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  TSXv: ZC
FSE: ZCT1

Lakeland Resources Inc (TSXv: LK) (FSE:6LL)

Canadian Uranium Exploration

Outlook: Positive

RESEARCH & OPINION

SUMMARY:

1. The Athabasca Basin is home to the highest grade uranium deposits in the world. Exploration in the Basin offers investors upside exposure to projected growth in commercial nuclear generating capacity. This region, as the low-cost producer is unique, providing insurance from falling uranium prices.
2. LK follows a disciplined business strategy; targeting properties with historical exploration data and shallow depths to potential mineralization. A strong technical team will increase efficiency of exploration.
3. LK recently completed a gross C\$1,057,718 financing to explore its Gibbon's Creek Target. News flow should be forthcoming, potentially adding short term volatility for shareholders to capitalize on.
4. Relative valuation based on market capitalization to other exploration companies in the Basin renders LK attractive (Table 1).

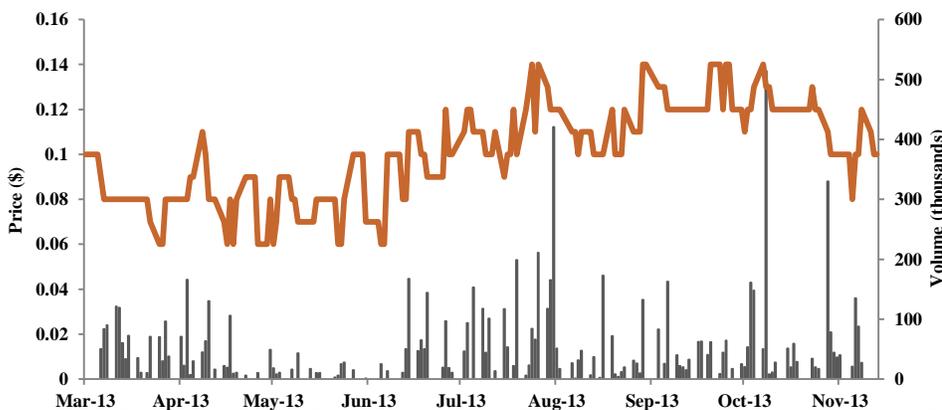


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Introduction – grade is king

Uranium, a reasonably abundant metal present even in seawater, has great capacity for energy. However, finding sufficient concentrations of the metal to constitute an orebody, approximately a factor of 1000x its crustal abundance, is difficult¹. In fact, uranium grades of 1-2% are considered high-grade. In contrast, Canada’s Athabasca Basin (the Basin) hosts the highest grade known uranium deposits in the world. For example, the McArthur River mine, located in the east of the Basin, is the largest high-grade uranium mine in the world, with grades approaching 20%. These high grades permit miners in the Basin to profit from operations even with uranium prices that are less attractive elsewhere in the world (Chart 1).

Structure of the Report – a non-geological undertaking

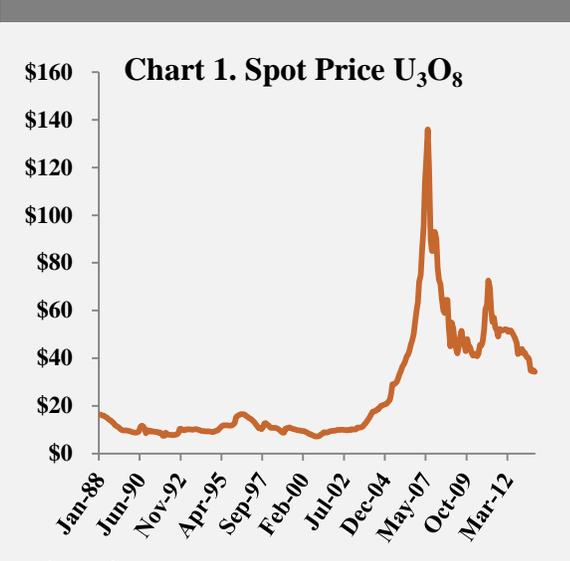
Counter to what many geologists and casual observers believe, several studies have found the long-term volume of mineral resources economically available to society are a function of the real price for the mineral and less dependent on the volume of current identified mineral reserves (scarcity argument)². This has obvious implications for natural resources exploration industries. The fallacy of the resource scarcity argument lies in the fact that it ignores behavioral responses that are triggered by fluctuations in real prices. The behavioral responses to rising real commodity prices include changes in consumption, efficiency gains, technological improvements, supply side substitutes, and new discoveries through greater exploration efforts.

A geological understanding is assuredly valuable when analyzing exploration companies. Unfortunately, geology and mine engineering are complicated sciences that require a material investment of time and capital. The good news is that since expected higher real uranium prices tend to attract investment into exploration ventures, retail investors can still potentially profit by using a top-down approach and diversifying away unsystematic risk. Therefore, the central themes potential investors in exploration companies need to form an opinion of are the following:

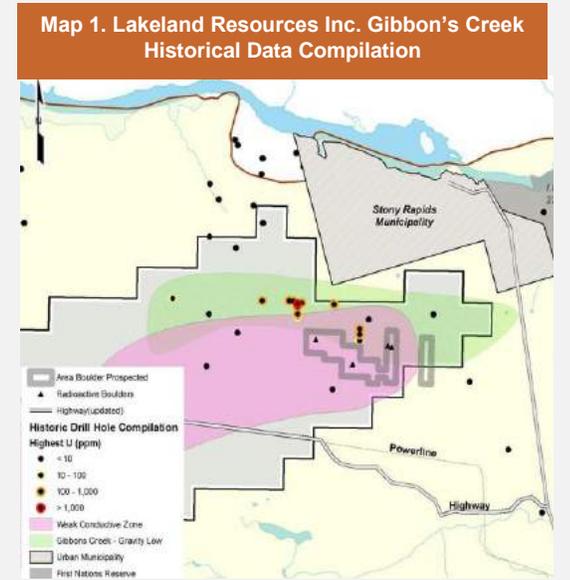
1. Expected real price (inflation adjusted) movements for the commodity
2. Prolificacy of the region – an indicator of further discovery potential
3. Experience and expertise of the exploration team

All else equal, rising prices for the underlying commodity will attract greater exploration and entice investors. To extrapolate favorable geology, greater focus should be concentrated on regions with producing assets located in competitive jurisdictions and a history of successful exploration. An added benefit is the established infrastructure in these regions is a public good, potentially reducing exploration and production costs. Finally, knowledgeable

¹Robert Stevens, “Mineral Exploration and Mining Essentials”, BCIT, 2012, pg 48
²World Nuclear Association (WNA), “Uranium Supply”, 2012, <http://world-nuclear.org/info/Nuclear-Fuel-Cycle/Uranium-Resources/Supply-of-Uranium/>



Source: Cameco



Source: LK and Dahrouge Geological

Table 1. Athabasca Basin Exploration Comparables				
Company	TSX Venture Ticker	Shares Outstanding (millions)	Recent Bid Price (CAD)	Market Cap (millions of CAD)
NexGen Energy	NXE	128.0	0.280	35.8
Forum Uranium	FDC	26.4	0.295	7.8
Azincourt Resources	AAZ	28.5	0.290	8.3
Lakeland Resources	LK	32.7	0.105	3.4
Noka Resources	NX	21.9	0.135	3.0

Source: Stockwatch

teams that have previous experience exploring for the established commodity within the region will increase the chance of successfully locating a discovery, and will help attract financing.

Due to the inherent difficulty with locating high-grade uranium deposits and the potential need to continuously finance drill intensive exploration programs, there exists material probability of unsuccessful exploration. Thus, diversification among active explorers in the district is important for investors.

Structure of the Report – concluding remarks

Uranium use has evolved from purely military applications to electricity generation, and more recently to the use of radioisotopes for diagnostics and other various industries. However, there remains substantial military stockpiles of uranium in the US and Russia, and industry demands ex-electricity generation are immaterial to existing uranium production. Projecting constant 2013 global reactor requirements forward, there is enough identified uranium to supply over 100 years worth of demand, ignoring price.³ Therefore, the growth in global electricity generation and the subsequent supply side response – new commercial reactor builds – to meet this demand will be the major driver for the uranium market (Table 2).

