



Leading change, powered by synergy

2016 ALLETE PROFILE



ALLETE Corporate

Employees: 244
Headquarters: Duluth, MN

ALLETE is an energy company rooted in northern Minnesota but expanding into other areas across the United States. In addition to its two utilities, Minnesota Power and Superior Water, Light and Power of Wisconsin, ALLETE owns ALLETE Clean Energy, U.S. Water Services and BNI Energy. ALLETE also has an 8 percent equity interest in the American Transmission Co.

ALLETE Clean Energy

Employees: 70
Headquarters: Duluth, MN

ALLETE Clean Energy leverages industry knowledge and innovation to bring clean energy to customers across North America. Operating independently of Minnesota Power, ALLETE Clean Energy pursues projects utilizing wind energy, hydropower, biomass and other new technologies.

BNI Energy

Employees: 170
Headquarters: Bismark, ND

BNI Energy is the parent company of BNI Coal. BNI Coal operates a lignite mine near Center, North Dakota. Two electric generating cooperatives, Minnkota Power and Square Butte, consume virtually all of BNI Coal's lignite production under agreements extending through 2026.

Minnesota Power

Employees: 950
Headquarters: Duluth, MN

Minnesota Power provides electric service in a 26,000-square-mile region of northern Minnesota rich with mineral deposits and timber. Minnesota Power serves about 144,000 customers, 16 municipalities and some of the largest industrial customers in the United States.

Superior Water, Light & Power

Employees: 85
Headquarters: Superior, WI

Superior Water, Light and Power has about 15,000 electric customers, 12,000 natural gas customers and 10,000 water customers. The natural gas utility connects to two interstate gas pipelines, providing for competitive rates and enhanced system reliability. SWL&P uses Lake Superior as its water source.

U.S. Water

Employees: 420
Headquarters: St. Michael, MN

U.S. Water Services is an integrated water management company, serving a growing and diverse mix of industrial and commercial customers. It serves approximately 4,000 customers in the United States and Canada, providing integrated water management solutions that reduce water use, save energy and improve efficiency.

ALLETE is leading change and is more sustainable than ever before

Our people, leadership and culture have shaped ALLETE into an organization with the confidence to embrace change and drive innovation while remaining committed to customer service and core values. They're how the company has fashioned its two regulated utilities, Minnesota Power and Superior Water, Light and Power, along with its investment in the American Transmission Co., into a strong, stable foundation that provides consistent earnings. This foundation extends synergies to our complementary businesses—ALLETE Clean Energy, U.S. Water and BNI Energy—to build sustainable growth into ALLETE's future. While each of these businesses carries unique qualities, the synergies between our core businesses and complementary growth platform have resulted in an energy company that is stronger and more agile in responding to asymmetrical changes that are becoming more common in today's business environment.

We are capitalizing on the emerging environmental landscape and helping to forge a cleaner energy future in North America, looking for opportunities in energy and water to expand the company's footprint, and supporting positive relationships with all of our customers and stakeholders. We believe in the nexus of energy and water and the opportunity for investment in even more sustainable water-energy solutions and growth for ALLETE.

Thank you for your interest in ALLETE. We look forward to another year of financial and operational success while assuring the security, comfort and quality of life of those who depend on us.

