a new generation of thorium-fuelled reactors. A Sydney-based firm is collaborating with British investors in this regard.

Green nuclear power coming to Norway
By Liz Williams
Cosmos Online
May 24, 2007

SYDNEY: Safer, cleaner nuclear power is a step closer to reality after Norway's state-owned energy company, Statkraft, this week announced plans to investigate building a thorium-fuelled nuclear reactor.

Statkraft (which translates to "state power") announced an alliance with regional power providers Vattenfall in Sweden, and Fortum in Finland, along with Norwegian energy investment company, Scatec AS, in a bid to produce the thorium-fuelled plant.

Thorium (Th-232), has been hailed as a 'greener' alternative to traditional nuclear fuels, such as uranium and plutonium, because thorium is incapable of producing the runaway chain reaction which in a uranium-fuelled reactor can cause a catastrophic meltdown. Thorium reactors also produce only a tiny fraction of the hazardous waste created by uranium-fuelled reactors (see 'New age nuclear', *Cosmos*, issue 8).

Statkraft, which is already Europe's second largest producer of renewable energy - mainly thanks to Norway's abundant hydroelectric resources - has recently made thorium-fuelled nuclear power a point of serious consideration. "It would be a sin of omission not to consider it," said Bård Mikkelsen, CEO of Statkraft, in an interview with the Norwegian newspaper *Dagbladet*.

To date, thorium has seen only limited application, such as by U.S. company, Thorium Power, which produces mixed uranium-thorium fuel for use in conventional nuclear reactors. However a reactor fuelled entirely by thorium would have significant advantages over conventional uranium or mixed-fuel reactors.

Besides their inability to go critical and their low generation of waste, thorium-fuelled reactors don't suffer from the same proliferation risks as uranium reactors. This is because the thorium by-products cannot be re-processed into weapons-grade material.

Thorium also doesn't require enrichment before use as a nuclear fuel, and thorium is an abundant natural resource, with vast deposits in Australia, the United States, India and Norway.

Another advantage of thorium-powered reactors is they can be used to 'burn' highly radioactive waste by-products from conventional uranium-fuelled power plants.

Over the past eight months, there has been a substantial rise in public support for thorium reactors in Norway. In June 2006, polls showed 80 per cent of the population were completely opposed to any form of nuclear technology. Then in February 2007, the same percentage were in favour of investigating thorium reactors as a potential energy source.

"It is an absolutely incredible surprise that it has been possible to turn around the population in a country, just by quietly campaigning and explaining the benefits of the technology," said Egil Lillestøl, a nuclear physicist at the University of Bergen, Norway.

Lillestøl is a keen supporter of the ADS (Accelerated Driven System) technology used in thorium-fuelled reactors. Because thorium is incapable of achieving a self-sustaining chain reaction – unlike uranium or plutonium – it needs energy to be injected into the reactor to keep it running. This energy comes in the form of neutrons from a particle

accelerator. For this reason, a thorium-fuelled reactor is also sometimes called a sub-critical reactor.

Statkraft is the third Norwegian company to express interest in thorium reactors this year; Thor Energi and Bergen Energi, have both applied for government licenses to build plants.

The announcement by Statkraft coincides with the first meeting of the Thorium Report Committee – an initiative commissioned by Norway's Ministry of Petroleum and Energy, in association with the Norwegian Research Council, to investigate the benefits and risks of thorium reactors.

The committee will submit its report at the end of 2007. Norwegian legislation currently bans the use of nuclear power, so the report is critical for gaining Government consent to build thorium plants in Norway.

"Norway has taken the lead on this. We are an energy nation; we have large supplies of thorium – not as much as Australia of course – but we have a very advanced energy industry, and we have a responsibility to the world," said Lillestøl. "Without nuclear energy we will destroy the world, we will spend all the coal, oil and gas, and we will be left with an energy desert."

Reza Hashemi-Nezad, a nuclear scientist at the University of Sydney in Australia agrees that thorium is a promising alternative energy source. However, while the European Union, India, the US, Japan and Russia are all working on thorium technologies, Australia is lagging behind.
"Australian industry is very interested in investing in this type of clean, safe and cheap nuclear energy," says Hashemi-Nezhad. "But I am afraid that if Australian scientists and industry do not get adequate support from the government and research institutes in Australia, they may move offshore."