Global Electricity Demand – outlook

Global electricity generation increased an astounding 126% between 1985-2012⁴. The International Energy Agency (IEA) estimates that 20% of the global population did not have access to electricity in 2010⁵. The US Energy Information Administration (US eia) forecast almost a doubling of global electricity generation by 2040; while Exxon Mobile’s Outlook for Energy predicts 85% growth over the same period.⁶ BP’s 2013 Energy Outlook only projects out to 2030, yet predicts total electricity consumption to increase by 61%. The average of these estimates over a 15-year period forecasts a robust compound annual growth rate (CAGR) (Table 3). However, these estimates could be conservative as the Organisation for Economic Co-operation and Development (OECD) member countries accounted for 51% of global electricity generation in 2010 while representing just 18% of the global population. On average, OECD members consume more than four times the electricity per person than non-OECD members; however, the trend is toward convergence.⁷

Material growth in electricity generation will come from non-OECD Asia, including China and India; and possibly Africa where a majority of the

³ OECD Uranium Redbook’s identified resources consists of reasonably assured and inferred resources
⁴ BP’s Statistical Review of World Energy 2013, <http://www.bp.com/en/global/corporate/about-bp/statistical-review-of-world-energy-2013.html>
⁵ International Energy Agency (IEA) | World Energy Outlook 2011
⁶ US Energy Information Administration | International Energy Outlook 2013
⁷ BP’s Statistical Review of World Energy 2013

Growth in global electricity demand and the chosen supply side capacity mix – the number of new commercial reactors – will be the major driver for the uranium market.

Table 2. Nuclear Reactor Overview

	Number of reactors	Net Capacity (GW)
Operational	435	371
Under construction	70	68
Permanent Shutdown	147	55

Source: IAEA|PRIS

Uranium is a particularly interesting fuel as its price has a relatively low impact on the price of electricity it is used to produce (Chart 9)

Table 3. Electricity Generating Capacity 15-yr CAGR (2010-2025)

Institutional forecasts	Total electricity	Nuclear	Renewables (ex-hydro)	Natural gas
US eia	2.6%	3.4%	3.7%	2.2%
BP	2.4%	1.9%	9.8%	1.9%
Exxon Mobil	2.0%	2.3%	5.6%	2.3%
Average	2.3%	2.6%	6.3%	2.1%

Source: Exxon, BP, and US eia

continent’s population does not have access to electricity⁸. The sheer geographical size and populations of these regions will place upward pressure on global energy prices as their economies expand. Therefore, the priority of the developed world will be continuing to increase domestic energy reserves, energy efficiencies, “smart” technologies, and promote conservation all in an attempt to reduce domestic energy intensity per capita over time. The IEA estimates total required investment in the global electricity industry at approximately \$16 trillion through 2035^{9,10}.

Lakeland Resources – business description

Lakeland Resources Inc. (TSXv: LK) (FSE: 6LL) signaled its desire to enter the uranium exploration business by entering a letter of intent (LOI) dated March 1, 2013 to acquire property in Canada’s Athabasca Basin. Though the transaction was ultimately unsuccessful, LK was able to acquire over 100,000 hectares through staking using a disciplined vetting process and the help of geological consultants in the North and East geographical areas of the Basin (Map 2). Through these land acquisitions, the addition of experienced technical people to the advisory board, and the continued process of optioning off previous gold exploration properties, LK has completed its transition to a focused uranium explorer.

The Company’s decision to become a focused Canadian uranium explorer was taken owing to the unique characteristics of the industry. In general, mineral projects in Canada rely on, to varying degrees, a combination of security of supply concerns and expected increasing price movements for the underlying commodity. However, the Basin hosts the highest grades of uranium in the world with substantial existing infrastructure – roads, machinery, and expertise – largely in place.¹¹ Additionally, the majority of the Basin is located in Saskatchewan; historically, a uranium mining friendly province. These factors create a stable low-cost uranium production center. Being the low-cost producer reduces the risk of the uranium price falling below marginal cost for any significant length of time due to unforeseen market supply gluts coming from either production increases out of Kazakhstan, Australia, and Africa, or adverse demand shocks.

The difficult task historically, has been locating uranium deposits in the Basin owing to their generally modest size, pod-like formations, found in the sub-surface at various depths; the recent near-surface Patterson Lake South discovery (PLS) being an exception (Table 5). Advancements in geophysics and geological understanding, and the divestment of exploration expertise from traditional uranium producers into focused junior explorers, have led to several discoveries in-and-around the Basin over the past decade, such as the

⁸ US Energy Information Administration | International Energy Outlook 2013
⁹ International Energy Agency (IEA) | World Energy Outlook 2011
¹⁰ \$ figures are assumed to be USD unless otherwise specified
¹¹ Robert Stevens, “Mineral Exploration and Mining Essentials”, BCIT, 2012

Table 4: LK Team	
Management and Directors	Position
Jonathan Armes	President, CEO & Director
Alex Falconer, C.A.	CFO & Director
Garry Clark, P.Ge	Director
Ryan Fletcher, B.A.	Director
David Hodge	Director
Roger Leschuk	Manager, Corporate Communications
Advisory Board	
Richard Kusmirski, M.Sc., P.Ge	
Thomas Drolet, B.Eng, M.Sc., DIC	
John Gingerich, P.Ge	
Zimtu Capital Corp’s interest in Lakeland Resources:	
ZC’s equity ownership is 4.647 million shares – approx. 14% of LK shares outstanding	

Source: LK

The Athabasca Basin in Northern Saskatchewan, hosts the highest grade uranium deposits in the world and substantial existing infrastructure. This is an attractive proposition for uranium exploration.

Table 5. Sample of Deposits Depths Within the Athabasca Basin	
Projects	Mean Approximate Depths (meters)
McArthur River	500-600
Cigar Lake	350-425
Roughrider	225-350
Shea Creek	650-800
PLS	50-300
LK’s Gibbon’s Creek Target**	75-250*

*includes approx. 100m of drilling into the Crystalline Basement if alteration is encountered
 **Gibbon’s Creek is currently an exploration target and should not be considered a deposit

Source: FCU & Hathor

Roughrider and PLS deposits. The global uranium exploration bonanza that occurred throughout 2003 to 2008 was only the third such cycle witnessed for the industry. It is likely, that if exploration in the Basin remains strong, our knowledge and technical understanding will continue to advance, further reducing the costs of uranium exploration and development, and improving the probability of locating discoveries (Table 15).

However, recognizing the current difficulty in finding underground uranium deposits in the Basin, LK has tried to de-risk their projects by focusing on properties that have previously received varying degrees of exploration work indicating existing mineralization and shallower target depths to the unconformity (less than 500 meters); thereby, stretching current exploration dollars further (Table 20). LK is also assembling a strong technical team, and employed Dahrouge Geological Consulting Ltd to help manage fieldwork. Jody Dahrouge has over 10 years of experience in the Basin and is a former director of Fission Energy. To date, LK has amassed a significant presence in the Basin (land claims totaling over 100,000 hectares), concentrating on relatively shallow depths to identified basement-hosted conductors as a selection criteria to maximize the total number of exploration drill holes for a given dollar amount (Map 3).

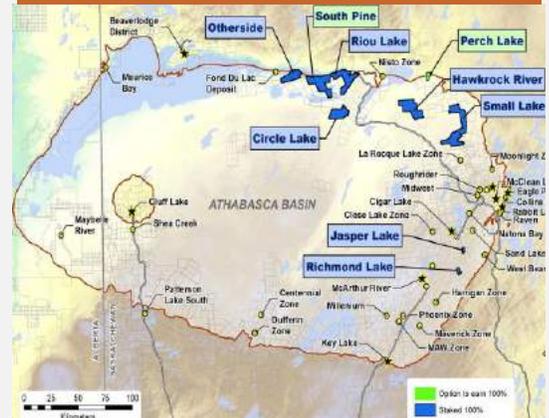
Lakeland has also focused on fostering valuable relationships. Their partnership with Zimtu Capital Corp (TSXv: ZC) will help with office administration, marketing, and future financings. The additions of uranium veterans, Richard Kusmirski and Thomas Drolet, to LK’s advisory board gives greater technical and business expertise, as well as “brand name” recognition within their respective industries. Richard Kusmirski has over 40 years of exploration experience, previously serving as Exploration Manager for Cameco Corporation, and President & CEO of JNR Resources. Thomas Drolet has been a nuclear industry insider for over 40 years and served as the head of the Canadian Fusion Fuels Technology Project (Table 4).

