Thorium Power Ltd. News Update
October 31, 2008

Letter from the CEO

Dear Stockholders:

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

Corporate News and Shareholder Meeting Recap

Our annual shareholder presentation took place on October 24, 2008, in New York. It was a well-attended event and we were gratified by the opportunity to share our news and also answer your thoughtful questions. In addition to sharing our corporate milestones, we also discussed the proposed NASDAQ listing and name change to Lightbridge, two important initiatives that reinforce our rapid progress and ambitions. As noted in the meeting, this has been a transformative year for Thorium Power: In 2008, we launched our global advisory services practice, signed successive agreements with our first client and recognized our first revenues. We also secured significant fuel technology milestones and strengthened our technology team, signed new agreements with the Kurchatov Institute, and secured the worldwide rights to technical data and updating our global patent portfolio. Finally, we have continued to strengthen the corporate and management teams by recruiting leading industry veterans and globally renowned experts. All of these important developments took place in the midst of a highly favorable legislative climate, which included the recent passage of the US-India nuclear cooperation agreement and introduction of the "Thorium Independence and Security Act of 2008" by Senators Hatch (R-UT) and Reid (D-NV). We firmly believe that we are best positioned to advance nuclear energy for the 21st century and, with your support, we will continue to pursue this important mission and remain a leader in global nuclear development.

Legislative Developments

In October, we witnessed two, major developments in the legislative arena, including the passage of the US-India civilian nuclear cooperation agreement and the introduction of the "Thorium Independence and Security Act of 2008." The US and India signed the 123 Agreement on October 10th, 2008, opening the way for US nuclear firms to enter India's $150 billion new nuclear market. Thorium Power is uniquely positioned to help India build its nuclear industry because of our track record and our unique technological expertise. As the only U.S. nuclear company with a proven track record in developing and testing non-proliferative thorium-based fuel, we are well positioned to consolidate various new business opportunities while playing a key role in the development of India's nuclear industry. The introduction of the "Thorium Independence and Security Act of 2008" is another important development. If passed by the next Congress, the legislation would pave the way for thorium-fueled reactors in the U.S. and appropriate $250 million over five years for thorium fuel research at the Department of Energy. From Washington, DC to New Delhi, there is growing support for innovative, nuclear fuel designs that practically address increasing energy demands while adhering to the highest non-

proliferation standards. We will continue to update you with the latest developments on the legislative front. Please note that the complete text of the "Thorium Independence and Security Act of 2008" is included at the end of the update.

Latest Media Coverage

We were excited to see the latest media coverage throughout October. Thorium Power was featured in a timely *US News & World Report* article titled "Some Nuclear Energy Backers Say Uranium Alternative Could Be a Magic Bullet." The article noted that "[in] the midst of renewed global interest in nuclear energy, a long-overlooked nuclear fuel, thorium, is being re-examined as a potential solution to some of the industry's most daunting problems, including disposal of waste." Thorium Power was also featured in India in an extensive *Project Monitor* Q&A, which focused on the company's potential role in India's burgeoning new nuclear market. The company was also featured in several other articles focusing on the passage of the US-India nuclear cooperation agreement and the introduction of the "Thorium Independence and Security Act of 2008" by Senators Hatch and Reid. India's *DNA*, for example, noted that "India needs advanced US technology to best use thorium, a silvery metal that has been considered an alternative nuclear fuel to scarce and expensive uranium. Due to years of nuclear isolation and lack of domestic uranium, Indian scientists have worked hard at tapping the country's abundant thorium reserves."

Speaking Engagements

On October 16th, 2008, Amb. Dennis Hays spoke at a timely Heritage Foundation event. The "Exploring New Nuclear Technologies" panel focused on the key role that new nuclear technologies can play in catalyzing the nuclear renaissance. The complete video/presentation may be accessed by clicking on the following link:

http://www.heritage.org/Press/Events/ev101608a.cfm

As noted, the MENA Nuclear Forum will take place in Doha, Qatar, from November 10th – 11th. I will speak before an unprecedented gathering of governmental, business and industry leaders from the Middle East-North Africa region. Dr. Tidu Maini, a member of Thorium Power's International Advisory Board, will chair the Forum in his capacity as Executive Chairman of the Qatar Science & Technology Park.

Once again, these latest 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

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Company News

US News & World Report – Some Nuclear Energy Backers Say Uranium Alternative Could be a Magic Bullet (10.14.08) – The leading newsweekly examines the growing interest in non-proliferative thorium fuel in a piece that is exclusively focused on Thorium Power. Reporter Kent Garber notes the following: "In the midst of renewed global interest in nuclear energy, a long-overlooked nuclear fuel, thorium, is being re-examined as a potential solution to some of the industry's most daunting problems, including disposal of waste." The reporter quotes Seth Grae.

Nature – Gulf States Plan for Nuclear Power (09.25.08) – Nature, one of the leading scientific journals, focuses its attention on the Gulf region's growing interest in civilian nuclear power. The reporter notes that "interest in nuclear power is on the rise worldwide, but the Gulf may be better situated than most to actually build reactors. Whereas Western utilities struggle to raise the billions needed for a power plant, the cash-flush Gulf states have more than enough money." The reporter quotes Seth Grae.

Project Monitor (India) – Thorium Power Can Play a Key Role in India's Nuclear Industry (10.13.08 – 10.19.08) – Seth Grae discusses Thorium Power's assessment of the India market in an extensive Q&A with Project Monitor, noting that Thorium Power is uniquely positioned to help India build its nuclear industry because of [the company's] track record and unique technological expertise." Mr. Grae notes that Thorium Power's "strategy is to leverage its advisory and fuel design capabilities to promote the growth of the Indian industry in a safe, smart and economical way."