Sincerely,

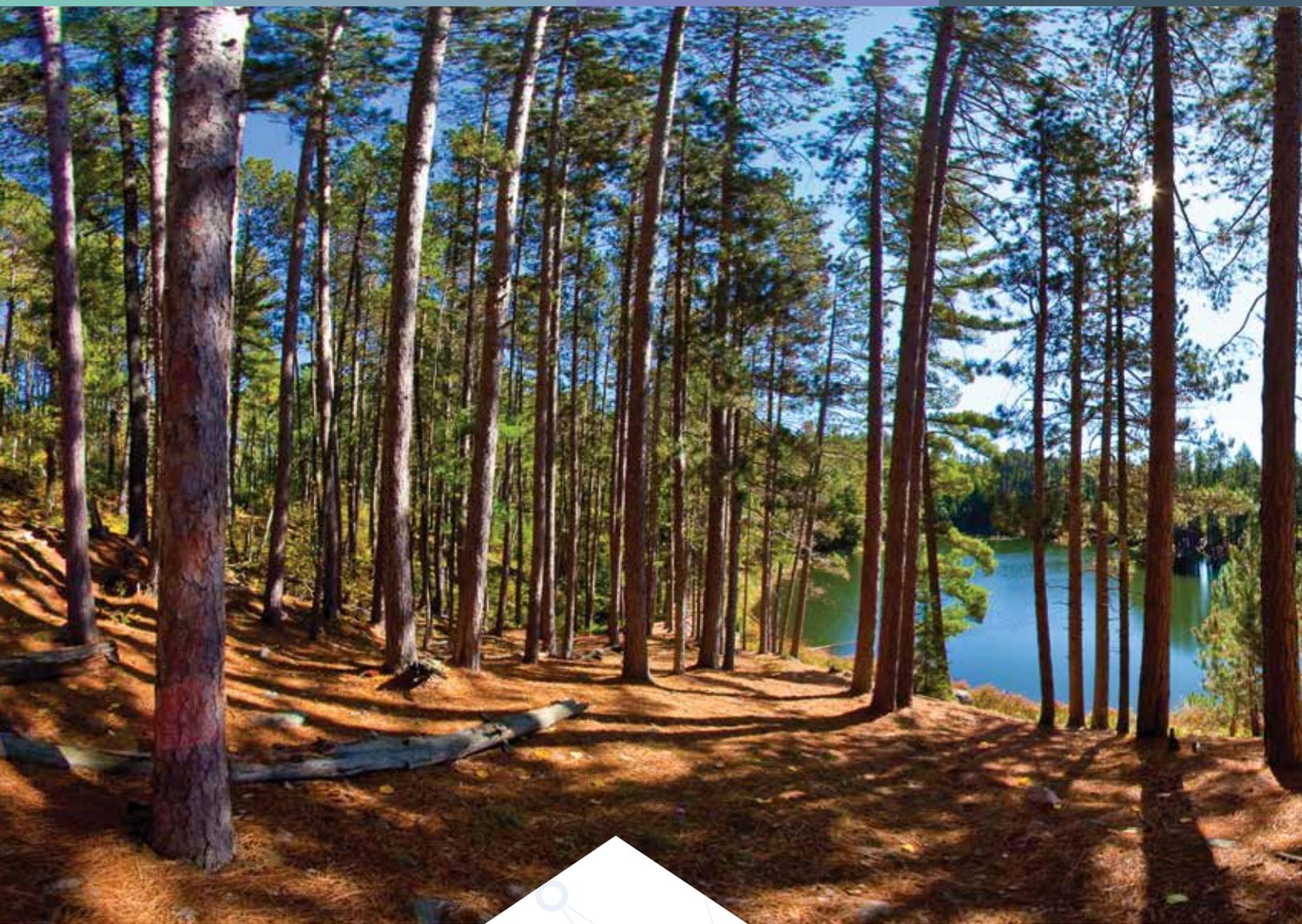


Alan R. Hodnik, ALLETE chairman, president and CEO

Financial Snapshot (12/31/15)

- Dividend yield: 3.97%
- 52 week price range: \$45.29-\$59.73
- Debt to capital: 47%
- Market capitalization: \$2.5 billion
- Gross revenue: \$1.5 billion

Forging a cleaner energy future



Smart, strategic investments to reduce emissions, add renewable energy and build transmission are among the ways ALLETE is transforming the energy landscape.

Environmental stewardship is a core value of ALLETE. We're reducing emissions and adding renewable energy to help protect the air and water in places like pristine Bear Head Lake State Park, just south of the Boundary Waters Canoe Area Wilderness in northern Minnesota.



In the past decade, Minnesota Power has invested more than \$600 million to cut emissions across its system.

Mercury
reduced

90%

Sulfur, nitrogen oxide
and fine particulates
reduced

70%

Through wise investments, creativity and productive partnerships, ALLETE is taking steps to shape a more sustainable energy future. Together, ALLETE Clean Energy and Minnesota Power own and operate more than 1,000 megawatts of wind energy at facilities in Minnesota, North Dakota, Iowa, Oregon and Pennsylvania. Minnesota Power is poised to break ground later this year on an international 500-kilovolt transmission line that will deliver sustainable hydroelectricity from Canadian reservoirs to customers in Minnesota. Completion of a major emissions-reduction project late last year makes Boswell Energy Center among the cleanest coal-fired power plants in the nation.

While the U.S. Supreme Court's recent stay of the federal Clean Power Plan has resulted in some uncertainty, it is unlikely to stop the shift toward sustainability or the accompanying opportunities. *EnergyForward* and other steps taken at ALLETE's subsidiaries have positioned ALLETE well to meet societal expectations for cleaner energy and water conservation while delivering value to shareholders. ALLETE will continue to look for clean energy solutions via ALLETE Clean Energy and water resource and conservation solutions through U.S. Water Services. Minnesota Power will continue to work with stakeholders to develop the state of Minnesota's implementation strategy under the pending federal regulation.

EnergyForward powers ahead

In three short years, *EnergyForward*, Minnesota Power's resource strategy, has made a dramatic mark on the company. This road map to a cleaner energy future includes more renewable energy, less coal, the addition of natural gas and a commitment to help customers be even more energy efficient while continuing to deliver safe, reliable and affordable electric service. Together, these efforts will result in a balanced power supply that is one-third renewable energy, one-third natural gas and one-third coal.

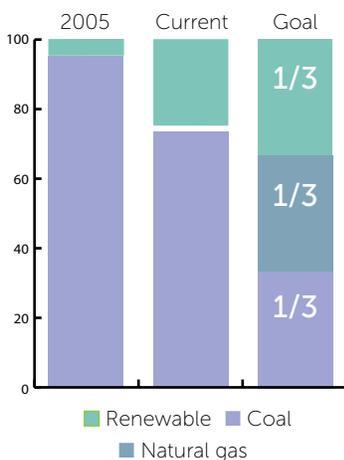
The successful execution of this strategy is playing out in multiple ways. As a result, Minnesota Power met the state's renewable energy standard of providing 25 percent of total electrical generation from renewable sources by 2025 a decade early. More than 25 percent of the utility's applicable retail and municipal energy sales were supplied by renewable energy sources in 2015 and Minnesota



Fields of sunflowers surround many of the 165 wind turbines at the 500-megawatt Bison Wind Energy Center near Center, North Dakota.

Power expects that to grow to about 30 percent in 2016, nearly meeting its own *EnergyForward* goal of one-third renewable energy.

How we are moving *EnergyForward*:



Some recent highlights related to *EnergyForward* include:

Utility-scale solar and community garden

Plans to install a 10-megawatt solar array at Camp Ripley received the go-ahead from the Minnesota Public Utilities Commission. The solar array on the base in central

Minnesota is Minnesota Power's first utility-scale solar project and the largest solar project on any National Guard base in the nation. The \$30 million project will help Minnesota Power achieve about one-third of its requirement under the state's Solar Energy Standard.