Climate chief: "No credible scenario without nuclear"
World Nuclear News
June 21, 2007

Yvo de Boer, executive secretary of the United Nations Framework Convention on Climate Change (UNFCCC), said on 21 June that he had never seen a credible scenario for reducing emissions that did not include nuclear energy. He was speaking at the launch of the World Energy Council's (WEC's) *Energy and Climate Change* study.

The recent German G8 meeting had "significantly pushed forward" the climate change debate, according to de Boer, and had emphasised the need to reach a new agreement under the UNFCCC by 2009.

Gerald Doucet, general secretary of WEC, said that the "keep all options open" debate had moved on from 'renewables versus fossil' or 'renewables versus nuclear'. The WEC study concludes that all clean energy options will need to be used. In Doucet's view, the main 'nuclear renaissance' would begin to have a significant impact on global greenhouse gas emissions around 2030. In the meantime, the nuclear industry should look to lifetime extensions to help maintain the nuclear contribution to electricity provision.

Kurt Yeager, chair of the WEC Study Group and President Emeritus of the Electric Power Research Institute (EPRI) said that there was no way the world would combat climate change without "a strong dose of nuclear power." He said that the technologies were available to address issues concerning waste management and proliferation and governments must get on with the job of developing nuclear power so that future generations can make use it.

The WEC *Energy and Climate Change* report concluded that "all governments should give serious consideration to the potential of nuclear power for reducing greenhouse gas emissions." The study showed that countries that have high proportions of nuclear in their energy systems had greenhouse gas emissions significantly lower than that of comparable nations with less or no nuclear contribution.

The report assessed the contribution of eight technologies for addressing climate change: nuclear energy; renewables; distributed power; energy efficiency; clean coal; combined heat and power; smart electricity control; and carbon capture and storage.

The report concluded that nuclear power is the most technically confident large scale approach to low-carbon power production up to 2050, and a key contributor to the world's clean energy portfolio. As an emissions-free energy source capable of producing electricity on a large scale, the report considered nuclear energy one of the primary global alternatives available to achieve carbon dioxide emissions stabilisation.

The report stressed it was essential to maintain the excellent safety record of nuclear power over the past 20 years and "to launch concerted efforts to win over global public opinion concerning the strategic importance of nuclear power in achieving a confident sustainable energy future."

G8 reach agreement on climate and energy
World Nuclear News
June 7, 2007

Leaders of the Group of Eight (G8) industrialised nations reached agreement on text relating to climate change, energy efficiency and energy security at their 6-8 June summit in Heiligendamm, Germany.

Leaders agreed that "resolute and concerted international action is urgently needed in order to reduce global greenhouse gas emissions and increase energy security." They also agreed that strong economies are needed to "slow, stabilize and then significantly cut global emissions of greenhouse gases," although did not commit to it. Furthermore, the leaders did not commit to any specific targets on greenhouse gas emissions reductions, merely repeating the UNFCCC target of stabilizing greenhouse gas concentrations at a level that would prevent dangerous interference with the climate system.

Amongst a broad range of measures given as examples of how to reduce greenhouse gas emissions was text recalling previous G8 agreements that noted that some of the group believed that the continued development of nuclear energy would "contribute to global energy security, while simultaneously reducing harmful air pollution and addressing the climate change challenge."

The G8 members also said that they were committed to the paramount importance of safety, security and non-proliferation in using nuclear power. The G8 Nuclear Safety and Security Group (NSSG) will continue in its work to consider nuclear safety and security issues.

The G8's membership is: Canada, France, Germany, Italy, Japan, Russia, the UK and the USA. All countries developed nuclear energy sectors, but Italy chose to shut its nuclear power plants quickly after a 1987 referendum while in 2001 Germany began a more gradual phase out that would see all plants close by 2015.