World Nuclear News – Manager appointed for UAE's nuclear program (10.14.08) – WNN reports that CH2M Hill will act as a "managing agent for the United Arab Emirates' nuclear power program, which is expected to include orders for several gigawatts of new nuclear capacity in coming years." The company was selected by the newly created created Emirates Nuclear Energy Corporation (Enec), which was established following consultations with Thorium Power. As a principal advisor to the UAE, Thorium Power continues to provide strategic advisory services based on the successive agreements previously announced.

Energy Washington Week – Reid Sets Stage For Thorium Nuclear Legislation In 111th Congress (10.15.08) – The journal reports on the recent introduction of the "Thorium Independence and Security Act of 2008" by Senators Hatch (R-UT) and Reid (D-NV) and notes that the legislation would "facilitate the use of thorium in U.S. nuclear reactors, a proposal that addresses several proliferation concerns environmentalists have with nuclear power and thus could facilitate efforts to expand the energy source."

The Hindu Business Line – US nuke biggies to attend Green India summit (10.15.08) – The Indian newspaper reports on the recent "Green India" summit, which was organized by the US-India Business Council and CII. The summit attracted key players such as Thorium Power, Bechtel, USEC, BWXT, and Shaw Group.

Gulf News – Qatar plans to host conference on nuclear energy (10.03.08) – The newspaper reports on the upcoming MENA Nuclear Forum, and notes some of the leading speakers such as the Mena Nuclear Energy Forum will be held in Doha on November 10 and November 11. Speakers will include Abdullah Bin Hamad Al Attiyah, Qatar's Deputy Premier and Minister Of Energy and Industry, Abdul Rahman Al Attiyah, Secretary-General of the Gulf Co-operation Council (GCC), Akira Omoto, the Director of the IAEA's Nuclear Power Division and Seth Grae, president and chief executive officer of Thorium Power.

Daily News & Analysis – US-India nuke deal done (10.03.08) – DNA reports on the passage of the US-India civilian cooperation agreement, noting that "celebrations rippled through Capitol Hill and among legions of nuclear deal backers on this side of the Atlantic after the US Senate approved the landmark nuclear agreement on Wednesday night, overturning a 34-year ban on US nuclear trade with India." The article also includes a quote from Seth Grae.

US Fed News – Sens. Hatch, Reid Push for Thorium Nuclear Fuel Cycle (10.02.08) – The publication reports on the introduction of the Thorium Energy Independence and Security Act of 2008 by Sen. Orrin G. Hatch (R-Utah) and Harry Reid (D-Nev.). If passed, the legislation would "establish offices at the Nuclear Regulatory Commission and the Department of Energy to regulate domestic thorium nuclear power generation and oversee possible demonstrations of thorium nuclear fuel assemblies."

Some Nuclear Energy Backers Say Uranium Alternative Could be a Magic Bullet
Kent Garber
US News & World Report
October 14, 2008

In the midst of renewed global interest in nuclear energy, a long-overlooked nuclear fuel, thorium, is being re-examined as a potential solution to some of the industry's most daunting problems, including disposal of waste.

Widely available in the sandy beaches of India, Australia, and the United States, among other places, thorium is a naturally occurring, slightly radioactive element that is being heralded by advocates as a safer alternative to uranium that could help limit the production of nuclear waste and prevent nuclear technology from being used for weapons rather than energy.

Though many nuclear scientists have known about thorium's potential for decades—it was briefly used in the 1970s at the first U.S. commercial reactor in Shippingport, Pa.—it never caught on commercially. Today, however, with nearly three dozen nuclear reactors under construction worldwide and plans for at least two dozen more, world leaders are facing mounting pressure to make sure that the nuclear industry's expansion takes place as safely and cleanly as possible.

Could thorium be the solution? Some politicians and businesses hope so. Earlier this month, Nevada Sen. Harry Reid and Utah Sen. Orrin Hatch introduced a bill that would set aside $250 million for research and development of thorium fuels.

Abroad, interest in thorium is even greater. The Indian government publicly has said that it wants to promote new nuclear plants running on thorium to help meet its soaring energy needs. Russia, France, the United Arab Emirates, and many others also have expressed interest.

Proponents say thorium has multiple advantages over uranium fuel. Because it is consumed more slowly in nuclear reactions than uranium, it has the potential to cut the volume of nuclear waste produced in half. Unlike a uranium reaction, a thorium fuel reaction doesn't produce weapons-usable plutonium, which would allay concerns about developing countries pursuing nuclear weapons under the pretext of nuclear energy. And proponents also say that thorium fuel could be used in new and existing reactors without companies having to make major changes to their reactor designs or fork out money for retrofits.

The dilemma of nuclear waste disposal, a longtime political lightning rod, is part of the reason no new nuclear plant has been approved for construction in the United States in some 30 years. The federal government's decades-old plan to build a nuclear waste repository at Yucca Mountain, Nev., remains stuck in limbo, and many observers speculate that the repository will never get built. Thorium would not eliminate the problem but, at least in theory, could reduce the amount of waste that would need disposal.

At the moment, thorium isn't quite ready for commercial use. The research is not yet complete, and approval of thorium fuel by the U.S. government still remains at least

several years off. But some surprising international partnerships already are yielding promising developments.

One leading company, Virginia-based Thorium Power, has been working with researchers in Russia since the early 1990s to commercialize thorium (with the blessing of the U.S. government, of course). For the past five years, Thorium Power has been testing its fuel design in a research reactor at Moscow's Kurchatov Institute. Having completed that phase, the company will spend the next six months examining the results, says Thorium Power's CEO, Seth Grae. Over the next few years, it plans to test the fuel in a commercial reactor and, finally, seek approval from the Russian government to market the technology. "A few years ago I would have ticked off several risk factors that are now behind us," Grae said. "This is now at a very advanced stage."

According to the World Nuclear Association, however, there are some technical and financial hurdles that need to be resolved. There is a small concern, for instance, that the type of uranium that is formed in the reaction, if it were to be isolated, could still be used to make weapons.