Construction is expected to begin in May and continue through summer with the project generating power by November. The array will cover about 80 underutilized acres at the Guard training facility near Little Falls, Minnesota.

The project is part of a broader partnership between Minnesota Power and the National Guard. In an agreement signed in 2014, Minnesota Power and the Minnesota National Guard outlined plans for identifying ways Camp Ripley could reduce its energy use and provide enhanced energy security for the military site.

In addition to the utility-scale project at Camp Ripley, Minnesota Power also announced plans for a community solar garden that is anticipated to be producing power by the end of the year. The solar

garden will be constructed in two locations—a 40-kilowatt array on company-owned land in Duluth, Minnesota, and a 1-megawatt array on a still-to-be-determined site in northeastern Minnesota. Both arrays will combine to supply generation for solar garden subscribers.

Adding natural gas generation
EnergyForward calls for the addition of 200 to 300 megawatts of natural gas, which has about half the carbon dioxide emissions of coal. Minnesota Power is reviewing a wide range of proposals, including a "self-build" alternative, for a natural gas-powered generating plant. The cleaner and more flexible natural gas generation is expected to be added within the next decade.

Return to generation at Thomson Hydro

Hydropower is an important component of *EnergyForward*. When the historic flood of 2012 knocked Thomson Hydro offline, there was little doubt that the heart of Minnesota Power's 120-megawatt hydroelectric system would be repaired and again produce renewable electricity.



Solar panels similar to these will be erected at Minnesota Power projects at Camp Ripley in central Minnesota and at a community solar garden in northeastern Minnesota.

The generating units at Thomson Hydro Station returned to full production in 2015 after repairs to the 109-year-old facility were completed. Thomson was damaged in historic flooding in 2012.



Thomson returned to full production at the end of 2015 after more than three years and \$90 million to restore and repair the 109-year-old facility. At 70 megawatts, it is Minnesota Power's largest hydro generating station. In addition to making repairs caused by the flooding, Minnesota Power took advantage of the outage to complete other improvements that have positioned the station along the banks of the St. Louis River in scenic Jay Cooke State Park for another century of service.

The reconstruction and improvements included rebuilding the forebay embankment, replacing most of the electrical infrastructure, inspection and cleanup of the six turbines which sat underwater for several weeks, inspection and refurbishment of the massive pipes that deliver water from the forebay to the powerhouse, and replacement of the gates that control water flow from the reservoir. ■

Boswell 4 project cuts emissions

Boswell Energy Center's 585-megawatt Unit 4 is among the cleanest and most efficient generating units in the nation following completion of a major environmental upgrade project at the plant in Cohasset, Minnesota. The upgrade at Minnesota Power's largest and newest generating unit took three years to complete, and is reducing mercury emissions by 90 percent and also significantly reducing emissions of sulfur dioxide and particulates, meeting all state and federal regulations.

Total cost of the retrofit was approximately \$240 million, and at the peak of construction the project employed about 600 workers.

The Boswell 4 project is the capstone to an emissions-reduction initiative at the company that began in 2006. In the past decade, Minnesota Power has invested more than \$600 million to cut emissions across its system. The utility has reduced mercury emissions by

90 percent while lowering sulfur, nitrogen oxide and fine particulates by more than 70 percent compared with 2005 levels. As the massive Unit 4 project was wrapping up in November, the Minnesota Pollution Control Agency recognized Minnesota Power for its leadership in reducing mercury emissions.

Total cost of the retrofit was approximately \$240 million, and at the peak of construction the project employed about 600 workers.

Although coal-fired generation remains an integral component of the *EnergyForward* resource strategy, Minnesota Power is planning for a smooth transition away from its smaller coal units. One unit at Taconite Harbor on Lake Superior's North Shore ceased generation last year, and economic idling is planned for the two remaining units later this year. The units will be available for restart



Employees and contractors worked safely to complete a major emissions-control project at Boswell Unit 4. A new 25,000-square-foot building houses a nine-module Alstom NID system that removes mercury, sulfur dioxide and particulates.

to address reliability or system emergency needs until 2020, when all coal operations at the plant will cease. Future options for Taconite Harbor are being explored. ■

A route for the Great Northern Transmission Line

An international transmission line to bring hydropower from Canada to the Upper Midwest cleared a major hurdle in 2016 when the Minnesota Public Utilities Commission granted a route permit to Minnesota Power. The Company is developing the Great Northern Transmission Line, which will deliver renewable hydroelectricity from a new generating station and dam now being built by Manitoba Hydro in northern Canada.

The route permit, among the most important regulatory decisions the project requires, comes after years of outreach to landowners and other stakeholders and comprehensive agency review. The

500-kilovolt line will run about 224 miles from the U.S.-Canada border to a Minnesota Power substation on the Iron Range and pass through Roseau, Lake of the Woods, Koochiching and Itasca counties in Minnesota. It will provide 883 megawatts of capacity, of which 383 megawatts will be used to deliver hydropower purchased from Manitoba Hydro to serve Minnesota Power's customers.

The total cost of the project is estimated to be between \$560 million and \$710 million. Construction is expected to get underway in 2017 with the line completed by 2020.

On the Canadian side, Manitoba Hydro has filed its environmental documents and final preferred route with provincial regulators as part of the process for securing a license for the transmission line in Manitoba.