Historic Perspective on the Commercial Nuclear Industry – a marathon, not a sprint

Nuclear energy is a relatively new technology and did not have a material impact on the power and utility industry until the first wave of utility scale commercial reactors started to be built in the late 1960’s¹². The 20 years from 1960-80 were tumultuous for the economics and security of energy supplies that fed the founding NATO (North Atlantic Treaty Organization) members. These years saw certain foreign governments nationalize commercial oil interests, the formation of OPEC (Organization of the Petroleum Exporting Countries), the US transition to a net oil importer, subsequent oil price shocks in 1973 and 1979; and unlike today, petroleum liquids were a material component of many power grids at that time. There were also acid rain scares,

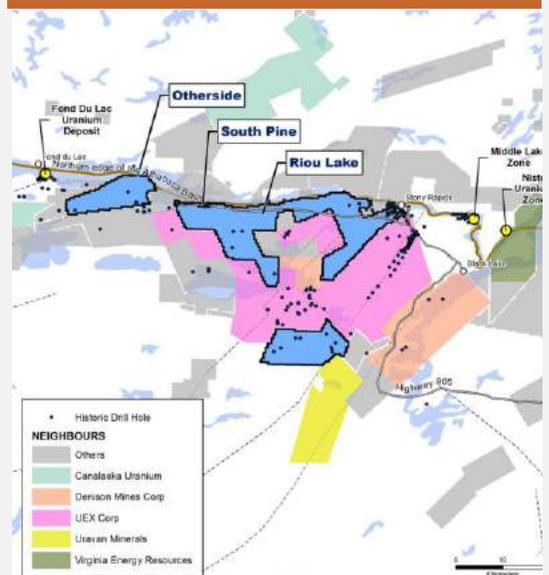
¹² International Energy Agency (IEA) | World Energy Outlook 2011

Map2. The Athabasca Uranium Basin Showing Lakeland’s Property Claims



Source: LK and Dahrouge Geological

Map 3. Lakeland’s current Gibbon’s Creek target is located within the Riou Lake property



Source: LK and Dahrouge Geological

and other environmental concerns regarding the burning of coal, resulting in increased government regulation such as the Clean Air Act in the US. Into this environment, with few supply side substitutes, emerged the commercial nuclear energy industry.

The benefits of nuclear power were clear: environmentally friendly (in terms of air quality) consistent base load electricity generation could be provided with reduced price volatility. The technology was new, so claims of eventual material cost reductions derived from a positive learning curve were believed. Plus, new prolific uranium discoveries, including Rabbit Lake in Canada's Athabasca Basin during 1968, were expanding the known uranium resources and reserves. The result for the industry was tremendous global growth, driven primarily by the US and Western Europe. Annual nuclear consumption in the US increased from 3.8 terawatt hours (TWh) in 1965 to 291 TWh in 1978; and 19.9 TWh to 172.7 TWh over the same period in what is now the European Union (EU)¹³.

However, incidents at two nuclear facilities materially altered the growth of the commercial nuclear power industry (Chart 2). Following the Three Mile Island accident in 1979, the compound annual growth rate (CAGR) for US nuclear consumption slowed. Interestingly, European nuclear consumption growth remained largely undeterred by the US experience of Three Mile Island. France, Europe's largest consumer of nuclear energy, actually increased its CAGR due to a concerted scale-up effort. This may have been due to Europe's diminished security of energy supplies and a conscious effort to become a world leader and pioneer in an important technology. However, even Europe's nuclear consumption growth slowed following the 1986 Chernobyl disaster (Table 7). The impact of these two events on the nuclear industry was material and can be quantified by the divergence between current nuclear power consumption figures versus previous forecasts originating in the early 1970's by the International Atomic Energy Agency (IAEA) and US Atomic Energy Commission (AEC). In each case, current consumption figures are only about 10% of what had been forecasted more than 30 years earlier¹⁴.

Table 6. IEA Global Forecast Generating Capacity Required by 2035 (GW)

	2010	2035		Required Increase	
		NPS*	450 S**	NPS*	450 S**
Hydro	1027	1629	1803	59%	76%
Wind	195	1102	1685	465%	764%
Solar PV	28	499	901	1682%	3118%
Nuclear	393	633	865	61%	120%

Nuclear current capacity = 371GW

*New Policy Scenario (NPS) = IEA base case capacity

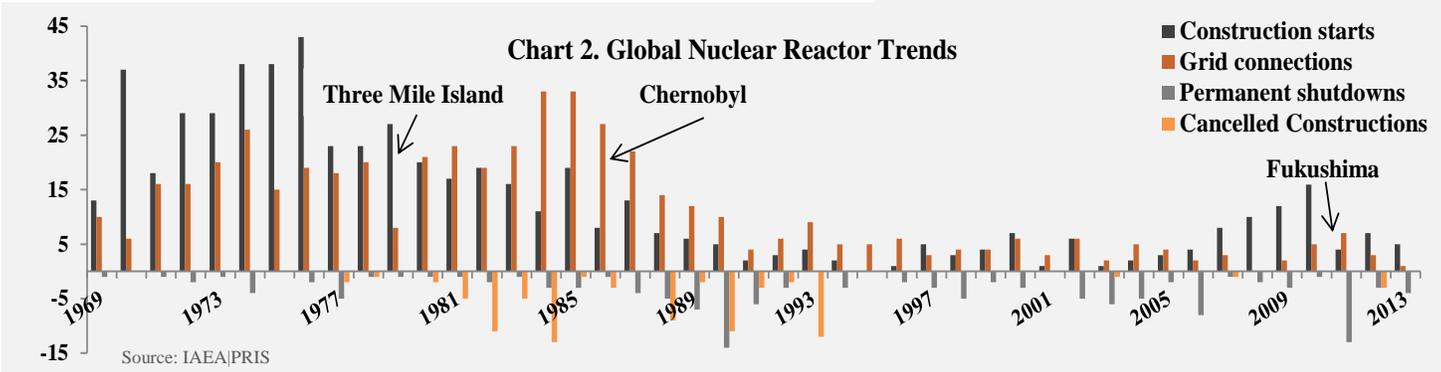
** 450 Scenario (450 S) = required capacity needed for probable achievement in reduction of global warming

Source: IEA's World Energy Outlook 2011

Table 7. Nuclear Energy Consumption CAGR

Region	Commercial Nuclear Expansion 1968-78	Post Three Mile Island 1980-85	Post Chernobyl 1987-02	Uranium Price Boom 2003-10
US	36.3%	8.8%	3.7%	0.8%
France	24.0%	29.6%	3.4%	-0.4%
Japan	53.4%	13.0%	3.4%	3.5%
Russia	32.6%	18.0%	0.9%	2.0%
Germany	36.1%	20.1%	1.0%	-2.3%
World	28.2%	15.8%	3.0%	0.7%
EU	17.5%	22.4%	2.4%	-1.2%

Source: BP Statistical Review 2013



¹³ BP's Statistical Review of World Energy 2013

¹⁴ Yellow Cake Fever, Australian Conservation Foundation, 2013, pg 17

As a result, widespread commercial nuclear programs have, until recently, been restricted to only a handful of countries. This backdrop is important because now, as then, many of the same arguments are used by proponents of a nuclear renaissance (Table 8).

Nuclear Driver #1 – the good: growing electricity needs?

Real GDP growth, a good measure of improving living standards, or lack thereof, within society is a function of secure access to cost-effective energy supplies. Continued population growth, economic development, and the mass urbanization – within China, India, and potentially Africa – of large geographical territories housing immense populations will require greater electricity generation. Certain technologies appear well poised to meet growing energy demands as economic barriers to entry for both renewables and commercial nuclear power are consistently being removed. In addition, the environment will continue to become an ever increasing concern due to continued global warming and serious health issues arising from poor air quality (Table 6)¹⁵. China’s coal consumption, currently accounting for 50% of the global total, to generate electricity and manufacture steel has produced smog that regularly plagues Beijing and is hampering the city’s development.

The future health of the commercial nuclear power industry, and therefore the uranium market, is approaching an inflection point. The benefits of nuclear electricity generation are difficult to ignore, including:

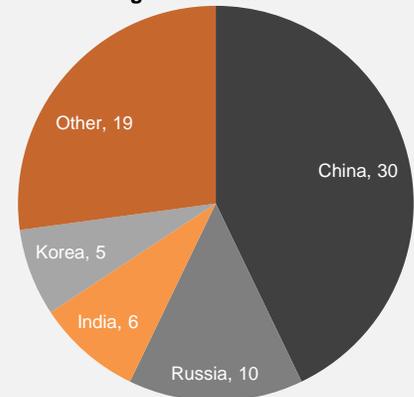
- material reduction in CO₂, SO₂, and NO_x emissions
- sustainable supply of uranium for fuel
- significant safety improvements on modern reactors
- consistent base load generation
- projected reduced overnight capital costs for new reactors

The Westinghouse Electric Company claims that their designs and technology are used in half the global nuclear reactor fleet¹⁶. Therefore, looking at the improvements of their large utility-sized third generation advanced reactor, the AP1000, is a good indication of the evolution in reactor designs. Westinghouse emphasized greater simplification – crucial for the future competitive health of the commercial nuclear industry. In economics, positive learning curves achieve reduced capital and operating costs for a perspective technology from increasing scale and efficiency. However, commercial nuclear reactors have exhibited negative learning curves; capital costs have increased due to increasing complexity of designs and regulations. To achieve greater simplification, the Westinghouse AP1000 features a smaller footprint, fewer moving parts, the inclusion of passive safety systems, and modular construction. As yet, the successes of these adaptations to reduce capital costs

Table 8. Expected Reactor Grid Connections			
	2013	2014	2015
Number of reactors	14	17	13
China	7	8	8

Source: WNA

Chart 3. Reactors Under Construction, Regional Breakdown



Source: IAEA|PRIS

Table 9. Median Reactor Construction Duration				
	Reactor grid connections 1981-1995		Reactor grid connections 1996-2012	
	Number of reactors	Median construction length (years)	Number of reactors	Median construction length (years)
Korea	10	5.25	12	4.65
China	3	6.08	14	5.15
Japan	28	3.90	8	3.82
US	48	11.43	1	N/A
Total	245	8.17	65	7.58

Source: IAEA|PRIS

¹⁵ Air Pollution, World Health Organization, http://www.who.int/topics/air_pollution/en/index.html

¹⁶ AP1000, “Ready to Meet Tomorrow’s Power Generation Requirements Today”, Westinghouse

and construction times, and appease regulators, have only marginally materialized (Table 9). However, the approach to drastically simplify the construction process and reactor operations to reduce costs makes intuitive sense – particularly modular design. The potential for reductions in capital costs may materialize as the number of new reactor builds achieve scale. For example, China is embarking on an ambitious plan to increase the number of domestic nuclear reactors. China currently has 18 operable reactors, 30 under construction, and dozens more in the planning stage (Chart 4).