How to stop the lights going out in a dangerous world
By Tony Blair
The Times
May 23, 2007

Flicking a switch and the lights coming on is something that we take for granted. Yet we should not be lulled into a false sense of security. The assumptions we make about where our energy comes from, and how we use it, simply will not hold true in the future unless we plan for it.

We are already seeing how the way we produce and use energy is affecting the environment, with carbon emissions from the burning of fossil fuels raising temperatures around the globe. Carbon dioxide levels in the atmosphere are 35 per cent higher than before the Industrial Revolution and growing by the year. The Stern report showed that without concerted global action the impact of climate change will be equivalent to a loss in world GDP of at least 5 per cent each year, and potentially as much as 20 per cent.

We also face a serious challenge in securing our energy supplies. Britain goes from being 80 per cent self-sufficient to having to import almost all our gas and more than half of our oil by 2020. Increasingly we will be required to look at importing energy from less stable parts of the world, and will be much more exposed to the international energy markets at precisely the same time that emerging economies, such as China and India, are increasing their energy consumption.

As if that were not enough, we are now faced with countries such as Russia, who are prepared to use their energy resources as an instrument of policy. Over ten years I have watched energy policy go from being a relatively quiet backwater to something taking on a strategic importance that could be as crucial to our country's future as defence.

We need a policy that conforms to the rising concern about climate change and gives Britain the secure, safe and politically acceptable supplies of energy that our livelihood demands. Energy policy is creating new strategic alliances, and new tensions, in international relations. On top of all of this, we face these challenges at a time when the UK needs to replace a third of our ageing electricity generation capacity in the next 20 years.

Of course, as ever, there is an opportunity. This is not a question of energy security versus climate change – the measures we take can help us achieve both. We have already taken action to diversify our supply. In October I launched the 1,200km Langeled pipeline, which will deliver up to 70 million cubic meters of natural gas a day to the UK – so that we satisfy a fifth of our future gas demand from Norway.

We are supporting the development of new liquefied natural gas ports so we can import gas for the first time from Qatar and elsewhere. We are investing in renewables, and ensuring robust emissions-trading mechanisms in Europe. We are also making strides to reduce energy demand, decoupling resource consumption from economic growth, and have set ourselves a challenging target to reduce carbon dioxide emissions by 60 per cent below 1990 levels by 2050.

Today's energy White Paper sets out proposals for ramping up our efforts to save energy, to develop cleaner energy supplies and to ensure that timely new energy investments can be made.

Our choice is not between growth or non-growth – it is between high carbon growth and low carbon growth. New technology is critical to this. Electricity, heat and transport account for most greenhouse gas emissions, but it is possible to achieve the same level of light, heat and mobility while cutting or even eliminating carbon emissions. We will therefore continue to work domestically and internationally to promote policies that accelerate the transition to a low carbon economy. For example, we will use regulation and standards where appropriate to phase out the least efficient products, as we will with inefficient light bulbs by 2011.

We must also secure cleaner energy supplies. Renewable electricity from wind, wave and solar power could supply up to a fifth of our electricity by 2020. We will encourage the design of energy-efficient homes. We will set out how we will use more biofuels and hybrid cars, and encourage people to use them. We will support the development of coal and gas-fired power stations fitted with technology that cuts emissions by up to 90 per cent.

We also need to consider what role nuclear power can play as a low-carbon source of electricity. Nuclear power accounts for about a fifth of our electricity, yet most of our nuclear power stations are due to close over the next 15 years or so. It is right that we consider how nuclear power can help to underpin the security of our energy supply without increasing our reliance on fossil fuels.

We can meet our carbon dioxide emissions targets, but only if we are willing to think ahead and take tough decisions over new wind farms – and give serious consideration to nuclear power.

Finally, to ensure the security of our energy supply, we need significant private sector investment in infrastructure to deliver the energy we need. We have brought forward legislation to streamline the planning process, and will publish better analysis on energy trends to help energy suppliers with investment decisions. We will continue to drive the development of transparent international energy markets, and tackle barriers to investment in the UK to enable the market to move in the right direction to meet long-term challenges.