The Great Northern Transmission Line will allow Minnesota Power to creatively connect two renewable resources by balancing the intermittent wind energy generated at its Bison wind farm in North

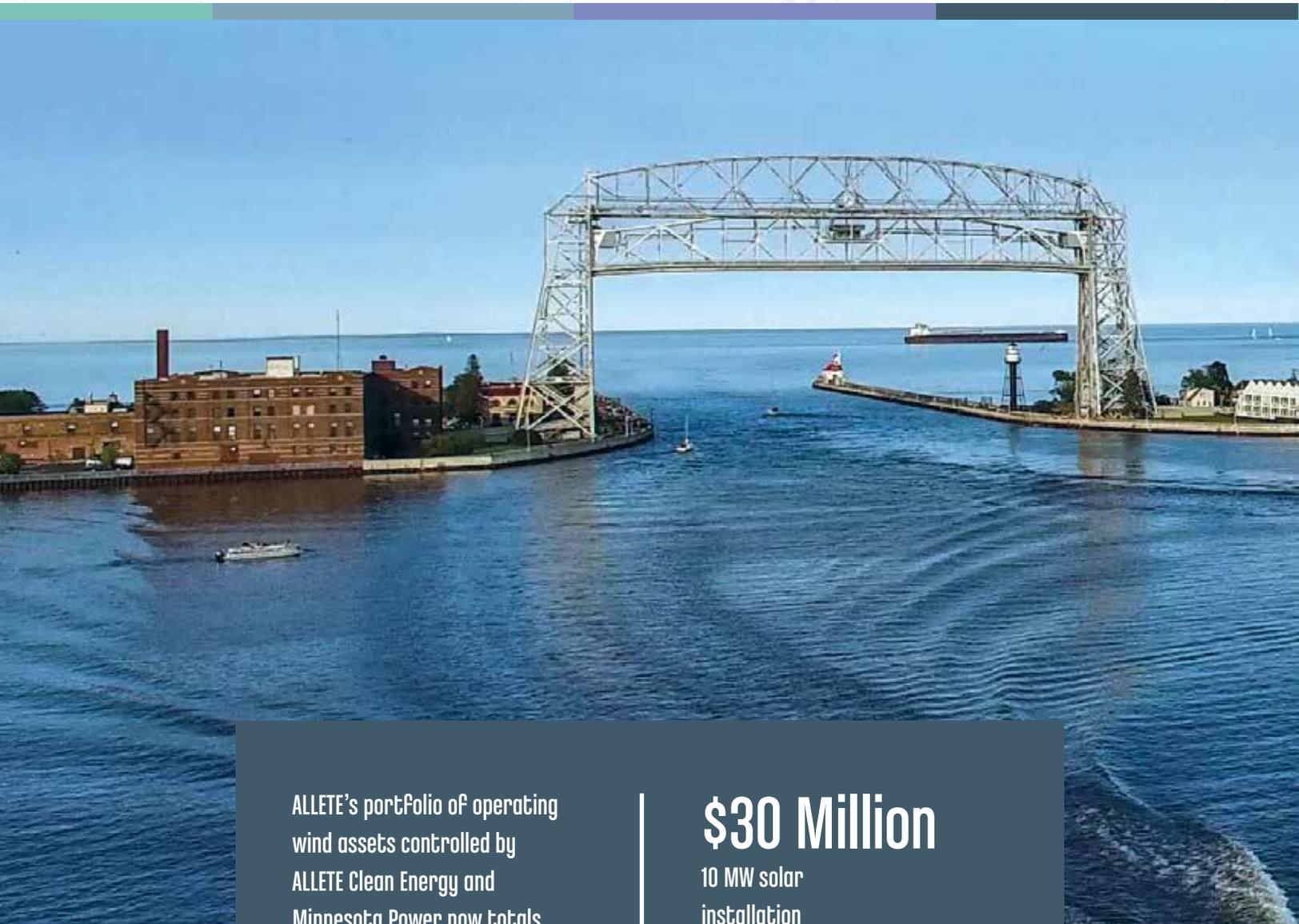
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Dakota with the dispatchable, baseload hydroelectric power of Manitoba Hydro's system of dams and reservoirs in Manitoba. Under power purchase agreements between the two utilities, Minnesota Power can store its hydropower purchases on windy days and then tap into its account when winds are calm. ■



The route for the Great Northern Transmission Line passes through four counties in northern Minnesota.

The HHL Amur carries a load of wind turbine blades past the Duluth Aerial Lift Bridge for unloading at the Port of Duluth-Superior. The blades were then loaded onto trucks bound for ALLETE Clean Energy's Thunder Spirit wind development in North Dakota.