Gulf States Plan for Nuclear Future
By Geoff Brumfiel
Nature
September 25, 2008

Gulf states plan for nuclear future

While Iran grabs international headlines for its controversial nuclear programme, ambitious plans for an atomic roll-out on the other side of the Gulf are quietly under way. Non-proliferation experts are already voicing concern.

Major oil-producing states, including Saudi Arabia, the United Arab Emirates (UAE) and Bahrain, are taking steps to develop civilian nuclear power. Concurrently, the Gulf Cooperation Council (GCC), a trade bloc of the six Arab states in the region, is working with the International Atomic Energy Agency (IAEA) to erect a research reactor on the peninsula. Nearly everyone in the Gulf has declared some interest in nuclear power over the past two years, says Mustafa Alani, a senior consultant with the Gulf Research Centre, an independent think tank in Dubai, UAE. "There is a fever in the region."

Interest in nuclear power is on the rise worldwide, but the Gulf may be better situated than most to actually build reactors. Whereas Western utilities struggle to raise the billions needed for a power plant, the cash-flush Gulf states have more than enough money, says Seth Grae, chief executive of Thorium Power, a consultancy on nuclear power based in McLean, Virginia. "Right now, the Gulf region represents one of the most exciting and promising nuclear markets in the world."

Grae says that the nuclear fever is driven by the region's rapidly expanding economies and the need for fresh water, for which energy-intensive desalination is the best option. But some non-proliferation experts say that fear of Iran, which may be close to developing a nuclear weapon, is the real reason behind the growing interest. "States are not driven to build reactors solely based on economic concerns," says Jill Parillo, deputy director for security programmes at Physicians for Social Responsibility, an advocacy group based in Washington DC. "It's a perceived security assurance."

It may seem strange that a region flush with oil and natural gas — not to mention the solar-energy potential — would even consider building nuclear power stations. Nuclear power plants are enormously expensive to build — recent estimates run at US$7 billion per plant. And there are time-consuming, political complications. A nation with nuclear power must introduce legislation to address liability and safety concerns, for example, and an independent regulatory body to oversee plant operations.

Yet nuclear power makes sense for the Gulf states, says Hans-Holger Rogner, the head of planning and economic studies at the IAEA, which is responsible for both overseeing nuclear safeguards and promoting the development of nuclear power. The region faces unprecedented growth over the coming decade. The UAE alone expects its electricity needs to almost quadruple, rising from around 15 gigawatts (thousand megawatts) in 2006 to nearly 40 gigawatts in 2020. Part of that demand is driven by the UAE's rapid economic development, but demand for fresh water, which will be desalinated using energy-intensive reverse osmosis, is also a major factor. The need for electricity could be met in part by burning fossil fuels, but their anticipated future price abroad makes that option uneconomical, Rogner says. "The oil and gas the Gulf states produce are worth far more on the international market than if they burn them at home."

The speed of development in Dubai makes many think its nuclear power project will also be rapid.

The UAE has progressed furthest in its plans to develop nuclear power. Earlier this year, the small, oil-rich nation penned a cooperative agreement with France to begin nuclear development, and it is looking at a bid from French companies Areva, Suez and Total to build and operate two 1,600-megawatt reactors on islands off its coast. At the same time, it is enacting legislation on nuclear issues and setting up an independent regulatory body to license and oversee its plants. "They're taking it very seriously," says Grae, whose firm consults with the UAE government on its nuclear plans.

Some are concerned about the UAE programme's rapid development. The tiny state is famous for importing foreign talent to build its roads and bridges, and it looks as though nuclear will be no exception. "They're apparently talking about just buying in regulators from other countries," says Charles Ferguson of the Council on Foreign Relations, a think tank based in Washington DC. Ferguson says that these foreign regulators would face "enormous pressure" from the government if they tried to shut down a reactor for safety reasons.

Grae counters that the UAE already has a proven record of importing international talent to operate independent institutions. Dubai's International Financial Centre, for example, is administered according to international 'common law' and has its own courts staffed by foreign judges. "The UAE has some real examples of regulatory independence," Grae says.

Like many states in the region, the UAE has signed up to the international Nuclear Non-Proliferation Treaty, a document that promises aid for civilian programmes if countries give up their right to nuclear arms. In addition, it and many other GCC states have announced that they will not develop the nuclear technologies of most concern: uranium enrichment and spent-fuel reprocessing. Both technologies can be used to manufacture reactor fuel, but they can also be used to refine weapons-grade nuclear material. Rogner says he is satisfied that the Gulf states are not a danger. "A nuclear power plant per se is not a proliferation risk," he says.

Grae says that he believes economics is the sole driver behind the Gulf's push for nuclear power. "What I am seeing in the UAE is that this has zero to do with security," he says.

But Parillo has her doubts. Creating the technological basis for a civilian programme will also be of some use should the states ever need to develop nuclear weapons, she says. Building and operating plants will help nations develop expertise in areas such as reactor physics and the handling of nuclear materials. "This is the first step on the way to developing a dual-use capability."

Alani adds that it is no coincidence that the Gulf's nuclear renaissance began in earnest two years ago. In the spring of 2006, the IAEA announced that Iran was enriching uranium without the agency's approval. The Gulf states view Iran as an expansionist and interventionist regime, he says, and the international community's failure to control its programme set off alarm bells. The message to many states was clear, he says: "One has to start a civilian programme to start narrowing the gap." ■

Geoff Brumfiel

Thorium Power Can Play a Key Role in India's Nuclear Industry
Project Monitor
October 13-19, 2008

'Thorium Power can play a key role in India's nuclear industry'

Thorium Power Ltd, Virginia, USA, is a pioneer of nuclear energy and developer of nuclear fuel technology. The company is eyeing a big slice of the estimated $150 billion business opportunity in the Indian nuclear market. **Seth Grae** reveals his company's upcoming plans to **Sandeep Menezes.**

— Seth Grae, President and CEO, Thorium Power Ltd

How can Thorium Power assist in Indian civil nuclear energy?
Thorium Power Ltd is uniquely positioned to help India build its nuclear industry because of our track record and our unique technological expertise. Our strategy is to leverage our advisory and fuel design capabilities to promote the growth of the Indian industry in a safe, smart and economical way. Thorium is critical to the future growth of India's nuclear industry and Thorium Power is the only US nuclear company with a proven track record in developing and testing non-proliferative thorium-based fuel.