This shift to a low-carbon economy will bring huge opportunities. Markets for low-carbon technologies will be worth at least $500 billion, and perhaps much more, by 2050 if the world acts on the scale needed. Tackling climate change and planning for our long-term energy security is the pro-growth strategy; ignoring it will ultimately undermine economic growth.

Our energy White Paper is practical but radical. It is a set of strategic measures designed for the long term. The decisions need to be taken now. The benefits will be felt in the decades to come. But taking them now is the only way to be serious about climate change while protecting our vital energy supply.

Official: India working for nuclear renaissance
Xinhua Online
May 23, 2007

NEW DELHI, May 23 (Xinhua) -- Nuclear energy has the potential to meet India's energy needs and keep carbon dioxide emissions at the lowest possible level, Indo-Asian News Service (IANS) reported Wednesday, quoting a senior official as saying.

Addressing a convocation in central Indian city of Ranchi, chairman of the Indian Atomic Energy Commission Anil Kakodar said Wednesday, "India is working for nuclear renaissance. We have succeeded in translating nuclear program through Pressurised Heavy Water Reactor (PHWR) which is on par or better than global benchmarks."

Kakodar expressed concern over the changing climate due to emission of carbon dioxide. "Nuclear energy will be inevitable when global search for ways to reduce carbon dioxide emission takes place," IANS quoted him as saying.

He said India's modest resources and best energy potential of Thorium deposits had necessitated the adoption of three-stage nuclear power program.

First stage is on commercial domain, that is PHWR. India will similarly translate research and development to commercial scale exploitation for the second and third stages as well.

IANS further quoted him as saying: "As a matter of fact, a beginning of commercial activity with the second stage has already been made as the construction of the 500 megawatt energy prototype fast breeder reactor is already in progress. The fast breeder reactor does not need further mining of uranium and enables recycle of uranium that has already been used in PHWR."

Nuclear has always been the best option
By Dominic Lawson
The Independent (London)
May 22, 2007

Tony Blair once boasted that he has "no reverse gear". That's because he achieves the same direction of travel by performing spectacular U-turns. Tomorrow he will accomplish perhaps the most skilful of them all, with the publication of an Energy White Paper which endorses the building of a new generation of nuclear power stations.

Remarkably, it is only four years since the previous Energy White Paper, which described the idea of replacing our existing nuclear power stations as "unattractive". In his speech launching the 2003 White Paper, Mr Blair did not make a single reference to nuclear power.

His recent volte-face has nothing to do with climate change, whatever might be claimed. In 2003 the Government was already committed to reducing carbon emissions by 60 per cent. All that has happened is that it finally dawned even on the Micawberish Mr Blair that without a very substantial nuclear programme there is no way in which such reductions can be achieved while simultaneously guaranteeing a constant supply of power and heat at an affordable cost to industrial and domestic consumers.

The Conservative Party, meanwhile, has regressed to the position New Labour held a few years ago: that it would be so much nicer if we could manage to do without nuclear altogether and instead see if we might become an industrial society powered entirely by windmills. In an interview with Green Futures, David Cameron declared that: "I want to give every opportunity for green sources of energy to come through. If they do, well and good. If they don't, and we have to keep the lights on, then nuclear might well come into the picture."

Six months ago in the House of Commons Mr Blair skillfully mocked Mr Cameron for holding the opinion he had himself taken: "What is the right honourable gentleman going to do? He is the Prime Minister and the Cabinet Secretary comes in and says, 'I'm afraid the renewables haven't generated as much as we want. I'm afraid we won't be able to keep the lights on'. So what is the right honourable gentleman going to say - 'Rustle me up a new power station'?"

I suppose Mr Cameron might have replied that we could buy a lot of second-hand power from France's 50-odd nuclear power stations - but Tony Blair was right to suggest that, when it comes to security of energy supply, no responsible Prime Minister can afford to busk it. In fact, energy security has become an increasingly compelling argument for a revived domestic nuclear programme.

You might well be uneasy about the favouritism which successive British governments have shown Saudi Arabia - most recently by pressurising the Serious Fraud Office to drop its investigations into the bribes allegedly paid by BAe to various Saudi princes. The costs of being nice to the oil-rich descendents of Abdul-Aziz al-Saud, however, are a mere bagatelle compared to the possible drawbacks of becoming over-reliant on Russian gas supplies.

