BIOCENTRIC Business Solutions

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How Risky Are Your U.S. Assets?

"The American Economy faces multiple and significant risks from climate change." In June 2014 entrepreneur and former New York City mayor Michael Bloomberg, former U.S. Secretary of Treasury Henry Paulson Jr. and Thomas Steyer founder of Farallon Capital LLC co-chaired the first published comprehensive climate risk assessment for the United States in the **Risky Business Project** http://riskybusiness.org/. Man made greenhouse gases are accumulating in the atmosphere and will remain there for centuries. Reducing greenhouse gas emissions will not provide immediate results, however the outcomes will only get worse and the costs to business and society will increase if no action is taken. This report is a wake-up call for behaviour change. It clearly identifies specific risks to each of the U.S. regions, their potential economic impact and the severity of those risks if a "Business as Usual" environment persists. **This report is a must read for long term investors in the U.S., especially those in areas of real estate, infrastructure, agriculture, energy, insurance and public health.** Its findings include the following:

Properties and infrastructure along the Eastern Seaboard and Gulf Coast already have their financial value threatened by rising sea levels and greater coastal storm damage. Some properties with 30 year mortgages could be under water before they are paid off. Over the next 15 years the likely annual cost for coastal storms will be $35 billion. Property below sea level by 2100 is projected at $507 billion with a 5% chance that more than $700 billion will be below average sea level with another $730 billion threatened by high tide. **The Northeast faces heavy economic risks due to sea level rise as 88% of that region's population live in coastal counties in which 68% of that region's GDP is generated**.

Rising temperatures especially in the U.S. South will impact energy systems, human health, labour productivity and agriculture. Energy system efficiency will decrease as system operators struggle to cool down facilities. This In turn, will increase electricity consumption and costs as demand for air conditioning surges. **Over the next 5 to 25 years this will likely necessitate the construction of 200 new average sized power plants costing ratepayers $12 billion per year.** The Great Plains of America is expected to be the region where the largest increases in energy consumption will occur.

Workers will be less productive over long periods of time during a work day due to extreme heat**. Labour productivity in the Southeast is severely threatened by rising temperatures, specifically in construction, mining, utilities, transportation, agriculture, and manufacturing.** It is expected that the average Southeastern resident will experience one and a half to four additional months of extreme heat each year by 2100. By the end of the century, the Southwest will experience either 33 to 70 days of extreme heat a year or four additional months of days over 95 degrees Fahrenheit each year. As the nation heats up, the health of poor and elderly American citizens will decline, as they often are unable to afford air conditioning.

Over the next 5 to 25 years Midwestern and Southern farmers which are unable to adapt will likely see a decline in crop yields of more than 10%; and more than 20% if they continue growing corn, wheat, soy and cotton.

Climate change is a global phenomenon and its impact on other regions of the world may be as severe, if not more extreme. A global assessment of this kind would reveal those geographic regions at greatest risk in the near term and be of great value to international investors, planners and policy developers. **How will you reduce your exposure?**

Staying Competitive As Energy Rates Increase

According to the U.S. Energy Information Administration the industrial sector consumes about one of half of the world's total delivered energy. Energy consumption worldwide by the industrial sector is expected to grow from 200 quadrillion BTUs in 2010 to 307 quadrillion BTUs in 2040, with an average increase of 1.4% per year. As world population expands and emerging economies industrialise, energy demand and prices will increase.

In British Columbia electricity rates are increasing by 9% this year and will eventually rise by 28% over five years. The additional revenue will be invested in replacing aging infrastructure and building new power generation, in an effort to meet forecast electricity demand of between 20-35% over the next 20 years. **As of April 2014, Fortis B.C.'s gas commodity charges for large commercial customers increased by 42% from $3.272 per GJ to $4.640 per GJ.**

When the B.C. economy is firing on all cylinders it is estimated that industrial energy demand (excluding commercial & transport) consumes half of the total energy used and is fulfilled using bio-mass(46%), electricity (22%), gas (21%), coal and oil (11%).

The forest industry in the province has done a good job of becoming more self-reliant for energy. A number of companies produce their own power either with their own hydro facilities, through waste biomass (waste wood & pulp liquors) combustion cogenerating steam and electricity, and/or waste heat recovery and cogeneration. That said, a large industrial customer in B.C. such as a pulp mill, may consume the equivalent of 40,000 households in energy with one pulp and paper company alone consuming 6% of B.C.'s electricity.

Smelting, chemical and cement plants all face significant cost increases especially when electricity can account for up to 70% of a plant's operating costs. While local manufacturers will pressure utilities and the government about becoming less competitive with industry in other regions, they really need to focus on the sustainability of their business and modernise to reduce their vulnerability to energy rate hikes.

In most of the world, industrialist have seen strong growth in electrical prices. U.S. industrialists experienced a 10% decrease. The divergence is the greatest for industrial prices of natural gas **According to the International Energy Agency's 2013 World Energy Outlook wholesale gas prices have increased in all the regions of the world except for North America**. Industrialists in the U.S. and Canada pay prices comparable to those of the mid to late 1990s, while European industry pay prices at 2008 levels in real terms**.** Japan and Korean industrialists pay the steepest prices between 26% and 33% above their 2007 levels.

Energy efficiency as a competitiveness factor is growing over time with energy prices and energy intensity driving real unit energy costs. **In North America, energy intensity in industry as a whole has only slightly decreased.** Rising energy costs can drive industrial innovation and modernisation to remain competitive with other economies. Some options include the following:

1) I**mproving energy efficiency.** B.C. Hydro lists numerous energy efficiency strategies at:
https://www.bchydro.com/powersmart/business/technologies-equipment.html
Solutions range from changing lighting and cleaning HVAC components, to maintaining air compression systems and improving power quality and harmonics. Improving energy efficiency can reduce the costs of annual power bills and provide the funds to undertake more daring projects which may eventually take your business off the grid.
Energy efficiency incentives are listed by province at:
http://www.nrcan.gc.ca/energy/funding/efficiency/4947

2) **Optimizing distribution of products and reducing transportation costs.** Useful strategies include improving forecast accuracy, incorporating supply chain logistics with product lifecycle management, and rethinking supply chain configurations. Transportation costs can be reduced by shifting to different modes of transportation; or to trucking equipment that use hybrid/electric power plants, continuously variable transmissions and are more aerodynamic.

3) **Adding value to your existing products.** Two options that achieve this and reduce your product energy footprint include recycling materials, and using less expensive and more sustainable packaging.

By choosing sustainable alternatives, business can survive and thrive in a world of increasing competition and energy prices.

We help business plan for the future and profit naturally

When we can be of service, please contact Chris at **604-328-7253** or at **chris@biocentric.ca**