We are also well positioned to assist India because we have engaged key entities in the government and the private sector for some time. As the leading provider of low-waste, thorium-based, non-proliferative fuels, we can play a key role in the development of India's nuclear industry and anticipate several new business opportunities moving forward.

Why is efficient and modern nuclear fuel technology important?
Modern fuel technology is vitally important because the future of nuclear power depends on the industry's ability to address the lingering concerns—proliferation, waste and operating economics. All across the world, there are hundreds of new reactors in planning or at different stages of development. But everyone acknowledges the concerns and almost everyone agrees that we can't deploy 20th century technology in order to build a 21st century industry. We need advanced nuclear fuel technology that is safe, viable and economical.

The IAEA and World Nuclear Association agree that thorium is an optimal alternative to uranium fuel and there is a clear movement towards thorium fuel. Also, India has always been at the scientific and technological forefront, and India's experts understand the distinct advantages of using thorium in the nuclear fuel cycle. Thorium Power is uniquely positioned to establish a new standard in non-proliferation because we know that the promise of safe nuclear power will only be realised if and when we deploy advanced, non-proliferative fuel-based solutions.

"Thorium is critical to the future growth of India's nuclear industry," says Seth Grae. Picture shows a nuclear reactor based on thorium which is considered as an alternative nuclear fuel to uranium.

Can you tell us about your business plans in India?
Our long-term plan is to play a pivotal role in helping the Indian government and private sector to seize the opportunity to advance nuclear power. Nuclear energy is a practical and viable solution for India, to meet its enormous future energy needs, and we stand ready to assist. India already has an abundance of highly-skilled nuclear engineers and scientists and will become a significant player in the international nuclear market. The 123 Agreement will provide us with a unique opportunity to combine India's scientific strengths with our advanced technology to advance the worldwide nuclear renaissance.

How much business does Thorium Power aim to secure in India?
The passage of the US-India civilian nuclear cooperation agreement is a major milestone and it enables us to pursue new opportunities in what is estimated to be a $150 billion nuclear marketplace. We have been engaged in serious discussions with many entities in the private sector and government, and we recognise the growing interest in non-proliferative nuclear power. Our immediate goal is to accelerate those discussions so that we can consolidate many of the new business opportunities before us. India is an exciting market and we are proud to participate in the development of what promises to be one of the fastest-growing nuclear markets.

Any plans to set up manufacturing units or marketing offices?
We certainly intend to have a long-term presence in India. We are currently exploring plans and will disclose the details at the appropriate time.

Will you partner Indian companies in civilian nuclear energy?
Yes. We are looking at partnering strategies in the government and private sectors that will enable us to pursue a number of licensing opportunities. Based on the milestones that we have achieved in our ongoing fuel commercialisation process, we are well positioned to deploy our non-proliferative fuel designs in the Russian-type reactors being deployed in India as well as Western reactor designs that are being considered in India. The completion of the India-US deal enables us to generate license-driven revenue within India as well as international nuclear vendors.

Will your India foray be 'buyer-seller' or 'long-term' engagement?
We are confident that we can play a key role in helping India to develop its nuclear industry in a safe, smart and economical way. In that regard, we are confident of a long-term engagement that will contribute to the overall growth of the industry and directly support our business plan.

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- Fully understand the assessment and management of risk within construction projects and how those risks are apportioned within the contracts.
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"Gleeds have used Kelvin as a tutor for many of our training courses over the last few years and we have always received excellent feedback from our attendees. Kelvin has a flexible and easy-going style which fits well with the rest of our calendar of events and approach to training in general."
Elaine Cottam Corporate Training Manager
Gleeds

"We have used Kelvin Hughes as a tutor on our contracts courses in the UK and also in the Middle East for a number of years. He has excellent knowledge and practical experience of a wide range of contracts and legal issues and feedback is always excellent. Delegates particularly appreciate his ability to draw on his own practical experience as a working practitioner to explain complex issues."
Peter Symmons Partner
Symmons Madge Associates

"Kelvin Hughes has conducted FIDIC training courses for our employees. The participants found the course very useful and the learning was much appreciated. Kelvin has a very comfortable approach during delivering of his training using practical examples. We would recommend this course for all organizations in the construction and landscaping industry to improve their contracts knowledge"
Learning and Development Dept, Desert Group, Dubai

"ANC invited Kelvin Hughes to provide training in the use of the NEC3 contracts... The programme for the seminar was tailor made to suit the audience and was conducted in a very professional manner. I would

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27th October, 2008
3rd November, 2008

Some Nuclear Energy Backers Say Uranium Alternative Could be a Magic Bullet
By Kent Garber
US News & World Report
October 14, 2008

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Widely available in the sandy beaches of India, Australia, and the United States, among other places, thorium is a naturally occurring, slightly radioactive element that is being heralded by advocates as a safer alternative to uranium that could help limit the production of nuclear waste and prevent nuclear technology from being used for weapons rather than energy.

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several years off. But some surprising international partnerships already are yielding promising developments.

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Manager appointed for UAE's nuclear program
World Nuclear News
October 14, 2008

CH2M Hill will act as a managing agent for the United Arab Emirates' nuclear power program, which is expected to include orders for several gigawatts of new nuclear capacity in coming years.