Perhaps we should be grateful to Vladimir Putin for arbitrarily cutting off gas to German industrial customers who have the misfortune to share a supply line with neighbours, such as Ukraine, whom the Russian President wishes to intimidate: at least he has given a salutary warning to whose who think that there will be no political consequences in replacing our North Sea supplies with Russian gas.

The opponents of civil nuclear power can - and do - insist that no arguments about security of supply outweigh the safety and environmental risks inherent in energy derived from nuclear fission. It amazes me that they continue to get away with such arguments when it has long been obvious that on every measurement, whether of injuries and disease among the public or among the workforce involved, nuclear is dramatically safer than any other established means of mass energy production.

This fact is best illustrated by the consequences of such nuclear disasters that have occurred. The accident at Three Mile Island was chiefly responsible for the abandonment of the American civil nuclear programme - yet the plant's carapace withstood a partial meltdown and there were no casualties either immediately or as a result of any leakage of radiation.

In 1956, the UK endured its worst nuclear catastrophe when a fire at the military reactor at Windscale in Cumbria created a cloud of radioactive debris that contaminated most of the country. Yet, as James Lovelock observes: "So far as I am aware, no one has reported any deaths or morbidity that could have come from the exposure of many millions of people to the release of 740 trillion bequerels of radioactive nuclides. The NHS was a good record keeper and any significant rise in the incidence of cancers would have been noticed. It was a real danger only to those at the scene itself."

As with Windscale, so with Chernobyl - the accident which more than any other sent the nuclear industry into a kind of political purdah. The radiobiologists of the World Health Organisation examined the areas polluted by Chernobyl 19 years after the explosion which blew the lid off the reactor and were able to find evidence of only 75 people who had died as a result - and these were all men who had been directly involved in the accident and the clean-up.

The same scientists estimate that the wider exposure to radiation of the peoples of northern Europe as a result of Chernobyl can be expected to cause their life expectancy to decline - by between one and three hours.

The nuclear industry has been in part to blame for the unjustified public terror of radiation leaks: in all the three cases above, the authorities tried very hard to cover-up the very fact that there had been an accident - a sure way to increase popular suspicion. Yet the dissembling of the nuclear industry is as nothing to that of its opponents. As Mr Lovelock wrote in The Revenge of Gaia: "If a lie is defined as a statement that purposefully intends to deceive, the persistent repetition of the 'huge Chernobyl death toll' is a powerful lie."

The true facts about nuclear power are not secrets solely in the possession of scientists - yet one might easily think so, based on the irresponsible silence of all but a handful of our politicians. As a result of his performance over the alleged Weapons of Mass Destruction, Mr Blair, despite his nuclear conversion, is the last man to persuade the public. In any case, it is Gordon Brown, as incoming Prime Minister, who will have that job; I hope that he has the courage to do it properly. Knowing him, the fact that Mr Cameron is on the other side of the argument will make it as much a pleasure as a duty.

Global warming gets hotter
By Minoj Joshi
Hindustan Times
June 9, 2007

When the Group of Eight summit began in Heilingdamm, Germany, everyone agreed that the big issue there would be climate change. With President George W Bush, the world's most famous skeptic also making noises about climate change, nearly everyone agreed that climate change is a man-made phenomenon and we need to do something about it.

But there is no unanimity on what to do. Some want to banish automobiles, others want cutbacks in lifestyles, Germany and Japan want deeper mandatory cuts in greenhouse-gas emissions. Bush's modest proposal is to send the issue to a committee where developed polluters like the US will sit with the developing polluters like India and China to work out ways of dealing with global warming.

The Thursday G8 declaration was neither here nor there. It spoke of "substantial" cuts in emissions, but it did not set any targets, leave alone mandate action. The G8's shift in favour of nuclear energy, too, is tentative. The declaration notes that "some of the group" believed that "nuclear energy would contribute to global energy security, while simultaneously reducing harmful air pollution and addressing the climate change challenge."