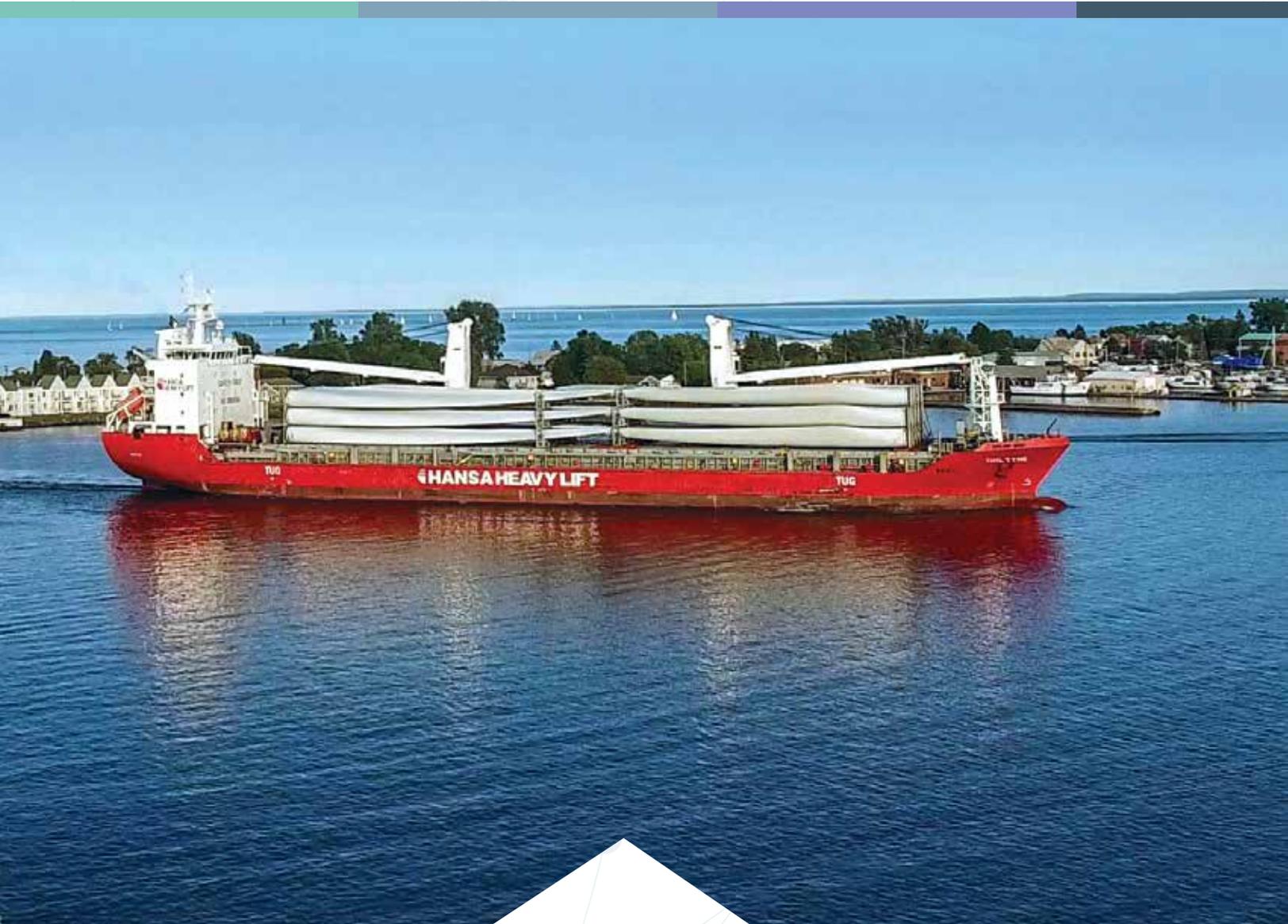
ALLETE's portfolio of operating wind assets controlled by ALLETE Clean Energy and Minnesota Power now totals

**more than
1,000 MW**

\$30 Million

10 MW solar installation at Camp Ripley approved

Exploring opportunities and seizing the best



We're expanding our footprint by seeing the potential in
water and energy and how they are used.

Opportunities abound as the energy and water landscapes across North America evolve to meet changing expectations. ALLETE chooses to pursue opportunities that best fit the company's strategy of investing in energy infrastructure and related services that complement core regulated utilities, balance exposure to the utility's industrial customers and provide long-term earnings growth. Where does ALLETE see potential? We see it in renewable wind energy, emerging technology that may offer a renewed future for coal and integrated water solutions for industry, among other prospects.

The wind at our back

In August 2015, ALLETE Clean Energy celebrated the development of its Thunder Spirit wind farm with its host community of Hettinger, North Dakota. Landowners and local residents, eager to witness the clean energy future unfolding in their own neighborhood, signed their names to a 160-foot fiberglass turbine blade that is now in service and generating power at the 107-megawatt development about 100 miles southwest of Bismarck, North Dakota.

The celebration, timed before the project was completed so folks could enjoy a warm summer day at the site, marked the first project built from the ground up for the ALLETE subsidiary. By November, the 43 Nordex N100 2.5-megawatt turbines were turning steady North Dakota breezes into enough electricity to power about 30,000 homes. ALLETE Clean Energy built the wind farm under a development agreement with Montana-Dakota Utilities, a division

of MDU Resources Group (NYSE: MDU). Montana-Dakota acquired the facility for approximately \$200 million.

Established in 2011, ALLETE Clean Energy has grown rapidly. In less than five years it has expanded from four employees to 70 and from zero projects to ownership of wind farms in Minnesota, Iowa, Oregon and Pennsylvania with a total capacity of more than 540 megawatts. It generated \$30 million of net income last year.

While constructing Thunder Spirit in North Dakota, ALLETE Clean Energy also added to its portfolio of wind farms with the acquisition of facilities in Pennsylvania and Minnesota. In April, ALLETE Clean Energy acquired the Chanarambie and Viking wind farms in southwestern Minnesota from EDF Renewable Energy for \$47.5 million. The combined 97.5-megawatt facilities are near ALLETE Clean Energy's Lake Benton project and consist of 65 turbines producing electricity under existing power purchase agreements with Northern States Power.

Employees join the celebration at the Thunder Spirit wind farm developed by ALLETE Clean Energy. They, along with local residents, signed their names to a turbine blade now generating electricity at the development near Hettinger, North Dakota.