The US-based firm was selected by the newly-created Emirates Nuclear Energy Corporation (Enec) for an initial ten-year period. Financial details were not disclosed but CH2M Hill would be responsible for, among other things: selecting prime contractors; implementing owners' responsibilities; master program planning; and licensing. It would also ensure that the program is in line with International Atomic Energy Agency (IAEA) recommendations on which the country's strategy has been based.

The UAE has made nuclear cooperation agreements with France, the UK and the USA, while Areva, Total and Suez have already partnered to build a 1600 MWe EPR unit in the UAE, partly for desalination of water. Electricity demand in the UAE is expected to more than double to 2020.

Enec itself was set up by consultants at **Thorium Power** following dialogues between UAE officials and the IAEA. It has $100 million in initial funding. Another forthcoming development is the creation of the Federal Authority for Nuclear Regulation, also a responsibility of Thorium Power.

CH2M Hill said it already has 500 program management staff in the UAE working on projects such as the zero-carbon Masdar City and the ADSSC Strategic Tunnel Enhancement Program, both in Abu Dhabi.

US energy policy may include thorium
World Nuclear News
October 17, 2008

[NEI Overview, 13 October] Thorium is set to feature in the US Atomic Energy Act with an amending bill now before Congress. The *Thorium Energy Independence and Security Act of 2008* proposes establishing "an office for the regulation of thorium fuel cycle nuclear power generation" in both the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC). The bill also envisages a demonstration project in cooperation with the Idaho National Engineering Laboratory (INEL) and would provide $250 million over five years to fund developments. Energy security and nonproliferation objectives are the main rationale. Thorium is much more abundant in nature than uranium and can also be used as a nuclear fuel through breeding to uranium-233 (U-233). When thorium fuel cycle is used, much less plutonium and other transuranic elements are produced, compared with uranium fuel cycles.

Nuclear deal to be a win-win for India, US
Times of India
October 3, 2008

WASHINGTON: Conventional — and Leftist — wisdom is that western corporations, especially American multinationals, will reap a bonanza from the lifting of the ban on nuclear trade between New Delhi and rest of the world, milking India of both money and indigenous enterprise. Wrong on two counts, say experts. One, Indian businesses and even state enterprises stand to gain as much if not more from the breakthrough in trade. And two, traditional American powerhouses are way behind the curve, having forfeited their lead in nuclear technology to Europe, Russia, and Japan.

One of the first reactions to the landmark deal came from the little-known Thorium Power Ltd, a McLean, Virginia-based company which recognizes India's leadership in the use of thorium in the nuclear fuel cycle and which claims to have engaged various entities in India's private and governmental sectors for many years.

"India is in the forefront of the world in recognizing the distinct advantages of using thorium in the nuclear fuel cycle while Thorium Power is the world leader in developing non-proliferative, low waste thorium nuclear fuels. There is much we can learn from each other and much we can do together," the company said in a statement following the passage of the nuclear legislation. "This agreement allows us to hold advanced discussions with some of the leading entities and we anticipate that these business opportunities will move forward."

Thorium Power Ltd president and CEO Seth Grae reckons that India will become a "significant player" on the international nuclear market "given the nations great number of highly skilled nuclear engineers and scientists, and successful and far reaching multinational corporations." The 123 Agreement, he says, "affords a unique opportunity to combine India's great strengths with innovative American technology to significantly advance the world-wide nuclear renaissance."

Bunkum, say American non-proliferation gurus, smarting at the victory of the pro-deal coalition. The business opportunities are overstated, and the deal is fundamentally a strategic gambit that has shattered the non-proliferation structure, more than an energy trade breakthrough for America.

"The profits and jobs created will go elsewhere — primarily to Russia and France — but the downside risks of placing profit taking ahead of non-proliferation principles could be far-reaching and widely shared," says Michael Krepon, co-founder of the Washington-based Stimson Center. Russian and French firms, he maintains, will reap most of the benefits of these rule changes because they have very little U.S. competition. Westinghouse's nuclear power division has been purchased by Toshiba, and GE will be constrained from building nuclear power plants in India unless New Delhi enacts liability waivers against costly accidents.

For many lawmakers though, the business aspects were incidental to the deal. Ed Royce, a Republican Congressman from California, a state with some of the biggest defence contractors, said in an interview that his support for the deal was driven primarily by long-term strategic considerations. "India can buy nuclear equipment from Russia, France or any other country," Royce told TOI, "From my point, this deal

advances broader economic engagement along with commitment to security between two countries that have many shared values."

But corporate America, which strained every muscle to push for the deal, is cock-a-hoop for now. The US-India Business Council said the breakthrough "would open a wide vista of opportunity for US-India collaboration in commerce, civil nuclear research, technology transfer, essential inputs to power India’s dynamic, fast-growing economy."

US nuke biggies to attend Green India summit
The Hindu Business Line
October 15, 2008

Civil nuclear trade mission to India likely

Anil Sasi

New Delhi, Oct. 14 A strong turnout by the US nuclear industry is on the cards at the 'Green India Summit' being organised by the US-India Business Council (USIBC) and CII in Washington on Wednesday, with reactor majors GE and Westinghouse Electric, along with Bechtel, USEC, **Thorium Power**, BWXT, and Shaw Group among the nuclear biggies set to attend the event.

The Summit, which comes close on the heels of the signing into law of the US-India civil nuclear cooperation initiative, is being seen as a precursor to an official US nuclear trade delegation coming to India shortly to step up engagements.

The event is set to be attended by the Planning Commission Deputy Chairperson, Mr Montek Singh Ahluwalia and the Power Minister, Mr Sushilkumar Shinde.

"GE, Westinghouse, Bechtel, USEC, Thorium Power, BWXT, and Shaw Group will be attending among others," Mr Ted Jones, a spokesperson for Green India Summit, told Business Line. The US Secretary of Commerce, Mr Carlos Gutierrez, who is to participate in the event, is also likely to announce an upcoming civil nuclear trade mission to India, which is expected to take place before year-end.