The alarming evidence of global warming is changing attitudes towards nuclear energy across the West. Beginning with James Lovelock in 2003, several scientists and environmental activists have begun to endorse nuclear power as a way of dealing with global warming. In June 2005, a month before he took the dramatic step to reopen nuclear trade with India, Bush became the first president in 26 years to visit a nuclear power plant, at Calvert Cliffs near Washington, DC, where he endorsed nuclear as an "environmentally friendly" energy source.

As for India, since the 1970s, embargoes have crippled our nuclear power programme, to the point where privately funded wind energy capacity (6191 MW) exceeds our heavily government funded nuclear energy (4120MW). The Indo-US nuclear deal is seen as the key that will open the locks that have been put on us by the advanced countries.
The July 18, 2005 Indo-US joint statement notes that the discussions recognised "the significance of civilian nuclear energy for meeting growing global energy demands in a cleaner and more efficient manner."

Indian per capita incomes today are 45 per cent of that of China and 25 per cent of Brazil. By 2030, we could touch present-day Brazil's level, but just think: Brazil's per capita consumption of electricity today is 1,950 units, while it is still 440 in India (and 1,380 in China). India will need to generate 3,880 billion kilowatt hours of electricity in 2030 to sustain an 8 per cent growth rate. To achieve this, we would need to max our hydro use — tap all our rivers, generate 63,000 MW of nuclear power and 14,000 from wind farms. Even then, 78 per cent of our electricity would have to come from carbon dioxide-spewing coal.

But can we even reach that nuclear target, and play any role in checking global warming? The 2030 target poses huge investment and managerial challenges, its nuclear part still needs to overcome important technological and political hurdles. India

works along an indigenous programme based on eventually exploiting our vast thorium resources. But we are only at the beginning of stage II of a technologically complex process which crucially hinges on the amount of plutonium our fast breeder reactors will make, because the country is short of natural uranium. With our current breeder technology we're not sure yet whether we can produce the amount of plutonium needed to kick off the third stage of the programme based on advanced thorium-based reactors.

The Indo-US nuclear deal is an insurance policy since the imported nuclear fuel will help make up plutonium shortfalls. Most importantly, it will enable us to rejoin the global scientific community from which we have been barred. However, we need to overcome resistance, both in this country and abroad. Non-proliferation lobbies in the US are trying to block the agreement, and back home in India, some of our scientists are convinced that our three-stage nuclear plan, envisaged half-a-century ago, is the only way to go, and that to open doors would undermine our autonomy.

But the world is moving in many new directions, in nuclear policy, as well as technology. The High Temperature Reactor Technology has already been proved in Germany, and is now being taken up in China and South Africa. Importantly, this is also based on using thorium and further, it is safer than contemporary reactors. Thirteen advanced countries have set up a "Gen IV forum" to develop the fourth generation nuclear energy systems. Indian scientists and engineers can benefit from such international collaborations, as well as contribute to them.

By 2030, India will reach the current levels of US carbon emissions, with all its negative implications for global warming. But right now as most Indians know, the problem seems to be having power at all. In just one year — 2006 — China added 60,000 MW of electricity generating capacity. In five years of the 10th five year plan, we missed all targets and managed 40,000. Looked at any way, the choice seems to be not so much between nuclear, wind or thermal energy, but energy from whatever source it comes from. As for global warming...should we care?

Move to End Nuke Impasse
The Statesman (India)
June 9, 2007

Press Trust of India BERLIN, June 8: Making a fresh proposal, India has offered to set up a dedicated safeguarded facility for reprocessing of atomic fuel in an effort to break the logjam over a proposed agreement to operationalise civil nuclear deal with the USA. As Prime Minister Dr Manmohan Singh met US President Mr George W Bush near here today, officials of the two countries discussed in detail the proposal under which India will negotiate a higher level of safeguards with the IAEA. National Security Adviser Mr MK Narayanan and his US counterpart Mr Stephen Hadley held thorough deliberations on the proposal for establishing a dedicated national facility for reprocessing of spent nuclear fuel, sources said.