In July, ALLETE Clean Energy purchased its seventh wind facility, Armenia Mountain, in the busy PJM electricity market near the New York-Pennsylvania border. ALLETE Clean Energy acquired the 101-megawatt facility from AES for \$108 million, plus the assumption of existing debt. All of the facility's energy output is sold through existing power purchase agreements that extend through 2024.

ALLETE Clean Energy is positioned for earnings growth this year as a result of its wind farm purchases in 2015 and will continue to target acquisitions of existing facilities with long-term power sales agreements in place. In addition to wind, ALLETE Clean Energy looks to acquire or develop capital projects to create energy solutions through solar, biomass, hydro, natural gas, shale resources, clean coal technology and other energy innovations. ■

A Future in sustainable water management solutions

Evolving regulation, climate change and social expectations are increasingly driving water conservation and recycling, and placing a growing emphasis on the efficient use of both water and energy. ALLETE's acquisition of U.S. Water Services in early

U.S. Water is a leader in integrated water management, serving a growing and diverse mix of approximately 4,000 commercial and industrial customers in 49 states and Canada, including a significant number of Fortune 500 companies, and boasts a customer retention rate of more than 90 percent.

2015 leaves little doubt about the important link between water and energy. This energy-water nexus offers opportunity for investment as solutions surrounding the scarcity and reuse of water come to the fore.

U.S. Water is a leader in integrated water management, serving a growing and diverse mix of approximately 4,000 commercial and industrial customers in 49 states and Canada, including a significant number of Fortune 500 companies, and boasts a customer retention rate of more than 90 percent.

The company combines chemical, equipment, engineering and service for customized solutions to reduce water and energy use. Demand for the sustainable water management solutions provided by U.S. Water is expected to increase as large users of water seek more ways to enhance efficiency and improve their bottom line.

U.S. Water's first year as part of ALLETE was a productive one,



ALLETE Clean Energy acquired the Chanarambie wind farm in southwestern Minnesota in 2015.



U.S. Water Services, based in St. Michael, Minnesota, completed its first year as an ALLETE business in February 2016.

Why ALLETE is an attractive investment:

- Regulated/contractual/recurring energy revenues
- Earnings growth potential
- Strong and growing cash flow from operations
- Solid balance sheet and credit ratings
- Attractive dividend yield
- Sustainable energy solutions

Financial Goals

- Annual total shareholder return 9-10%
- Annual average earnings growth 5%
- Consolidated payout ratio 60-65%
- Long-term dividend growth

ALLETE has raised dividends for the sixth consecutive year and paid dividends uninterrupted since 1948.

ALLETE's average annual total shareholder return for the past five years was 11.25%.

with successful post-acquisition integration efforts as well as the purchase of a water services company in Georgia. U.S. Water acquired A and W Technologies, a strong regional company serving the southeastern United States that provides specialty chemicals and engineering service for water treatment in data centers, light industrial, institutional and food industries.

While U.S. Water will pursue periodic strategic tuck-in acquisitions like A and W Technologies, issues of water scarcity and water quality are expected to drive significant growth in industrial, commercial and governmental sectors and lead to organic revenue growth and an expanding presence in North America. The company recorded approximately \$120 million of revenue during the 10½ months of ALLETE ownership in 2015. ■

Emerging opportunities in energy-rich North Dakota

North Dakota, on Minnesota's western border, has become a leader in energy production by safely and responsibly tapping into its abundant natural resources, including lignite and wind. Now BNI Energy, the new parent company of BNI Coal, is exploring technology for using lignite coal to generate electricity with fewer carbon dioxide emissions and then using what little carbon dioxide is produced to pull more oil from the state's oil fields.

The Allam Cycle is an innovative technology that holds promise for North Dakota to continue to use its abundant coal resources while meeting proposed CO₂ emissions standards and allow for future construction of lignite-fueled power plants. The Allam Cycle generates electricity more efficiently, with fewer emissions and is less capital-intensive than traditional steam

BNI Energy, based in Bismarck, North Dakota is the new parent company of BNI Coal.



generation. Instead of steam-driven turbines, the turbine in an Allam design is driven by supercritical CO₂. The cycle also captures a stream of pure carbon dioxide that eventually could be used for late-stage oil recovery in the North Dakota shale formation.

BNI Energy is partnering with Minnesota Power; 8 Rivers Capital, a North Carolina development group; and Basin Electric Power Cooperative, a regional generation and transmission cooperative providing wholesale power to member rural electric systems in nine states, to advance Allam Cycle technology. The goal is to develop an electric generator that is powered by lignite but emits nearly no carbon dioxide, a greenhouse gas associated with climate change.

In 2015, the partners received a \$1.5 million Lignite Research Council grant and \$900,000 from the Department of Energy to be used toward designing a North Dakota demonstration plant fueled by lignite. Construction on the plant could begin as early as 2019 and full commercial operation could begin

BNI Energy is exploring how coal could be used in Allam Cycle technology, a method of generating electricity more efficiently, with fewer emissions and that is less capital-intensive than traditional steam generation.

in the 2020s. A 50-megawatt Allam Cycle facility using natural gas is under construction in Texas.

While ALLETE remains committed to North Dakota's lignite coal industry and believes there is a promising future for BNI Coal, we also recognize the need for new and transformational solutions to realize it. BNI Energy provides a vehicle for evaluating opportunities, such as value-added infrastructure services.