Finally, projected global growth of new commercial nuclear reactors is concentrated in Asia where the regulatory environment appears less ensnared by special interest groups than developed western countries (Chart 5). Similar to the French successful nuclear scale-up that transpired between 1975-2000, and unlike the post 1979 US regulatory nightmare, China has fewer participants in the decision-making process leading to reactor builds that are completed in less time than could be achieved in the developed world¹⁷. For example, the construction and connection time for the net 1000 MWe Lingao 4 reactor in 2011 in China was 5 years. This compares favourably to the 23 years of construction and approval time for the 1123 MWe Watts Bar-1 in the USA that was finally connected to the grid in 1996. China’s nuclear consumption stood at 97.4 TWh in 2012, making up only 2% of total domestic electricity generation. China’s 10-year consistent CAGR of 14.5% for nuclear consumption illustrates methodical growth for the domestic nuclear power industry and a friendly government. There exists substantial growth potential within China.

Nuclear Driver #2 – the bad: increasing competition from renewables?

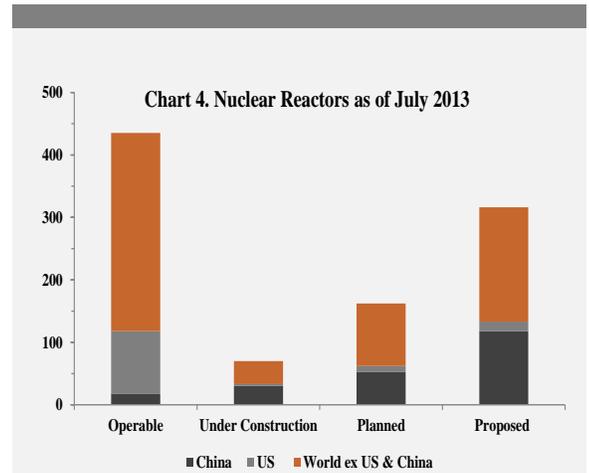
The main hurdles that have prevented many countries from adopting nuclear power as a material component of their energy supply mix have been:

1. Required regulatory environment

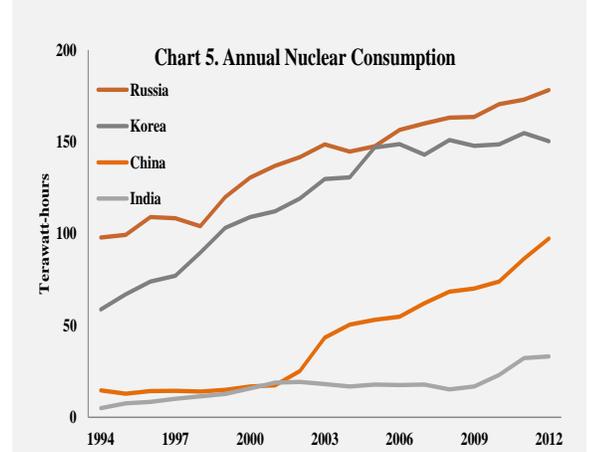
Safety is of paramount concern for a vibrant commercial nuclear industry. Countries with a history of corruption may lack the necessary oversight required to limit the risks of nuclear incident. Even developed countries with enforced legal frameworks have not been immune from inappropriate conduct eroding public trust (Chart 6). In 2012, a fake part scandal in South Korea (Korea) caused the temporary closure of two reactors¹⁸. In Japan, Tokyo Electric Power Company (Tepco) had been accused of inappropriate conduct several times regarding its stewardship of nuclear reactors. The consequences of an inappropriate nuclear safety

¹⁷ Arnulf Grubler, “The French Pressurized Water Reactor Program”, 2012, *Historical Case Studies of Technology Innovation*, Chap. 24, *The Global Energy Assessment*, Cambridge University Press

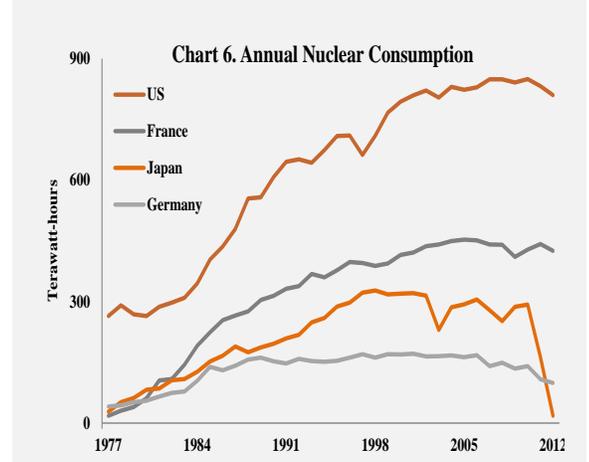
¹⁸ Kim Da-ye, “KHNP suffers from grave loss of public credibility” *Korea Times*, Sep 2013



Source: WNA



Source: BP Statistical Review 2013



Source: BP Statistical Review 2013

framework and insufficient regulatory infrastructure have become tragically apparent with the continuing Fukushima saga in Japan¹⁹.

2. Long project lead times

Multi-year construction estimates plus regularly experienced delays have historically meant nuclear power was unresponsive to resolving current energy demands, and led to dramatically increasing capital costs. The worldwide experience in building third generation advanced reactors has been mixed. It appears smaller footprints and greater design standardization have shortened construction and licensing times, though not materially so. The most recent reactor builds in both Korea and China have required 4-5 years to construct and connect to the grid, which is a slight improvement on past experience. Whereas, Finland started construction on the Olkiluoto-3 reactor in August 2005, and as yet remains unfinished with expected start-up in 2016. The US eia estimates 6-year lead times for advanced nuclear plant construction compared to 3 years or less for wind, solar, and gas-fired plants. To remain competitive with continual advancements in renewable power generation, the commercial nuclear industry must reduce reactor construction times to a similar window to minimize capital costs and maintain government support (Table 10).

3. Capital costs

Capital costs represent at least 60% of the total cost of building, operating, and decommissioning a nuclear reactor. Capital costs include all investment and expenditures required to prepare, build, and bring the reactor to operational status; and as such are a function of the weighted average cost of capital (WACC) and the time required to construct and connect to the grid. Third generation advanced reactors have yet to become competitive with fossil fuels on a capital cost basis (Table 10). Worse, the history of the commercial nuclear fleet has been littered with major construction cost overruns, sometimes 2-3 times greater than the initial budget. For example, the Capex for Finland’s Olkiluoto project are now estimated at €8.5 billion or 283% more than the initial estimate²⁰. Capital expenditure overruns may become an ever greater problem for utilities in the developed world as most have standalone credit ratings that are below investment grade, and are domiciled in jurisdictions whose domestic governments’ ability to lend support is potentially compromised by increasingly large debt burdens²¹. The PwC 2012 global survey of power and utility companies found 85% of respondents listed the ability to finance at economic rates as medium to very high risk for capital intensive projects. The recently announced UK deal to build a new commercial reactor hinged on selling a 30%

Table 10. OECD Overnight Construction Costs, 2010

Technology	Pre-financing charges (USD/kW)	Investment as share of total costs*		Construction period (years)
		5%	10%	
Nuclear	1600-5900	60%	75%	N/A
Wind	1900-3700	77%	87%	1-2
Gas	520-1800	12%	16%	2-3

*Investment includes financing but excludes non-operating liabilities

**Onshore

Source: IEA/NEA/OECD

To remain competitive with the combination of gas and renewables for electricity generation, construction of nuclear reactors will need to reduce both the required capital investment and lead time.