The proposal was made to find a way out of the problems in talks over the 123 agreement due to differing positions over the reprocessing issue. As officials discussed the proposal, Dr Singh had a brief meeting with Mr Bush in Germany's sea-side resort of Heiligendamm on the sidelines of the G 8 Summit. Though details of the pull-aside meeting were not known, the two leaders were expected to touch upon the civil nuclear deal issue. Negotiators of the two sides, who have failed to end the impasse, are looking for a political push at the highest level and the meeting between Dr Singh and Mr Bush was expected to give a signal in this regard. The conversation was positive, the Prime Ministers media adviser Mr Sanjaya Baru said after the meeting between Dr Singh and Mr Bush. Key negotiators of the two countries ~ foreign secretary Mr Shivshankar Menon and US under-secretary of state for political affairs Mr Nicholas Burns ~ met in New Delhi last week but failed to conclude negotiations as differences persisted. The two countries are aiming at sorting out differences particularly on issues like reprocessing right, perpetuity of fuel supplies and continuance of the civil nuclear cooperation if India were to conduct an atomic test. India has been insisting on having the right to reprocess spent nuclear fuel and is not ready to accept any legally binding clause in the agreement that could cap its strategic nuclear programme. Under the US law, Washington will have the right to seek return of material and equipment in the event of India carrying out nuclear tests. The US contention that Presidential waiver could be a way out of the binding under the American law does not find much favour on the Indian side which argues that future Presidents could overturn the waiver. Both sides have maintained that while some progress has been made at the recent talks, there was still distance to cover.

Kakodkar said India will not accept the civil nuclear deal with the USA if it adversely affects New Delhi's nuclear programme and both sides are now engaged in narrowing their differences over the pact, the country's top atomic scientist said today. The basic question is that India's interests must be safeguarded. Keeping this in mind we are discussing the 123 agreement with Washington, Atomic Energy Commission chairman Mr Anil Kakodkar told reporters on the sidelines of a function in Hyderabad. The main hitch in implementing the deal is that there are gaps between the US and India's positions and we are discussing how to bridge the gaps, he said. Mr Kakodkar's comment came on a day when the Prime Minister is meeting President Bush on the sidelines of G 8 summit in Germany to discuss the deal and push for conclusion of the 123 agreement that will operationalise the landmark pact.

Nuclear deal with US possible: Indian FM
Agence-France Presse
June 4, 2007

India said a landmark civilian nuclear deal with the United States was possible despite differences over key issues which days of talks have so far failed to resolve.

"No, there are no roadblocks as such. Certain issues need to be resolved for which sincere efforts are going on," Foreign Minister Pranab Mukherjee told reporters, the Press Trust of India news agency said.

"It will be possible to arrive at a final agreement," the minister said of the pact aimed at giving New Delhi access to previously forbidden nuclear technology.

Mukherjee's comments came a day after Indian foreign secretary Shivshankar Menon told reporters that both sides were "some distance away" from agreement on the fine print of the energy accord despite three days of talks with Washington's pointman Nicholas Burns.

The deal is intended to reverse three decades of US sanctions on nuclear trade with India, even though New Delhi has not signed the nuclear Non-Proliferation Treaty and tested nuclear weapons in 1998.

Under the deal India is to separate nuclear facilities for civilian and military use and set up a regime of international inspections in return for technology and nuclear fuel supplies.

On Saturday, Menon said both sides were closer to an agreement though there was no alignment of views on New Delhi's demands of no curbs on the reprocessing of spent nuclear fuel.

India also wants assurances that Washington will continue to supply fuel for its nuclear plants in the event of New Delhi conducting further nuclear weapons tests.

A US embassy statement late Saturday said "more work remains to be done to complete arrangements that will permit a civil nuclear agreement to be finalised between the US and India."

US "positive" on clinching India nuclear accord
Agence France Presse -- English
May 30, 2007

The United States on Wednesday expressed hope of winding up a thorny civilian nuclear energy deal which will permit India to access long-denied Western nuclear technology.

The statement came on the eve of the resumption of talks in New Delhi between a top US negotiator and Indian officials over the pact in which India will separate its nuclear facilities into civilian and military uses in return for technology and nuclear fuel supplies.