ALLETE's ties to North Dakota span decades, beginning with utility subsidiary Minnesota Power's purchase of the Baukol-Noonan Coal Co. in 1988. The mining

company was renamed BNI Coal and its headquarters relocated to Bismarck, North Dakota. Today, BNI mines about 4.5 million tons of lignite coal annually, supplying both units of the Milton R. Young Generating Station near Center, North Dakota.

The ALLETE and North Dakota connection strengthened as Minnesota Power completed its 500-megawatt Bison Wind Energy Center, the largest single wind installation in the state, and ALLETE Clean Energy developed the Thunder Spirit wind farm for sale to Montana-Dakota Utilities. ■



BNI Coal produces about 4.5 million tons of lignite annually from reserves estimated at 650 million tons.



Line workers swiftly, safely and efficiently restoring power after a storm are among ALLETE's most visible responses to customers. Highly visible or not, that focus on customer service extends across all of ALLETE's five businesses.

Building and supporting customer relationships

Minnesota Power

10-year
Contract
Extensions

U.S. Water

90%
Customer
Retention

Connections are strengthened through trust, integrity and
a commitment to customer service.

The nearly 2,000 employees who work at ALLETE's five subsidiaries serve a broad range of customers across North America. No matter who they are—Minnesota Power's taconite producers; the manufacturers that rely on U.S. Water Services for water-use solutions; or the families who depend on Superior Water, Light and Power for electricity, natural gas and water services—they share in ALLETE's commitment to excellent customer service.

ALLETE is listening to all of its customers, helping with their day-to-day concerns and supporting long-range projects. As energy and water use evolves, ALLETE is responding with new products and services to meet the needs of its customers.

Contract extensions reflect trust in Minnesota Power

The municipal customers that Minnesota Power serves are spread across northeastern and central Minnesota. They range from Nashwauk on the Iron Range to Two Harbors on Lake Superior's scenic North Shore to Pierz in the heart of the state. By virtue of owning their electric distribution systems, they can buy electricity from any power supplier or third-party power marketer they choose.

They chose Minnesota Power in a big way in 2015. The company's marketing department secured new nine-year contracts for 14 wholesale municipal customers that together represent about 150 megawatts of the utility's total electric load. Originally scheduled to expire in 2019, the contracts now run through 2024. The decision by these municipalities to extend their contracts with Minnesota Power reflects the trust they have in the

company and its employees.

The wholesale municipal customers weren't the only customers that chose to strengthen their relationship with the utility. Minnesota Power and ArcelorMittal, the world's largest steelmaker, agreed to a new 10-year electric service agreement to supply electricity to the steelmaker's Minorca mine near Virginia, Minnesota. The contract runs through December 2025. Minnesota Power also secured a contract extension with Magnetation's Plant 2 and Plant 4 near Grand Rapids, Minnesota, also through 2025.

Minorca, which is wholly owned by ArcelorMittal, produces nearly 3 million tons annually of customized fluxed pellets for use at its flagship blast furnace at Indiana Harbor Works near Chicago. Magnetation Inc. uses proprietary magnetic separation technology to capture iron ore particles left over from previous mining operations on Minnesota's Iron Range.

"These long-term contracts are a commitment to the future of mining on the Iron Range," said ALLETE



Electric load at Superior Water, Light and Power could increase if pipeline projects proposed by customer Enbridge Energy are approved.

CEO Al Hodnik. "They also illustrate the strength of the relationships Minnesota Power has built over the years with large industry in northeastern Minnesota." ■

An evolving grid, emerging options

For today's utility customers, it's not only about the electrons. They're looking for new ways to manage their energy use or even generate their own electricity. ALLETE utility subsidiaries Minnesota Power and Superior Water, Light and Power are exploring new products and services that can be offered as the distribution grid evolves from a predominantly one-way system to an integrated system that will improve overall efficiency and performance and increase service options for customers including increased integration of distributed energy resources.

Minnesota Power, with help from the U.S. Department of Energy's Smart Grid Investment Grant program, has been focusing on investments in key areas to test new

technologies and systems, including smart meters, automated feeder switches, load control devices, a web portal to support enhanced feedback about electricity use, a residential time-based rate and energy-efficiency programs. These efforts have laid a foundation for further advancement.

Advanced Metering Infrastructure is one technology that is helping to provide new service options for customers while providing timely insight about distribution system operations. Also called AMI, it's a data-gathering process that provides information about energy peaks and valleys, meter maintenance efforts, theft detection, and outage and restoration management, all of which help Minnesota Power and its customers to make more informed decisions about the use, production and delivery of electricity.

The ability to access more-detailed information about energy use through AMI made it possible for Minnesota Power to pilot a new option for residential customers based on when they use electricity. Participants in the time-of-day rate pilot are billed based on the

energy they use during off-peak, on-peak and critical peak periods. Energy used during off-peak periods receives a discounted rate. During on-peak periods the rate is slightly higher than the standard residential rate. On rare occasions during summer and winter months, when demand on the system is particularly high, a significantly higher rate called critical peak pricing can be put into effect.

More than 600 customers took part in the pilot. Minnesota Power is in the process of evaluating the results to determine its next steps.

AMI also provides more information about service locations, strengthening system reliability and safety. For example, distribution engineers can more easily isolate problems, minimize outages and replace suspect equipment before an outage occurs.

In neighboring Wisconsin, Superior Water, Light and Power, which provides natural gas and water service in addition to electricity, is investigating an upgrade of its various meters to add Advanced Metering Infrastructure. ■



Minnesota Power and Superior Water, Light and Power are exploring new product options for residential customers.