Following last week's signing into law the US-India civil nuclear cooperation initiative, US firms are in the running, along with Russian and French reactor manufacturers, for India's civil nuclear build up plans – pegged at over $150 billion over the next 30 years.

The USIBC-CII 'Green India' Initiative is aimed at highlighting the challenges and opportunities relating to India's infrastructure upgradation plans and the summit would examine the opening of India's civilian nuclear energy sector and the potential for investments. Among the key sponsors of the summit is Nuclear Energy Institute, which is apex policy making body of the America's nuclear companies. GE is also a sponsor of the event.

USIBC represents some of the top 300 US companies who are carrying business in India or are interested in entering the emerging Indian market.

Reid Sets Stage For Thorium Nuclear Legislation In 111th Congress
Energy Washington Week
October 15, 2008

Senate Majority Leader Harry Reid (D-NV) along with Sen. Orrin Hatch (R-UT) recently introduced legislation to facilitate the use of thorium in U.S. nuclear reactors, a proposal that addresses several proliferation concerns environmentalists have with nuclear power and thus could facilitate efforts to expand the energy source. The bill's introduction by such senior senators sets the stage for its further consideration next year.

On Oct. 1, Reid and Hatch introduced The Thorium Energy Independence and Security Act of 2008, which would allocate $250 million for the Nuclear Regulatory Commission (NRC) and the DOE to create offices to research thorium use in the nuclear fuel cycle and to promulgate relevant regulations for commercial use. The legislation also calls on the Idaho National Engineering Laboratory to conduct demonstration projects of thorium-fueled nuclear power generation.

"With the growing interest in thorium nuclear power in the world and in the U.S., it's time we made sure our government has a regulatory infrastructure in place to accommodate this new generation of nuclear power," Hatch said in a statement.

A source in Hatch's office says that while the legislation doesn't provide straightforward incentives for using thorium fuel (instead, advancing research and regulations), it "opens the door" for the technology to be brought to market.

Proponents of the legislation identify four key benefits for using thorium in the nuclear fuel cycle. First, it requires plutonium to trigger the initial reactions and thereby acts as a non-proliferation agent. Compared with uranium-fueled reactors, reactors fueled by thorium produce less plutonium that can be used in weapons. Thirdly, thorium resources are also more abundant than uranium. Finally, a thorium-fueled reactor produces about one third the waste produced from a similar uranium-fueled reactor, easing storage and disposal concerns.

A nuclear physicist at the Natural Resources Defense Council (NRDC), although not familiar with the details of the legislation, says that in general he supports government research to license the use of thorium in nuclear power reactors. Although using thorium doesn't eliminate concerns with nuclear power, he says it "makes them smaller."

Dennis Hays, Director of Government Affairs at **Thorium Power**, which develops and owns technologies that incorporate thorium into the nuclear fuel cycle, said in a statement the legislation "promises to advance the nuclear renaissance here in the United States" while paying special attention to "innovative, nuclear fuel designs that practically address increasing energy demands while adhering to the highest non-proliferation standards."

India has an abundance of thorium and is interested in deploying thorium technology, according to the NRDC source. The U.S.-India 123 agreement, which allows additional nuclear technology trade between the two countries, was signed by President Bush on Wednesday Oct. 8 and then by representatives of India's government.

Hays, of Thorium Power, said the agreement will help deliver its technology to India. "India is an exciting new market with a longstanding interest in thorium fuel. We look

Gulf News: Qatar plans to host conference on nuclear energy.
Gulf News
October 3, 2008

Abu Dhabi: Qatar will host a two-day conference on nuclear energy in November which will be attended by representatives from the Middle East and North Africa (Mena), the conference organisers said on their website.

The Mena Nuclear Energy Forum will be held in Doha on November 10 and November 11. Speakers will include Qatar's Deputy Premier and Minister Of Energy and Industry Abdullah Bin Hamad Al Attiyah, Secretary-General of the Gulf Co-operation Council (GCC) Abdul Rahman Al Attiyah, Egypt's minister of electricity and energy Hassan Younes, Director in the Nuclear Power Division of International Atomic Energy Agency (IAEA) Akira Omoto and Seth Grae, president and chief executive officer of **Thorium Power**.

"The objective of the forum will be served through the bringing together and exchange of plans and experiences by Mena nuclear energy authorities and the wider global nuclear community," said the organisers.

The IAEA last year signed a "practical co-operation arrangement" with Qatar aimed at assisting the Middle East country to develop its nuclear security regime.

According to the terms of the arrangement, the IAEA will co-operate with and support Qatar to enhance the effectiveness and efficiency of nuclear security. This will include advising Qatar on physical protection measures for nuclear facilities and helping to provide equipment for the prevention and detection of criminal acts involving nuclear and other radioactive material.

Consultation

The arrangement also includes the possibility for the IAEA to provide nuclear security consultation, advisory missions, training and assistance in response to nuclear or radiological security incidents, if requested.

US-India nuke deal done
By Uttara Choudhury
Daily News & Analysis
October 3, 2008

Team Bush, US industry, Indian Americans and pro-deal advocates of every stripe open the champagne

Celebrations rippled through Capitol Hill and among legions of nuclear deal backers on this side of the Atlantic after the US Senate approved the landmark nuclear agreement on Wednesday night, overturning a 34-year ban on US nuclear trade with India.

"The accord will strengthen our global nuclear non-proliferation efforts, protect the environment, create jobs and assist India in meeting its growing energy needs," said President George Bush, basking in the afterglow of a rare foreign policy success. US secretary of state Condoleeza Rice is flying to Delhi on Saturday to formally sign the deal.