¹⁹ Yuriy Humber & Tsuyoshi Inajima, “Tepco Split Looms as Utility Lacks Motive to Fix Fukushima”, Bloomberg, Oct 2013

²⁰ Mycle Schneider, Antony Froggatt et al., World Nuclear Industry Status Report 2013, pg 49

²¹ Ibid, pg 58, Table 3

ownership stake to Chinese investors, illustrating how limited the UK public purse has become.

4. Insufficient domestic human capital

Operators of reactors require special knowledge and qualifications to prevent adverse situations and respond to emergencies. An often cited criticism of the Fukushima containment and clean-up effort has been the use of inadequately trained personnel²². Importing specialized workers from various countries to build nuclear reactors has been blamed for causing delays as language and cultural barriers have inhibited communication. New reactor designs have reduced both the number of moving parts and placed greater reliance on passive safety systems in an effort to minimize the risk of human error and system weak points. However, the number of potentially obsolete reactors, those built using designs that pre-date the twin Three Mile Island and Chernobyl accidents, is still greater than the number of more modern designs, increasing the risk of other nuclear incidents due to an inferior design and/or human error. The situation will take years to correct (Chart 7).

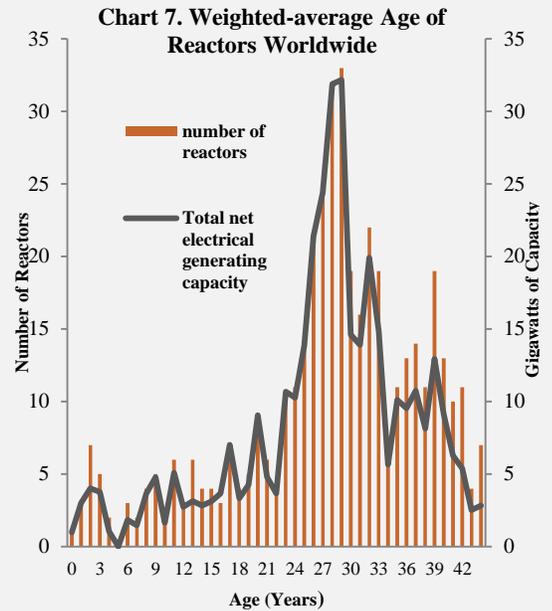
Unlike during its infancy, nuclear power does not exist in a clean energy vacuum. Today, there are other competitors that do not emit air pollution, and whose costs are falling on an annual basis illustrating positive learning curves. Continuing technological improvements for renewables, especially wind and solar, are changing the electricity generation landscape. Combined with advancements in the extraction of natural gas, renewables offer an alternative portfolio mix that is currently more politically malleable. General Electric (GE) CEO Jeff Immelt, recently stated, “some combination of gas, and either wind or solar” was the most attractive energy mix due to the increasing number of gas discoveries. Low natural gas prices were blamed as the culprit for the announced withdrawal from the US nuclear industry by the French state utility Electricité de France (EDF), the global leader in nuclear power production²³.

A survey of 72 power and utility companies in 43 countries completed by PwC in 2012 highlight some very interesting viewpoints by industry insiders. Investment in new gas generation was the most popular with 55% of survey participants identified as making material investments in the space. While, over 80% believe onshore wind and solar will not need subsidies by 2030. Between the 2Q09 (2nd quarter of 2009) to 1Q13, levelized costs for onshore wind and solar PV decreased by 15% and 50%, respectively²⁴. Whereas, global levelized costs for nuclear over the same period were flat (Table 11). The IEA expects renewables to make up 1/3 of global electricity generation by

²² Jacob Adelman, “Tepco Says Rains Causing Spikes in Fukushima Radiation Readings”, Bloomberg, 2013

²³ World Nuclear Status Report, <http://www.worldnuclearreport.org/Duke-Energy-Abandons-More-Reactor.html>

²⁴ “Global Trends in Renewable Energy Investment 2013” Frankfurt School UNEP Centre & Bloomberg New Energy Finance



Source: IAEA/PRIS

Table 11. Share of Global Electricity Generation

	Nuclear	Wind + Solar
1993-2002 average	17.2%	0.0%
2003	15.7%	0.4%
2004	15.7%	0.5%
2005	15.1%	0.6%
2006	14.8%	0.7%
2007	13.8%	0.9%
2008	13.5%	1.1%
2009	13.5%	1.5%
2010	12.9%	1.8%
2011	12.0%	2.3%
2012	11.0%	2.7%

Source: BP Statistical Review 2013

2035. In fact, 2012 marked the first year that China consumed more wind power than nuclear and became the global leader in solar investment.

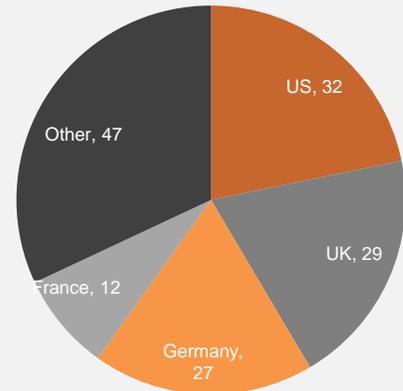
Nuclear Drivers #3 – and the ugly: Fukushima?

Following the Fukushima disaster on March 11, 2011 and the ongoing issues with containing irradiated water within the site, the Japanese government and National Regulatory Authority have made changes to safety guidelines and policy. In 2013, Japan shut down operations at the last two operating reactors. New regulatory policy will now require the support of prefectures and local authorities where the shutdown reactors are domiciled before restarting. This policy is eerily similar to additional US regulation following Three Mile Island that led to the Shoreham nuclear reactor fiasco. The Shoreham nuclear reactor was built in the 1970’s and was declared safe for operations in 1981 by the US Nuclear Regulatory Commission. However, following the incident at Three Mile Island in 1979, public opinion for commercial nuclear power soured and the Shoreham plant operators were unable to develop agreeable evacuation plans with state and local officials in New York. Shoreham was never permitted to begin normal operations and was eventually decommissioned – the total cost reaching \$6 billion. The PwC survey found 80% of the global power and utility companies list the regulatory environment as the biggest contributor to either encourage or inhibit investment. Therefore, there exists material risk that many of the 50 shutdown Japanese reactors listed as operable may never restart owing to negative public opinion and new regulation. Grant Isaac, CFO of Cameco, estimates that 35-40 reactors will eventually restart²⁵. This scenario is important as restarts of Japanese reactors are a commonly argued catalyst for rising uranium prices (Table 12).

Interestingly, Japanese reactor restarts – or lack thereof – indirectly impacts a separate factor sure to help lift uranium prices. The 20-year agreement between Russia and the US commonly referred to as “Megatons to Megawatts” is in its final year. The agreement, called on Russia to downblend 500 tonnes of weapons-grade highly enriched uranium (HEU) for use in western commercial nuclear reactors. Over the last several years this secondary supply has represented between 11-13% of global U₃O₈ demand. However, the loss of this secondary supply will now be countered by a combination of several factors. First, though the exact figures are hard to come by due to being proprietary information, global utility stockpiles are estimated to be at all-time highs, placing a ceiling on the speed of recovery for uranium prices. In addition, as previously stated Japanese reactor demands will be materially reduced, potentially displacing 20% of pre-Fukushima Japanese uranium supply into the world market. Further, production from Cameco’s Cigar Lake Project will commence shortly, with production estimated to top out at 18.1 million pounds of U₃O₈ by 2019. These headwinds make it difficult to argue for immediate material upward uranium price movements.

²⁵ Cameco Corp Presentation at the Canaccord Genuity Resource Conference, Oct 2013

Chart 8. Reactors in Permanent Shutdown Breakdown by Country



Source: IAEA/PRIS

Table 12. Global Nuclear Consumption

2010		Peak Usage	2012	
World	2768 TWh		World	2477 TWh
USA	30.7%	2010	USA	32.7%
France	15.5%	2005	France	17.2%
Japan	10.6%	1998	Russia	7.2%
Russia	6.2%	2012	Korea	6.1%
Korea	5.4%	2011	Germany	4.0%
Germany	5.1%	2001	China	3.9%
Canada	3.2%	2006	Canada	3.9%
Ukraine	3.2%	2007	Ukraine	3.9%

Source: BP Statistical Review 2013

Fukushima has also had global implications. China placed a moratorium on new reactor builds while leaders reviewed nuclear safety regulations and oversight. Though the moratorium has since ended, China has had only one reactor connected to the grid in 2013 and is now unlikely to fulfill its proposed commercial nuclear power targets. In 2012, the European Union issued a safety report on 145 reactors recommending immediate safety upgrades that would cost an estimated €10 to €25 billion, and suggested that utilities operating nuclear reactors take out liability insurance. Additional required Capex to upgrade and maintain reactors increases the likelihood of premature permanent shutdown as the existing nuclear fleet ages. This risk seems to be playing out in the US where four reactors have been, or are scheduled for, early permanent shutdown²⁶ (Chart 8). Worldwide, there are 435 reactors with a weighted average age of 28 years (Chart 9). The assumption that older reactors approaching their initial 40 year operating license will automatically have their lives extended by an additional 20 years is no longer valid.