A milestone for proposed nonferrous mine

After more than a decade of environmental review, PolyMet Mining's proposed copper-nickel operation on Minnesota's Iron Range gained renewed momentum in March. The Minnesota Department of Natural Resources signed off on the project, saying the mining company's final environmental impact statement met state requirements.

The 3,500-page document was the DNR's largest environmental review by several measures. The comprehensive review involved more than 90,000 hours of state staff time and a series of public meetings that attracted thousands of Minnesota residents. The DNR's decision clears the way for the next phase of the \$650 million project—securing about 20 permits from state and federal authorities and determining financial assurance before any mining begins. PolyMet, poised to usher in a new age of best-in-class mining in Minnesota,

intends to focus on permitting throughout 2016. The copper, nickel and other precious metals that PolyMet will produce are vital to a clean energy economy. Minnesota, already a leader in clean energy, can become a national leader in responsibly mining the minerals used in wind turbines, hydro generators, solar panels, hybrid cars and battery storage.

Minnesota Power has a 10-year electric service contract with PolyMet to supply between 45 and 50 megawatts of power that would begin upon startup of operations.

ALLETE and Minnesota Power worked closely with PolyMet leaders and the communities near the proposed mine site, staunchly supporting the project through its 11-year review process.

While Minnesota Power looks forward to serving PolyMet, the utility continues to provide the electricity for the other natural resources-based industries that dominate northeastern Minnesota. In 2015, 46 percent of kilowatt-hour sales went to Minnesota Power's industrial customers—primarily

taconite mining, iron concentrate, paper, pulp and secondary wood products, and pipelines.

Last year proved challenging for Minnesota Power's mining customers who faced serious headwinds related to a downturn in global commodity pricing and high levels of steel dumping. Although recent actions by the International Trade Commission appear to indicate an improving marketplace for iron ore and steel, Minnesota Power will continue to work closely with its mining customers, as well as with the paper customers who are facing similar competitive challenges of their own. ■

Powering pipeline growth

Enbridge Energy owns and operates crude oil and liquids transportation pipeline systems that cross through the service territories of both Minnesota Power and Superior Water, Light and Power. The pipeline operator's appetite for electricity supplied by the two utilities has increased steadily in the past four

PolyMet plans to recycle this former taconite plant to process copper, nickel and other precious metals from Minnesota's first nonferrous mine.



years, growing from 60 megawatts in 2012 to 105 megawatts in 2016. Most of this growth can be attributed to additional pump units on the Alberta Clipper pipeline in Minnesota and the Southern Access line in Wisconsin. The new pumps effectively doubled the capacity of these two pipelines.

Enbridge has two other pipeline projects on the horizon that would spell even more load growth for Superior Water, Light and Power. Enbridge plans to construct a pipeline—called Sandpiper—that would connect its Beaver Lodge Station, near Tioga, North Dakota, with its terminal in Superior, Wisconsin, and to replace its Line 3 that runs from Alberta, Canada, into the Superior terminal. Superior Water, Light and Power could see at least another 20 megawatts of load from the two pipelines as the additional volume of oil is pumped from Superior through other pump stations downstream served by SWL&P. Enbridge is working its way through the regulatory process to secure the necessary approvals and permits for the two projects. ■

Extraordinary storm, extraordinary response

It's not every day that customers thank their power company. But customers of Minnesota Power expressed their gratitude and, along with Minnesota Gov. Mark Dayton and the state's U.S. Senate delegation, praised the company and its crews for their swift response to a fierce summer storm.

The storm, packing winds between 65 and 80 miles per hour, blew through a popular resort area in the western part of Minnesota Power's service territory on a Sunday night in July, toppling innumerable trees and knocking down power lines. About 8,000 customers were without electricity at the height of the outage, with the Nisswa and Gull Lake areas in Minnesota being the hardest hit. It was one of the most damaging storms to Minnesota Power's system in recent memory.

Minnesota Power mobilized quickly to begin repairs and restore power, an effort made more difficult and time-consuming because of the

extensive tree damage. Employees—everyone from the front lines to the support services to those who “stayed behind” to deal with the regular daily needs of customers—responded safely and professionally. Crews worked 16-hour days in 90-degree heat to replace hundreds of power poles and transformers. Reinforcements from Superior Water Light and Power, Minnesota Power's sister utility in Wisconsin, helped ease the load, and several other utilities also sent aid.

Several weeks after the storm, Minnesota Power hosted a community appreciation event in Nisswa Park to recognize restoration crews for their hard work and thank local residents for their patience. One employee summed up the relationship between customer and utility this way: “It's not just about the technical side of restoring power that they're grateful for. It's about people appreciating everything—the electricity, the guys putting the time in. It's all of it. Our product is invisible. You flip a switch and it comes on 99 percent of the time.” ■

Minnesota Power's response to a severe summer storm included more than 140 utility fleet trucks plus specialty equipment. ALLETE Chairman, President and CEO Al Hodnik met with Minnesota Gov. Mark Dayton and local emergency responders several days after the storm hit the central Minnesota resort area.



ALLETE is an energy company



ALLETE (NYSE: ALE) is an energy company rooted in northern Minnesota but expanding into other areas across the United States. While it has been well-positioned in Wisconsin and North Dakota for decades, ALLETE has enlarged its footprint with the establishment of ALLETE Clean Energy and the acquisition of U.S. Water Services.



*Cover photo:
ALLETE is based in Duluth,
Minnesota, where residents
enjoy occasional displays
of the aurora borealis. This
impressive display of northern
lights was at Little Caribou Lake
north of Duluth in March 2015.*

Photo by Dennis O'Hara

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