



Betsy Thibaut Stephenson,
on behalf of **Lighthouse
Resources, Inc., USA,**
discusses connecting the
world's largest coal market
with the largest supply.

TELLING THE FULL STORY

Economic fundamentals notwithstanding, sometimes supply and demand do not tell the entire story.

Case in point: Asia's growing population and economic development have led toward a sky-rocketing need for energy. The demand for energy in Asia is so high that all energy sources – oil, gas, nuclear, renewables and coal – must play a role in Asia's future.

But for some countries in Asia, demand only tells part of the story. Energy vulnerability – and aggressive ways to thwart it – are at the heart of energy strategy and economic policy. Japan is the third largest economy in the world, yet it has an energy self-sufficiency ratio of 7.4%, meaning that it could only meet 7.4% of its power needs using its own resources. Similarly, South Korea is the eleventh largest economy in the world, and it has a self-sufficiency ratio of 18.9%. By comparison, the US is 92.2% energy self-sufficient, while the UK is 65.8%.

Securing energy sources, including coal, amid growing competition for resources is of particular concern for countries like these. The stark reality is that Japan has less than one month of in-country reserves for 77% of its electricity supply at any given time. This vulnerability is a powerful driver for energy, economic, and even national security choices. US coal is an important part of



Figure 1. The Decker mine by the Tongue River reservoir in Montana.

Japan's energy mix because it provides greater security and stability of supply at an economical cost.

"When it comes to energy, many Asian countries must have a very forward thinking, long-term strategy," said Michael Mewing, General Manager of Marketing, Lighthouse Resources, Inc. "They must incorporate technology, energy efficiency programmes and a highly diverse portfolio of sources from reliable trading partners to power their economy. And coal will be an important part of the energy mix for decades to come."

US supply

Employing advanced technologies and using responsibly sourced coal are critical for keeping coal in the global energy mix, and the US is ready and able to help meet this demand. According to the Energy Information Administration (EIA), the US leads the world with over 260 billion short t of recoverable coal reserves – 28% of total global reserves and 50% more than Russia, which possesses the world's second largest reserves. Yet, historically, the US supplies less than 5% of the Asian energy imports, and less than 1% of the coal used in Asia.

Coal from the Western US – specifically the Powder River Basin in Montana and Wyoming – is an attractive choice for Asia because of its low extraction cost, efficient delivery infrastructure and competitive shipping routes. Furthermore, its consistently high quality, with little fluctuation in specifications, fits the unique requirements of cutting-edge IGCC power plants that have increased efficiency and reduced CO₂, when compared to conventional power plants.

"From a supply standpoint, the US is in a unique position," explained Mewing. "The US can offer decades of low cost energy, which not only meets immediate demand, but also enables countries to lay the foundation to transition to technologies of the future."

The US Geological Survey has reported a total of 162 billion short t of recoverable coal resources in the Powder River Basin. Of that total, an estimated 25 billion short t could produce 50 years of resources at or

below the current sales price. At current prices, the rail and shipment costs to Asian destinations are economical.

Incentives for the US to export coal

"It is hard for most Americans to fully grasp the concept of energy vulnerability experienced by our Asian allies. If the US were to turn away energy from other countries, we would still have the ability to meet virtually all of our energy needs with resources and technology here at home," said Everett King, President and CEO of Lighthouse.

Still, the US has powerful incentives for increasing coal exports to Asia: doing so would spur US domestic economic growth, help address the trade deficit and take strides toward a national objective of energy dominance.

Energy exports are an essential part of the overall US economy, contributing approximately 10% of the nation's annual real GDP growth from 2006 - 2013. For every million short tonnes of US coal exported, an estimated 1320 jobs are created. Expenditure on downstream transportation services related to coal exports supported another 8850 jobs at transportation companies.

US federal regulations require that those who extract minerals, such as coal, from federal lands must seek maximum economic recovery. In the Western US, coal production and export is a cornerstone of the economy: Wyoming has received more than US\$2.2 billion in coal lease bonus bid dollars since 2003. The money has been used to fund schools, highways and community colleges across the state. Coal mining companies remit taxes, royalties and fees to all branches of government: federal, state and local. Coal's estimated contribution to Wyoming alone in 2016 was just over US\$1 billion. In 2015 in Montana, coal sales generated nearly US\$115 million in federal and state revenue, much of which is directed to schools, state parks, libraries and local infrastructure. Montana's opencast mining industry furnishes some of the highest paying and most sought-after jobs in the state, paying an estimated payroll total of approximately US\$100 million in 2017.