The slower pace of commercial nuclear expansion in China, uncertainty regarding Japanese reactor restarts, and an aging reactor fleet in the US and Western Europe threatens to keep the average annual uranium spot price from again reaching the 2007 peak through 2023.

Zimtu Uranium Price Forecast – how does it compare?

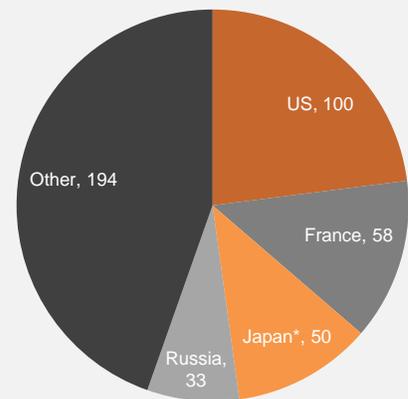
Although more than 29 countries consume some amount of nuclear energy, four countries – the US, France, Japan, and Russia – represented 63% of total nuclear energy consumption in 2010. Therefore, special attention was given to the unfolding energy policies in these markets as well as China. The future of the domestic commercial nuclear energy programs for these countries will materially impact the long term global demand for uranium.

Regression analysis was used to project average annual spot prices for uranium over the 10-year forecast period. The World Nuclear Association (WNA) listed global nuclear electricity generating capacity, and International Monetary Fund (IMF) investment and inflation rates from 1980 to 2012 were regressed over a blended annual uranium price (Table 13). The model had an R² of 83% indicating uranium prices in the long run are highly correlated to capital investment decisions to expand the commercial nuclear reactor fleet in the absence of early retirements. It is important to note that though the spot market price of uranium is often quoted to the public, the spot market represents on average only 15-25% of total uranium transactions²⁷. The vast majority of uranium transaction contracts are done using long term contracts with end users, where the spot price may or may not be referenced.

²⁶ World Nuclear Status Report, <http://www.worldnuclearreport.org/Another-US-Reactor-Scheduled-for.html>
²⁷ WNA, “Uranium Markets”, <http://world-nuclear.org/info/Nuclear-Fuel-Cycle/Uranium-Resources/Uranium-Markets/>

More than 29 countries consume some amount of nuclear energy. However, four countries – the US, France, Japan, and Russia represented 63% of total nuclear energy consumption in 2010. Therefore, the respective domestic nuclear policy for each, as well as China, will determine the long term health of the uranium market.

Chart 9. Operational Reactor. Regional Breakdown



Source: IAEA/PRIS
 *none currently in operation

Table 13. Uranium Spot Price Estimates

Annual mean	Zimtu	Analyst mean
2013	39.74	48.47
2014	48.75	57.65
2015	54.03	65.09
2016	59.85	70.90
2017	65.74	70.50
2018	69.89	N/A

Source: ZC

A fundamental analysis also leads to a similar conclusion. Depending on the discount rate used, Capex represents 60-75% of total costs throughout the life of a nuclear reactor. Multibillion dollar capital investment decisions to build nuclear reactors depends on the belief that timely construction will be completed on budget, with attractive financing – a discount rate of 5% is often cited. Unfortunately, many quasi-public utilities throughout the OECD with material exposure to building and operating nuclear reactors have seen their standalone credit rating diminish overtime, and now rely on government support to access the capital markets at economic rates to fund large scale investments. Therefore, the planned commercial nuclear expansion in Asia, especially China, is the major growth driver of uranium demand going forward, and the basis for an upward trending uranium price.

LCOE – matters of import: assumed operating life and discount rate

The US eia estimate the 2013 overnight capital costs to build a Dual Unit Nuclear Power Plant in the US to be \$5,530 per kW; whereas, the OECD found a median cost of \$4,100 per kW globally in 2010^{28, 29}. Due to long construction delays and convoluted regulatory environments, the most recent reactors builds in the OECD have and continue to incur major cost overruns. For example, the Tennessee Valley Authority (TVA) increased its cost estimate for the Watts Bar Unit 2 in the US from \$2 billion to over \$4 billion, now scheduled to be completed in December 2015³⁰.

To economically compare different sources of energy a levelized cost of energy (LCOE) methodology is useful (Table 14). Essentially, this approach utilizes a discounted cash flow (DCF) model and assumes an internal rate of return (IRR) that is equal to the discount rate. The major assumptions built into the model include:

- Grid connection date – start of cash inflows
- Operating lifespan – length of cash flows
- WACC – the discount rate used
- Decommissioning cost – required reserves

Material errors or omissions in these assumptions that affect the start and length of the cash flow period, understate the present value of liabilities, or materially change the discount rate will directly impact Capex decisions.

A joint OECD/IEA/NEA 2010 study found that at low discount rates “more capital-intensive, low-carbon technologies such as nuclear energy are the most competitive solution”; whereas, at high discount rates “coal without carbon capture equipment, followed by coal with carbon capture equipment, and gas-fired combined cycle turbines (CCGTs) are the cheapest sources of electricity”. France’s successful experience of scaling up nuclear power with

²⁸ “Project Costs of Generating Electricity”, 2010 Edition, IEA, NEA, OECD
²⁹ US eia, “Updated Capital Cost Estimates for Utility Scale Electricity Generating Plants” April 2013
³⁰ TVA, “<http://www.tva.com/news/releases/octdec13/wbn2.html>”, Oct 2013, www.tva.com

Table 14. OECD LCOE Ranges, 2010 (USD/MWh)

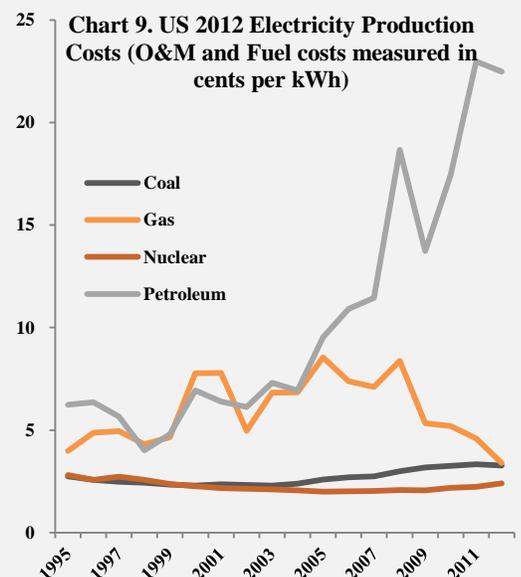
Technology*	Discount rate	
	5%	10%
Nuclear	29-82	42-137
Wind, onshore	48-163	70-234
Gas**	67-105	76-120
Coal**	54-120	67-142

*Solar not included as sample population too small
 **Includes carbon price of \$30/tonne

Source: IEA/NEA/OECD

The planned commercial nuclear expansion in Asia, especially China, is the major growth driver of uranium demand.

Given a low discount rate, nuclear is competitive with other electricity generating technologies using a levelized cost comparison.



Source: Nuclear Energy Institute

strong government support appears to suggest the study’s low discount rate conclusion is correct.

The low discount rate scenario in the study is assumed to be 5% for utilities, due to either implicit or explicit government sponsorship. We find this assumed discount rate valid in the current environment. For example, TVA, a government owned but self-financed enterprise, last issued 30-year debentures at a record low of 3.50% in December of 2012. At the time this was an average premium of 62 basis points (bps) over the 30-year Treasury bonds for the month of December^{31, 32}. With the median average annual yield of 4.52% on US 30-year Treasuries since 2000, and assuming a 50-100 bps premium, gives an approximate discount rate of 5% for TVA. Over an assumed 60-year lifespan and a 5% discount rate, the estimated Capex is approximately 60% of total costs over the life of a nuclear reactor, compared to operations and maintenance (O&M) costs representing 24%, and fuel cycle costs just 16% (Chart 9).

Importantly, the total cost breakdown over the life of nuclear reactors highlights a disproportionate relationship. The number of operating reactors generating electricity significantly influences the price of uranium. However, the price of uranium as fuel is a marginal input in the decision to generate electricity using commercial nuclear reactors.

The Athabasca Basin – epicenter for global uranium exploration

Uranium exploration expenditures in Canada have increased from C\$45 million in 1990 to C\$198 million in 2011, though much of this increase occurred after 2004 (Table 15)³³. Exploration costs in Canada adjusted for inflation (constant 2012 CAD) measured as a ratio of annual exploration expenditures per exploratory thousands of meters drilled decreased steadily from 1990 to a trough of \$389 thousand in 2005. The decline in real exploration costs probably corresponds to the increasing density of exploration and development activities within proximity of current high-grade producing mines and deposits predominantly located around the eastern edge of the Athabasca Basin (Map 2).