The agreement sailed through the Senate by an overwhelming 86-13 vote, marking a major step forward in US-India relations. That the deal was bipartisan was made clear with both US presidential candidates - John McCain and Barrack Obama - voting in favour of it.

Prime minister Manmohan Singh, who has invited a lot of bouquets and brickbats in recent months over the nuclear deal, will be pleased that a desperate ragtag attempt by several senators earlier to amend the agreement was rejected by a unanimous voice vote. The dissident senators wanted to insert a clause for scrapping the deal if India carried out further nuclear test explosions.

But no one in New Delhi should be nad've enough to presume that India can explode nuclear devices and not face the music. The nuclear deal cruised to the finish line, but not before secretary of state Condoleezza Rice had assured senators that a nuclear test by India will result in "most serious consequences."

"If India resumes testing, the 123 agreement is over," said senior Republican senator Richard Lugar, citing US laws and emphatic assurances from the state department.

Some US senators criticised the pact with a non-NPT member, saying it set a bad example for nuclear renegades North Korea and Iran.

"India gets to have their cake and eat it too," harrumphed Democratic senator Jeff Bingaman, whose wrecking amendment was spiked in a voice vote.

Despite the stray grumbling, the solid congressional backing for the nuclear deal underscores bipartisan support for President Bush's bold gambit to improve and reinvent frosty Cold War-plagued ties with India. The agreement, which has been over three years in the making, was also approved by the US house of representatives on Saturday by a 298-117 vote.

By championing the US-India nuclear energy deal, President Bush has brought New Delhi and Washington closer and placed a very large bet on the upside of a geo-strategic partnership with India. There's more than just multi-billion-dollar nuclear reactor business up for grabs. The deal is seen as a proxy for Indo-American relations, and augurs well for future geostrategic, defense and economic ties.

India needs advanced US technology to best use thorium, a silvery metal that has been considered an alternative nuclear fuel to scarce and expensive uranium. Due to years of nuclear isolation and lack of domestic uranium, Indian scientists have worked hard at tapping the country's abundant thorium reserves.

"India represents one of the most important new nuclear markets and we look forward to leveraging our unique technological and advisory capabilities to enable India to become one of the leaders of the nuclear renaissance," said Seth Grae, president and CEO of **Thorium Power**, a pioneer in developing non-proliferative nuclear fuel based on thorium.

"Some countries have a lot of uranium; others import all of the fuel material. India has the ability to use its own thorium. I think that is very important," said Grae. "The amount of nuclear power potentially that can be deployed in India could make it one of the largest nuclear energy markets in the world."

With 17 plants in operation, India already has a flourishing and largely indigenous nuclear power programme. But at present, nuclear energy provides only 2.5% of India's electricity; the goal is for nuclear power to supply 25% of electricity by 2050.

India also signed a landmark atomic energy pact with France earlier this week. More will be in the works, with Russia and possibly Canada coming up later.

Congress president Sonia Gandhi congratulated prime minister manmohan Singh and said it was a landmark development that would contribute immensely in augmenting the much needed energy generation capacity for agriculture and in meeting India's developmental objectives.

FACTORS THAT SWUNG THE DEAL

The Indian American lobby: The Indian community in the US showed its collective muscle for the first time. "We were willing to move mountains to get this deal done and our hard work has paid off," says Swadesh Chatterjee, chairman of the US-India Friendship Council which was formed in 2005 to push the N-deal. Chatterjee made 69 trips to Washington from his home in North Carolina to campaign for the deal.

The business rationale: The 300-member US-India Business Council (USIBC) lavished big money on lobbyists. It engaged the politically well-connected lobbying firms Patton Boggs LLP and Stonebridge International to convey US industry's sense of urgency to Capitol Hill. USIBC president Ron Somers says the deal signifies the "Berlin Wall coming down" on Indo-US business opportunity.

The US financial crisis: The financial meltdown focused the minds of US Congressmen, who are contending with recessionary job losses and financial Armageddon. The

business opportunity opened up by the deal is estimated at $150 billion over the next 30 years. Jeff Immelt, chief of General Electric, said: "In a time of market turmoil and economic instability, this is a remarkable opportunity for the US and a rising economic partner."

DISCORDANT NOTES

Pakistan wants me-too deal

Pak PM Yousuf Raza Gilani has demanded a similar civilian nuclear agreement with the US. "We do not want discrimination. Pakistan will make efforts for civilian nuclear technology and they [US] will have to accommodate us," he added.

N-test is a no-no now

Secretary of state Condoleezza Rice assured senators that a nuclear test by India will result in "most serious consequences." Republican senator Richard Lugar, who voted for the deal, also said: "If India resumes testing, the 123 agreement is over."

Sovereignty has been sacrificed: BJP

The BJP has said it would renegotiate the India-US nuclear deal if it came to power. "The deal has been done at the cost of the country's sovereignty and nuclear independence. We don't accept it in its current form," said BJP spokesman Rajiv Pratap Rudy

India betrayed, says the Left

The Left parties say the UPA govt would be betraying India's vital interests if it signed the Indo-US nuclear deal. "It will be a complete surrender to the US...It is a bad deal and an unequal treaty," said CPI(M) general secretary Prakash Karat

Sens. Hatch, Reid Push for Thorium Nuclear Fuel Cycle
US Fed News
October 2, 2008

WASHINGTON, Oct. 2 -- The office of Sen. Orrin G. Hatch, R-Utah, issued the following news release:

Sen. Orrin G. Hatch (R-Utah) and Harry Reid (D-Nev.) today introduced legislation that would pave the way for thorium nuclear-fuel reactors in the United States.

The Thorium Energy Independence and Security Act of 2008 would establish offices at the Nuclear Regulatory Commission and the Department of Energy to regulate domestic thorium nuclear power generation and oversee possible demonstrations of thorium nuclear fuel assemblies.