Additionally, exporting coal can also make a meaningful dent in the US trade deficit: Japan alone imports 190 million tpy of coal. The proposed Millennium Bulk Terminals-Longview (MBT-Longview) in Washington State has the capacity to ship 44 million tpy, which – at current prices – would generate US\$2.85 billion in annual sales.

"Robust US coal exports position our country as a smart, strategic leader on energy, while providing direct economic benefits here at home," added King. "The demand for US energy, including coal, is real, and shipping it abroad is more than a business opportunity; it is fulfilling our obligation as a global leader to ensure our allies have reliable energy supplies."

In pole position

Lighthouse Resources recognises that coal has to be part of the world's energy diet for some time, and that coal from

the Powder River Basin is an ideal fit for America's Asian allies.

"Access to reliable, dependable energy is something that every individual in the world should have, something akin to a basic human right," observed King. The company's business strategy is grounded in meeting demand from the Asia Pacific region by supplying the product that they seek.

In the Powder River Basin, Lighthouse owns the Decker mine in Montana and a 50% share of Black Butte in Wyoming. With 1 billion t of reserves and resources, Decker is home to some of the highest energy coal in the Powder River Basin. Black Butte has 70 million t currently under lease and additional reserves are available.

Of course, Lighthouse is not alone. Other coal suppliers in the Western states also have product that is desired by the Asian market, but they are unable to transport it there because of the lack of port capacity. Over the past eight years, there have been seven proposed coal export terminals along the Pacific Coast. These ports have been opposed by California, Oregon, Washington and others that are trying to stop the development of fossil fuel export infrastructure on the Pacific Coast. But one facility – Lighthouse's MBT-Longview – is committed to fighting for the right to build a world-class facility that will immediately and directly benefit the US and Asia alike.

MBT-Longview is a deepwater port with a proposed capacity of 44 million tpy. It has an existing aquatic lease with the State of Washington that allows coal and other commodities to be handled across three docks, and it is served by BNSF and Union Pacific railroads.

A positive track record

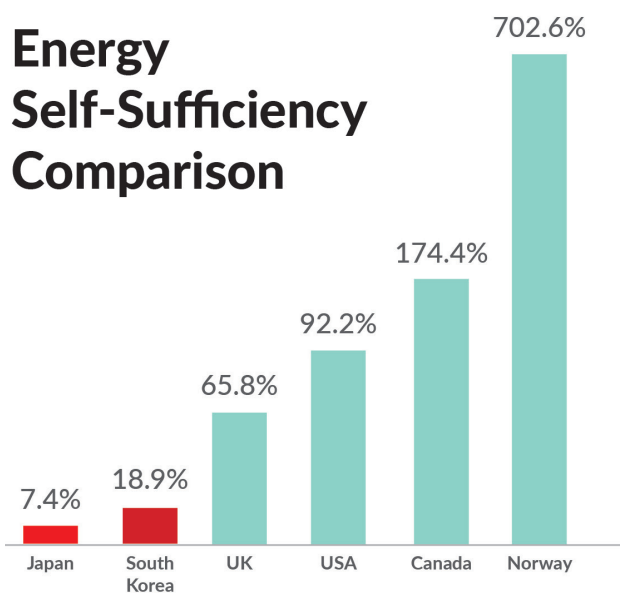
These days, endeavours that have a rock-solid business, legal and regulatory basis are even stronger with a stewardship plan. "When it comes to extraction, we meet or exceed safety protocols, policies and procedures," says King. "And we are not cutting down forests or digging holes and walking away."

The company has spent millions of dollars to remediate the land, and Lighthouse subsidiaries were first to get release from reclamation bonds from Wyoming. Additionally, Decker has gone over six years and 1.8 million man-hours without any lost time accidents.

The company has a huge stake in returning its sites to their original condition. "With our two mines, we have pledged millions to reclaim the land and protect it," explained Darin Adlard, Lighthouse Vice President of Finance.