The eastern sections of the Basin, accounts for all current Canadian production and are home to both the McArthur River and Cigar Lake mines, the highest-grade known deposits in the world. Cameco has slated Cigar Lake production to start in 2014³⁴. The increasing density of activity helps reduce costs through two avenues:

The total generating capacity from nuclear reactors is a significant influence on the price of uranium. Juxtaposed, the price of uranium has only marginal impact on reactor generating capacity.

Table 15. Uranium Exploration in Canada

Year	Expenditures (millions of CAD)	Exploration drilling (000's of meters)	Exploration costs per meter drilled (CAD)
1990	45	66	682
1991	44	67	657
1992	46	79	582
1993	40	62	645
1994	36	67	537
1995	44	75	587
1996	39	79	494
1997	58	104	558
1998	60	95	632
1999	49	89	551
2000	34	76	447
2001	27	47	574
2002	31	78	397
2003	31	74	419
2004	44	118	373
2005	91	266	342
2006	214	424	505
2007	413	655	631
2008	409	725	564
2009	188	410	459
2010	191	317	603
2011	198	412	481
2012 (e)	185	378	489
2013 (e)	158	343	462
2014 (e)	203	405	500
2015 (e)	222	432	515
2016 (e)	244	461	530
2017 (e)	264	486	543
2018 (e)	271	496	546

Source: Natural Resources Canada (NRC)

³¹ TVA, “TVA Achieves Historically Low Cost 30-Year Financing” Dec 2012, www.tva.com

³² US Federal Reserve, <http://www.federalreserve.gov/econresdata/statisticsdata.htm>

³³ Uranium – 2011 Annual Review and Outlook, Natural Resources Canada

³⁴ Cigar Lake Project, Table 16-3, Cameco, www.cameco.com

- Existing and expanding infrastructure can be treated as a public good – roads, utilities, personnel, services, etc. can be shared reducing costs and wait times.
- Improved geological understanding of underground formations within particular zones increases the probability of successful exploration.

The median exploratory distance drilled between 2006-2011 was 418km per annum, which is almost a six-fold increase from the median 76km drilled per annum between 1990-2003. Exploration costs per meter in 2011 measured in 2012 dollars were 54% below where they were in 1990. Increased exploration in proximity to the recent large PLS discovery, a joint venture between Fission Uranium (TSXv: FCU) and Alpha Minerals (TSXv: AMW), should lead to reduced real exploration costs through the forecast period (Table 16).

Historically, Canadian uranium exploration has been correlated with movements in real prices for uranium. Regressing kilometers drilled per annum against the average annual inflation adjusted price of uranium over the period of 1990-2011 yields an R² of 77% indicating fairly robust correlation. Intuitively, this result makes economic sense as higher real uranium prices would be expected to attract financing for uranium exploration and development. Nominal exploration expenditures in Canada materially increased starting in 2004 and peaked at \$413 million in 2007, corresponding to upward price movements for uranium. We forecast exploration dollars to bottom out in 2013 before trending upward; increasing approximately 70% by 2018, following a nominal uranium price increase of 76% over the same period (Table 15)³⁵.

Our uranium price estimates remain below the median analyst estimates, though still above average extraction costs in the Basin (Chart 10 & Table 17). This will attract greater exploration efforts to the Basin as other global uranium deposits featuring marginal economics find it difficult to finance future operations. In fact, the current \$50 per pound long term price of U₃O₈ is below the psychologically important \$60 barrier that many analysts believe is required to recoup total costs for approximately 1/3 of the industry’s current global production. Though using figures from the 2011 OECD Redbook and adjusting for mining inflation, we find 25% of globally identified uranium resources unprofitable below \$60 per pound (Table 17). However, if we assume a desired profit margin of at least 20%, over half of the globally identified uranium resources are unattractive if the long term price drops below \$44 per pound. Uranium maintaining a price significantly above \$60 before 2016 will be difficult as the current global glut of uranium supplies due to Japanese reactor shutdowns will need to be worked through. As previously mentioned, over the medium term the combined affects from the ramp-up in production coming from Cigar Lake and the reduced number of operating

Table 16. Real Exploration Costs per meter Drilled (constant 2012 CAD)

Period	Absolute Change	CAGR
1990-2011	-53.9%	-3.6%
2011-2018 est	-12.1%	-1.8%

Source: NRC and ZC estimates

ZC anticipates 2013 to be a trough for Canadian uranium exploration dollars, and rebound strongly over the next five years; increasing by approximately 70% by 2018, following a nominal price increase of 76% for uranium (Table 15).

Chart 10. Annual Average Spot Price of U₃O₈ and Canadian Uranium Exploration in millions of USD



Source: Cameco, NRC, Federal Reserve, and ZC estimates

Table 17. Identified Resources of U₃O₈

Cost Ranges Adjusted for Mining Inflation per pound U ₃ O ₈				
	< \$18	< \$36	< \$59	< \$117
Australia	-	3,508.1	4,319.8	4,520.5
Kazakhstan	123.2	1,263.0	1,635.5	2,131.0
Russia	-	144.0	1,266.6	1,690.6
Canada	912.0	1,083.6	1,218.5	1,597.3
Namibia	-	17.2	678.5	1,346.9
US	-	101.7	539.2	1,227.4
Niger	14.3	14.3	1,094.5	1,158.2
World total	1,770.2	8,003.4	13,849.5	18,449.6
2013 expected reactor requirements = 169 million pounds U ₃ O ₈				

Source: OECD Uranium Red Book 2011 and ZC estimates

³⁵ Discrepancies in Canadian uranium exploration expenditures between Table 15 and Chart 10 resulting from CAD to USD FX conversion

Japanese reactors threaten to offset lost secondary supply from the end of the Megatons to Megawatts program between the US and Russia³⁶ (Table 18).

Scenario Production Analysis – no place like home

Capitulation of many uranium exploration and production (E&P) projects in high-cost jurisdictions appears only a matter of time. Both Namibia and Niger have large high-cost uranium resources that are having difficulty in the current pricing environment. For example, Australian uranium miner, Paladin, has written-down assets and posted heavy losses from their mining operations in both Malawi and Namibia.³⁷ The Basin is like no other known uranium production center in the world. Canada has over 900 million pounds of U₃O₈ that could be attractive with a current long term price potentially as low as \$22 per pound (assuming a 20% profit margin). Canada has approximately 52% of the global identified uranium resources in the lowest cost bracket as opposed to 7% for Kazakhstan, the leading global producer. In this context, Kazakhstan is surely struggling and faces difficult decisions. A material 41% of Kazakhstan’s identified uranium resources are unprofitable below an estimated \$60 per pound. Generally, as the largest producer, Kazakhstan should curtail production forcing uranium prices higher. However, a combination of increasing uranium prices as a result of reduced production from Kazakhstan would risk ceding market share to Australia. Globally, Australia has the largest share of identified uranium resources, most of which currently lie dormant waiting for higher uranium prices to become economic. Whereas, the economics of uranium production from the Basin are materially more advantageous. High-grade uranium deposits with developed infrastructure reduces the cost of extraction and ensures the Basin will remain attractive for exploration.

The IEA’s 2011 New Policy Scenario (NPS) calls for investment in new nuclear plants of \$1,125 billion between 2011-2035. We consider this our base-case scenario, and assume overnight construction costs of \$4.1 billion entirely debt financed, with an average 5-years construction period and a 5% interest rate compounded semi-annually. This gives a total average Capex of \$5.2 billion per reactor.³⁸ Under this scenario, the number of operational reactors after accounting for permanent shutdowns following a 60-year operating life, increases by 18% to 514 reactors by 2040. Assuming all secondary supplies have been exhausted, such that all reactor requirements are met through primary mining production, leads to a scenario where annual uranium production would have to increase from 150 million pounds in 2012 to 219 million pounds by 2040 (Table 18).