Using thorium for nuclear power has a number of potential benefits over conventional uranium. As a resource, thorium is abundant in the U.S. and throughout the world. A thorium fuel rod would remain in the reactor about three times as long as conventional nuclear fuel, cutting the volume of spent nuclear fuel by as much as two-thirds. Also, thorium nuclear fuel would significantly reduce the possibility that weapons-grade material would result from the process. Finally, a thorium fuel cycle could be used to dispose of existing plutonium stockpiles, which is the national security goal.

"Our nation has focused mostly on mixed oxide nuclear fuel cycles, and our regulatory structure reflects that," Hatch said. "With the growing interest in thorium nuclear power in the world and in the U.S., it's time we made sure our government has a regulatory infrastructure in place to accommodate this new generation of nuclear power."

Speaking about the bill, Bruce Blair, president of the World Security Institute said, "This legislation reflects an enlightened grasp of the importance of supporting nuclear power while suppressing nuclear proliferation.'"

Seth Grae, president and CEO of **Thorium Power** said that the bill "represents a major milestone toward the recognition that the nuclear renaissance can best be achieved by encouraging new and innovative fuels designs. Senators Hatch and Reid have acted today to strengthen American technology and American business to compete in the global marketplace."

"This bill is a giant step for the United States toward the development of a safe, secure and independent energy future," said Jack Lifton, business development and corporate communications director of Thorium Energy.

Thorium Energy, a Utah resource company, owns property in Lemhi Pass, Idaho, where it is generally believed that the largest veins of thorium-rich minerals in the world are located. Analysis of the deposits shows them to be either the highest grade or in the top tier of the highest grade known anywhere on Earth.

Thorium Energy Independence and Security Act of 2008 (Introduced in Senate)

S 3680 IS

110th CONGRESS
2d Session
S. 3680

To amend the Atomic Energy Act of 1954 to provide for thorium fuel cycle nuclear power generation.

IN THE SENATE OF THE UNITED STATES

October 2 (legislative day, September 17), 2008

Mr. HATCH (for himself and Mr. REID) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

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A BILL

To amend the Atomic Energy Act of 1954 to provide for thorium fuel cycle nuclear power generation.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the `Thorium Energy Independence and Security Act of 2008'.

SEC. 2. FINDINGS.

Congress finds that--

(1) the United States and foreign countries will require massive and increasing quantities of energy during the 20-year period beginning on the date of enactment of this Act to support economic growth;

(2) nuclear power provides energy without generating unacceptable quantities of greenhouse gasses;

(3) the generation of nuclear power in the United States and many foreign countries has been discouraged by concerns regarding--

(A) the proliferation of weapons-useable material; and

(B) the proper disposal of spent nuclear fuel;

(4) nuclear power plants operating on an advanced thorium fuel cycle to generate nuclear energy--

(A) could potentially produce fewer weapons-useable materials than uranium-fueled plants; and

(B) would produce less long-term waste as compared to other nuclear power plants;

(5)(A) thorium is more abundant than uranium; and

(B) the United States possesses significant domestic quantities of thorium to ensure energy independence;
(6)(A) thorium fuel cycle technology was originally developed in the United States; and
(B) cutting-edge research relating to thorium fuel cycle technology continues to be carried out by entities in the United States; and
(7) it is in the national security and foreign policy interest of the United States that foreign countries seeking to establish or expand generation and use of nuclear power should be provided--
(A) access to advanced thorium fuel cycle technology; and
(B) incentives to reduce the risk of nuclear proliferation.

SEC. 3. THORIUM FUEL CYCLE NUCLEAR POWER GENERATION.

Chapter 19 of title I of the Atomic Energy Act of 1954 (42 U.S.C. 2015 et seq.) is amended by inserting after section 244 the following:

`SEC. 251. THORIUM FUEL CYCLE NUCLEAR POWER GENERATION.

`(a) Definitions- In this section:
`(1) CHAIRMAN- The term `Chairman' means the Chairman of the Nuclear Regulatory Commission.
`(2) OFFICE- The term `Office' means an office established under subsection (b)(1).
`(3) SECRETARY- The term `Secretary' means the Secretary of Energy.
`(b) Offices for Regulation of Thorium Fuel Cycle Nuclear Power Generation-
`(1) ESTABLISHMENT- The Secretary, in consultation with the Chairman, shall establish, and provide funds to, an office for the regulation of thorium fuel cycle nuclear power generation in each of--
`(A) the Office of Nuclear Energy, Science and Technology of the Department of Energy; and
`(B) the Nuclear Regulatory Commission.
`(2) REGULATIONS- Not later than December 31, 2012, the Chairman, in cooperation with the heads of the Offices, shall promulgate regulations for facilities and materials used in thorium fuel cycle nuclear power generation.
`(3) DEMONSTRATION PROJECTS- The heads of the Offices, in cooperation with the head of the Idaho National Engineering Laboratory, shall carry out demonstration projects for thorium fuel cycle nuclear power generation at the Idaho National Engineering Laboratory.
`(4) INTERNATIONAL PARTNERSHIPS AND INCENTIVES- The heads of the Offices shall provide recommendations to the Secretary with respect to methods of--
`(A) strengthening international partnerships to advance nuclear nonproliferation through the design and deployment of thorium fuel cycle nuclear power generation; and
`(B) providing incentives to nuclear reactor operators in the United States and foreign countries to use proliferation-resistant, low-waste thorium fuels in lieu of other fuels.
`(c) Report- Not later than 1 year after the date of enactment of the Thorium Energy Independence and Security Act of 2008, and annually thereafter, the

Secretary shall submit to Congress a report describing, with respect to the preceding calendar year--

`(1) progress made in implementing this section; and

`(2) activities carried out by the Offices pursuant to this section.

`(d) Authorization of Appropriations- There are authorized to be appropriated to the Secretary to carry out this section $250,000,000 for the period of fiscal years 2009 through 2013.'.