For the export terminal in Longview, MBT-Longview has been cleaning up the existing site; an aluminium processing facility that has been decommissioned for years. It worked with the Washington State Department of Ecology and Southwest Washington Clean Air Agency to remove an estimated 100 000 t of green petroleum coke using strategies to control dust and ensure

Energy Self-Sufficiency Comparison



Source: Japan Energy 2017, Ministry of Economy, Trade and Industry, Agency for Natural Resources and Energy

Figure 2. Energy self-sufficiency comparison.

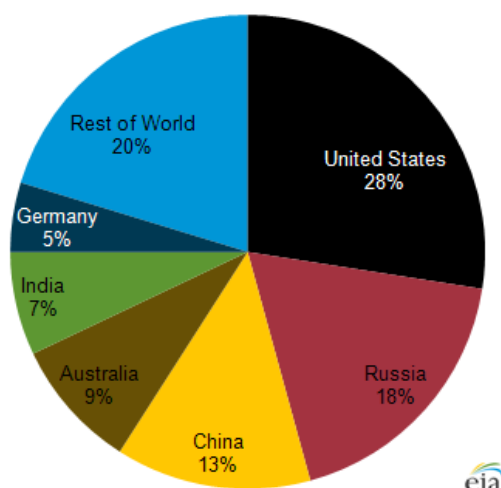


Figure 3. Global share of recoverable coal reserves.

environmentally sound transport and disposal. It safely dismantled an estimated 4500 ft of unpermitted conveyors around the site, and turned over an estimated 820 t of steel and aluminium for recycling.

Overcoming local politics

Despite Lighthouse's stewardship and responsibility, as well as a compelling case for US exports to Asia, the State of Washington has delayed and denied key aspects of the MBT-Longview site approval to demonstrate its opposition to coal.

For example, the state's own findings show that exports shipped through Longview would decrease global carbon emissions by displacing mining performed in other parts of the world with more environmentally friendly US coal mining conditions. Ignoring this important finding, the Washington Department of Ecology claimed MBT-Longview would cause significant adverse effects.

Ecology's own study shows that supplying US coal to the Asia Pacific market is a net benefit to worldwide greenhouse gas emissions.

Thus far, Lighthouse has spent six years and millions of dollars as part of the unprecedented and expanded regulatory and permitting process to develop the port, and it is not giving up. Because the law and federal policy are on its side.

The commerce clause of the United States Constitution gives Congress the authority to regulate interstate commerce as a means to prevent economic battles between states. In a federal lawsuit, Lighthouse contends that the State of Washington has illegally leveraged local regulations to unilaterally restrict interstate commerce.

The states of Wyoming, Montana, Kansas, Utah, South Dakota and Nebraska filed a joint amicus brief in support of Lighthouse, pointing out that the case has broad implications for the export of commodities that are important to many states. Tim Fox, Attorney General of Montana, argued: "Today it is coal, tomorrow it could be natural gas or non-organic produce. The interests of interior states in developing foreign trade are now subject to the barriers erected by the policy whims of states that control access to international markets through their ports."

Furthermore, Fox and Peter K. Michael (Attorney General of Wyoming) are together on the record saying: "Washington State obviously does not have the jurisdiction to regulate environmental issues in Montana and Wyoming."

Lighthouse is supporting proposed federal legislation, appealing to Washington, D.C. lawmakers to enact

regulatory and permitting reform as a means to strengthen the competitiveness of US trade.

If successful, MBT-Longview can unlock US coal exports and increase the annual value of US exports by more than US\$2.5 billion, which would significantly reduce the US trade deficit and provide US allies and trading partners with a reliable, diverse and secure supply of energy.

A path to the future

Lighthouse remains undeterred in its conviction that Powder River Basin coal will be a meaningful part of the Asia Pacific energy mix for the foreseeable future.

"The local officials who have leveraged government procedures to slow the development of key export infrastructure are enforcing political and personal choices outside the bounds of law," said Michael Klein, Lighthouse's General Counsel. "We have successfully and thoroughly completed an environmental review and the project should move forward, but the State of Washington continues to stretch, bend and contort the rules to find new ways to prevent us from operating. This cannot and will not stand."

To enhance US competitiveness, spur economic growth, foster well-paying jobs and enhance America's position of global energy dominance, the US is taking steps to improve the rules and regulations that dictate US trade and infrastructure. Permitting reform and clarity on Constitutional provisions around commerce will individually and collectively ensure that allies such as Japan and South Korea can meet their need for diverse energy sources by enabling access to US coal. 