³⁶ WNA, Military “Warheads as a Sources of Nuclear Fuel”, <http://world-nuclear.org/info/Nuclear-Fuel-Cycle/Uranium-Resources/Military-Warheads-as-a-Source-of-Nuclear-Fuel/>

³⁷ Esmarie Swanepoel, “Paladin posts \$193.5m interim loss”, Mining Weekly Online, Feb 2013

³⁸ We assume new reactor constructions are net 1000 MW

Table 18. Uranium Production Sensitivity Analysis based on ZC Adaptation of IEA's NPS, 2011-2035

Reactor status	Number of reactors	Median global reactor requirement	Supply from downblend of HEU	Mining production est.
million pounds of U ₃ O ₈				
Currently Operable	435	171	21	150
Best Case, 2040 Outlook				
New grid connections	294			
permanent shutdowns	119			
Results	610	260	0	260
Additional U ₃ O ₈ Production Requirements				131
Growth	40%	52%	-100%	73%
Assumptions: 1) 50 Japanese reactors temporarily shutdown will restart 2) Completion of 2 Japanese reactors under construction 3) Capex per reactor falls to \$3.5 billion 4) Reactor normal operations = 60 years inc. extension				
Base Case, 2040 Outlook				
New grid connections	198			
permanent shutdowns	119			
Results	514	219	0	219
Additional U ₃ O ₈ Production Requirements				90
Growth	18%	28%	-100%	46%
Assumptions: 1) 50 Japanese reactors temporarily shutdown will restart 2) Completion of 2 Japanese reactors under construction 3) Capex per reactor remain fixed at \$5.2 billion 4) Reactor normal operations = 60 years inc. extension				
Worst Case, 2040 Outlook				
New grid connections	198			
permanent shutdowns	330			
Results	303	129	20	109
Additional U ₃ O ₈ Production Requirements				(41)
Growth	-30%	-24%	-7%	-27%
Assumptions: 1) Only modern reactors in Japan will restart 2) Germany is successful in transitioning to non-nuclear 3) Europe & US reactors close prematurely (<60 years)				

Source: IEA’s WEO 2011 and ZC estimates

The Athabasca Basin is the global low-cost uranium supplier. This factor is extremely important if the worst case scenario becomes a reality. The Basin will profit from exploration dollars transitioning out of high cost regions in Africa, Kazakhstan, and Australia.

Under the worst-case scenario, many assumptions are loosened including allowing for early reactor retirements in the US and Europe, and material secondary uranium supplies principally from phosphate production. Up until the mid 1990's, approximately 20% of US uranium demand was met as a by-product from phosphate mines.³⁹ This practice ended due to cost constraints. However, a new process called PhosEnergy has the potential to supply up to 20 million pounds of U₃O₈ annually based on current global phosphate rock production.⁴⁰ Cameco is a material investor in the technology, and PhosEnergy Limited forecasts cash operating costs of \$18 per pound U₃O₈ derived from a pre-feasibility level engineering study concluded in March 2013. If cost estimates are to be believed then the PhosEnergy Process will displace a material amount of high-cost uranium mining production. If the worst-case scenario were to materialize, annual primary mining production could fall 27% to 109 million pounds by 2040.

In conclusion, under either the best-case, worst-case, or any scenario in between, the Basin offers upside exposure to higher uranium prices resulting from strong growth in commercial nuclear energy generation, while offering important downside protection from increasing uncertainty for the industry. For this reason, exploration in the Basin will remain resilient and future discoveries in the region should command a premium – potentially rewarding properly diversified investors who stay the course.

Lakeland Resources – update Gibbon’s Creek exploration

LK recently closed a C\$1 million equity financing for exploration of the Gibbon’s Creek target located within their Riou Lake property (Map 1, 3). There exists extensive data from historical exploration conducted on the Riou Lake property (Table 20). LK is currently conducting an at-surface exploration program to better define attractive drill targets and intends to commence a 1500-2000m drill program in 1Q14. We expect Radon Ex results from the property shortly, and believe positive results will bring market awareness to the stock. We have created a speculative exploration budget based on LK’s quarterly financial statements and average Canadian uranium exploration costs (Table 21). There is potential for material cost savings while drilling due to the property’s proximity to Stoney Rapids and year round access. LK could presumably drill a total of 1700m and retain enough cash to cover 1-2 months of sales, general, and administrative (SG&A) expenses. Ideally, this would permit LK to raise additional financing for future exploration at a price above C\$0.10 on the back of positive drilling results.

-Derek Hamill
Research & Communications

³⁹ WNA, “Uranium from Phosphate”, <http://world-nuclear.org/info/Nuclear-Fuel-Cycle/Uranium-Resources/Uranium-from-Phosphates/>

⁴⁰ The PhosEnergy Process, PhosEnergy Ltd, www.phosenergy.com

Table 19 Share Information		
Symbols:	TSX-V:	LK
	FSE:	6LL
Shares Outstanding:		32.7 M
Options:		3.1 M
Warrants:		10.5 M
Fully Diluted:		46.3 M
Management, Founders, and Insiders:		40%
Market Cap (as at closing bid on 11/11/13):		C\$3.4 M
Cash* (est. as at 10/31/13):		C\$987,063
ZC share ownership		4.6 M

Source: LK

Table 20. Historic and Current Exploration Efforts for Otherside & Riou Lake Properties		
Company	Exploration Activities	Assay (best result)
Eldorado Nuclear	Boulder Prospecting	4.9% U3O8
	Soil Geochemical surveys	5-10 ppm U
	Ground Geophysics: DC resistivity Horizontal loop EM Gravity	identified 3x1 km gravity low
	Drilling	0.18% U3O8
UEX Corp	Airborne Geophysics: MegaTEM Gravity Magnetic RadioMetric	Eldorado and UEX exploration efforts costs upwards of \$3M
LK	Surface Scintillometer Prospecting	Results to follow shortly
	Radon Ex soil survey	
	Line-cutting	
	Ground DC Resistivity	
	Drilling	start expected 1Q13

Source: LK press releases

Table 21. Potential Exploration Program Size Through 1Q14 Assuming No Additional Equity Raise		
Opening cash balance (11/01/13)		\$ 987,063
Monthly expenditures	\$ 36,953	\$ (184,765)
Exploration budget		\$ 802,298
At-surface exploration activities	\$ 300,000	\$ (300,000)
Drilling budget		\$ 502,298
Cost per meter (range)	\$ 250	\$ 450
Maximum exploration drilling (m)*	2,009	1,783
Max. number of drill holes @ 150m each	13	12
Ending cash balance post 1700m drill program	\$ 77,298	\$ 37,298

Source: LK & ZC estimates

Zimtu Capital Corp. is a TSX listed company focused on creating value through new resource exploration company creation and property generation.

OUR BUSINESS MODEL:

- Build and actively invest in new resource issuers.
Listed on which exchange? TSX, TSXv, CNSX, FSE, and ASX.
- Locate and acquire mineral properties of merit and connect them with exploration companies.
Located where? Canada, USA, Tanzania, Australia, and Peru

SHARE INFORMATION:

Symbols:	TSXv: ZC FSE: ZCT1
Shares Outstanding:	11,265,487
Options:	1,414,900 (Avg. \$1.06)
Fully Diluted:	12,680,387
Recent Price:	\$0.33
52 Week Range:	\$0.28 - \$0.90

*as of October 29th, 2013

Why Zimtu?



Diversification of commodities and geography



Success with constant project generation and company building



Success with constant project generation and company building

Company Name	Symbol	Shares	Commodity
Western Potash	TSX:WPX	2,757,154	Potash
Commerce Resources	TSXv:CCE	3,756,178	Rare Metals/Rare Earths
Pasinex Resources	CNSX:PSE	10,435,500	Base/Precious Metals
Pacific Potash	TSXv:PP	1,750,000	Potash
Kibaran Nickel	ASX:KNL	714,300	Graphite
Prima Fluorspar	TSXv:PF	7,520,000	Fluorspar
Critical Elements	TSXv:CRE	1,500,000	Rare Metals/Lithium
Equitas Resources	TSXv:EQT	8,394,000	Copper/Gold
Arctic Star Exploration	TSXv:ADD	1,955,283	Gold/Diamonds
Lakeland Resources	TSXv:LK	4,647,000	Uranium
Big North Graphite	TSXv:NRT	2,603,000	Graphite
Red Star Ventures	TSXv:RSM	1,650,000	Oil/Gas

46,682,41

39 Other Public Companies in Portfolio:
18,605,973 shares

Zimtu Total Exposure:

Public Companies:
53 companies

Private Companies:
18 companies



Disclaimer and Information on Forward Looking Statements: All statements in this newsletter, other than statements of historical fact should be considered forward-looking statements. These statements relate to future events or future performance. Forward looking statements in this document include that discoveries in the Athabasca Basin should command a premium; that Lakeland can become a low cost producer of uranium; that the Radon Ex results are expected shortly and positive news would bring market awareness to Lakeland's stock; that Lakeland can drill 1700 meters and retain sufficient G&A capital, and that Lakeland will be able to raise additional cash at prices above \$0.10. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking statements. Risks include misinterpretation of data, inability to attract and retain qualified people, inability to raise sufficient funds to carry out our plans or even to continue operations, among other risks. Risks and uncertainties respecting mineral exploration companies and Lakeland in particular are disclosed in the annual financial or other filing documents of Lakeland and other junior mineral exploration companies as filed with the relevant securities commissions, and should be reviewed by any reader of this article. Despite encouraging results, there may be no commercially viable minerals on Lakeland's property, and even if there were, Lakeland may not be able to commercialize them.

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