US ambassador David Mulford, however, warned tricky issues needed to be discussed during the talks between US Undersecretary of State Nicholas Burns and Indian officials.

"There is considerable work to be done on what is a very technical and detailed agreement," Mulford said in a statement.

"We want to finish as soon as we can and both sides are positive we can do this," the diplomat said of the deal which was agreed on during a visit by President George W. Bush to India last year.

India, however, sounded non-committal on the upcoming talks, which come a week after experts from the two countries met in London to iron out unspecified "technical issues."

"The visit will also be the occasion for further discussions on the proposed bilateral civil nuclear cooperation agreement," the Indian foreign ministry said without elaborating.

The Press Trust of India said the two-day talks beginning Thursday were likely to focus on testing and reprocessing.

"The key negotiators will aim at resolving differences on aspects like reprocessing rights and continuity of civil nuclear cooperation if India were to conduct an atomic test in the future," it said, quoting unnamed officials.

Indian government sources say India's plans to build fast-breeder nuclear reactors, which produce plutonium that can be used in weapons, were still a subject for negotiation. India wants to use such reactors to reprocess nuclear fuel in contradiction of US law.

The deal aims to reverse three decades of US sanctions on nuclear trade with India, even though New Delhi has not signed the nuclear Non-Proliferation Treaty, and tested nuclear weapons in 1998.

Earlier this month Burns told a Washington-based think-tank both sides "were 90 percent of the way there."

US keen for nuclear deal with India
By Jo Johnson
FT.com
May 16, 2007

The fate of a historic civil nuclear deal between the US and India will loom over George W. Bush and Manmohan Singh when they meet on the sidelines of the G8 summit in Germany next month amid continuing differences over New Delhi's right to test nuclear weapons and reprocess fuel.

Nicholas Burns, US undersecretary of state, is expected to visit New Delhi next week in a last-ditch attempt to narrow outstanding differences ahead of the G8 meeting, a move that analysts said would underscore the fragile state of the deal.

Securing the civil nuclear deal with India remains a high priority for the flagging Bush administration, which is keen to chalk up a foreign policy success by developing a strategic partnership with a country regarded as a potential counterbalance to China in Asia.

Officials said Mr Burns and Shiv Shankar Menon, India's foreign secretary, would discuss the possibility of holding further pre-summit talks in India in a telephone call scheduled for late on Wednesday. "He won't come unless there's a real chance of showing some progress," one US official said.

"The differences between the two sides have still not been bridged," said Bharat Karnad, research professor at the Centre for Policy Research in New Delhi. "The barriers are as insurmountable as they were several months ago.

"Burns will come and fool around with diplomatese, as he did in his previous visit and as Menon did in Washington the other day, but I don't see any solution looming and suspect the bureaucrats will wash their hands of it and leave it to the political leaders to sort it out in their personal meeting."

The agreement, first outlined in July 2005, has run into serious difficulties over New Delhi's insistence that the Bush administration rewrite elements of the law enacted by Congress with bipartisan support late last year.

Although the two sides reported "extensive progress" at recent talks in Washington, officials say any agreement will still require politically costly concessions.

"We may be able to find the diplomatic language to reconcile our core differences, but at the end of the day we'll need to find the political will and leadership to accept a deal that is not one hundred per cent acceptable to either side," said one US official.

Indian negotiators are contesting a clause stating that the US would withdraw civil nuclear fuel supplies and equipment if India breached its unilateral moratorium on testing.

India is also insisting that it be given the explicit right to reprocess nuclear fuel. Observers say that India's tough stance stems in part from the political weakness of Manmohan Singh, whose Congress party has lost a slew of recent elections.

Under sustained attack from the Hindu nationalist opposition that tested a nuclear bomb in 1998, Mr Singh has been criticised for undermining the credibility of the deterrent by atomic scientists and hawks in the defence establishment.

India's Department of Atomic Energy insists the country needs to retain the right to test nuclear weapons. A particular concern is that nuclear co-operation could be suspended if India tested in response to nuclear tests by neighbours such as China and Pakistan.