

## LEADERSHIP

*We have the courage to lead, and do so through inspiration, innovation, collaboration and execution.*

### Empowering Life

Energy is essential. It is part of our global economy and an engine of human and environmental progress. Every day, our world needs more energy delivered safely, reliably, affordably and cleanly. Yet, we live in an age where several billion people awaken each day with little or no access to energy. Many have no enduring light, no refrigerators to keep food fresh, and no clean, safe way to create warmth in their homes.

This energy crisis has many faces. In developed nations, it's the family struggling to make ends meet – forced with the difficult decision to pay for heat or food. In developing nations, it's the mother who goes to work well before the sun comes up and continues well after dark to provide for her family in makeshift ways because she has no power. According to the World Health organization, it's still common practice for billions to prepare meals and heat homes by burning firewood, charcoal or animal dung, which release dense soot and smoke. Tragically, over 4 million people<sup>1</sup> die prematurely each year as a result of this indoor pollution, and it's one of the world's leading causes of death.

Peabody believes safe, environmentally responsible, high-tech coal mining and power generation offers a widely available and cost-competitive means to meet the energy needs of both developing and industrialized nations, while supporting a transition to a low-carbon economy.



*Without adequate electricity access, almost 3 billion people burn wood, residues and other wastes in open fires and rudimentary stoves to cook food and warm dwellings. Women and children disproportionately shoulder this burden, resulting in a global crisis and human tragedy that is preventable.*

### Advanced Coal Technologies Role in the Future of Energy

Today, the world uses twice as much electricity than it did 25 years ago.<sup>2</sup> Consider the numerous ways we depend on energy to improve our lives every day – alarm clocks, phones, computers, dishwashers, laundry machines, air conditioners... and the list goes on. All of these conveniences have become an everyday part of life and require energy to function.

Peabody has long held the belief that when we put people first, we put energy first. As energy leaders, our charge is to expand energy access for families living without power, maintain a reliable supply to satisfy existing needs and plan for long-term growth. All of this points to coal's important role in the mix of fuels given its scale, availability and low cost.

<sup>1</sup> World Health Organization Fact Sheet, February 2016.

<sup>2</sup> International Energy Agency, World Energy Outlook, 2015.

Advanced coal technologies are a ready-today solution to satisfy global energy needs and accelerate the transition to low-carbon energy systems. There are three core steps toward this goal:

1. Continue to turn coal into electricity, which can lift hundreds of millions from energy poverty and the health tragedies from cooking and heating with open fires.
2. Use today's high-efficiency, low-emissions (HELE) coal-fueled generation technologies to drive down carbon dioxide (CO<sub>2</sub>) levels and regulated emission rates. There is a large build-out of these plants underway globally with more than 750 gigawatts of advanced coal generation on line or under construction.<sup>3</sup>
3. Advance policies and investments to commercialize next generation carbon capture, use and storage (CCUS) technologies, which offer a large-scale solution to capture CO<sub>2</sub> emitted from power generation as well as industrial processes.

#### Gradient Study: Evolution of Cleaner Solid Fuel Combustion

In 2015, a study published by Gradient, a firm specializing in environmental and risk sciences, compared the emissions exposure from traditional household solid fuel combustion for space heating, lighting, and cooking in developing countries with wood, charcoal and animal dung to electricity from coal-fueled power plants.

The results found measured particulate matter and carbon monoxide concentrations inside homes burning traditional solid fuels are thousands of times greater than even the high-end estimates of ground-level ambient exposure levels from U.S. coal-fueled power plant stack emissions. Overall, as compared to traditional household solid fuel combustion, which represents an inefficient, high-emission form of fuel utilization, coal-fueled power plants represent a more sophisticated, cleaner approach to getting the maximum energy out of solid fuel with significantly reduced impacts on the air that humans breathe.

In 2015, Peabody President and Chief Executive Officer Glenn Kellow chaired a National Coal Council (NCC) report that called for leveling the playing field for CCUS to achieve policy parity with other low-carbon options, such as solar and wind. The report was requested by U.S. Secretary of Energy Ernest Moniz in advance of the 21<sup>st</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change in December 2015.

Peabody commends the U.S. Department of Energy's (DOE) stewardship of a successful research and development program to spur early development of CCUS technologies and believes greater support is needed to bring CCUS to commercial scale. The report outlined what is needed to propel progress for CCUS technologies, which ultimately would lead to near-zero emissions from coal, and is recognized by global leaders as essential to our carbon goals. Key recommendations include:

1. **Financial Incentives:** Financial incentives for CCUS must be substantially increased and broadened to include incentives available to other clean energy sources.
2. **Regulatory Improvements:** A first-of-its-kind regulatory blueprint is needed to remove barriers to construction and development of CCUS projects.
3. **Research, Development and Demonstration:** The DOE must be a catalyst for additional commercial-scale demonstration projects, and such projects must commence immediately.
4. **Communication and Collaboration:** The U.S. Department of Energy must assure U.S. and global policymakers and other stakeholders that fossil fuels will be used in coming decades to a greater extent than today, and there is a resulting need for CCUS.

<sup>3</sup> Platts World Electric Power Plant Database, December 2015.

As we look ahead, we must put in place a technology path for long-term improvement in carbon emissions that will enable the world to use more energy, while keeping electricity available and affordable.

## Near-Zero Emissions and Low-Carbon Projects

Peabody is a leader in sustainable mining, energy access, and clean coal solutions, advancing low-emissions, low-carbon projects and partnerships in the United States, China and Australia.

### China Initiatives

#### GreenGen

The GreenGen power plant and carbon research center in Tianjin, China, commissioned its first 250 megawatt gasification unit in 2012. In later phases of development, GreenGen is expected to increase generation to 650 megawatts and to capture CO<sub>2</sub> for enhanced oil recovery in the nearby Dagang oil field. At full build, GreenGen would be among the world's largest near-zero emissions coal plants. It is a global model, and Peabody is the only non-Chinese equity partner.

### U.S.-China Energy Cooperation Program

Peabody is a founding member and the co-chair of the U.S.-China Energy Cooperation Program (ECP), which includes Fortune 500 companies pursuing clean coal technology development and clean energy projects in coordination with key government agencies of both countries. The DOE and Chinese National Energy Administration (NEA) are coordinating agencies. Participants are advancing a variety of projects, including coal-based power generation with CCUS, smart power grid development and clean transportation.

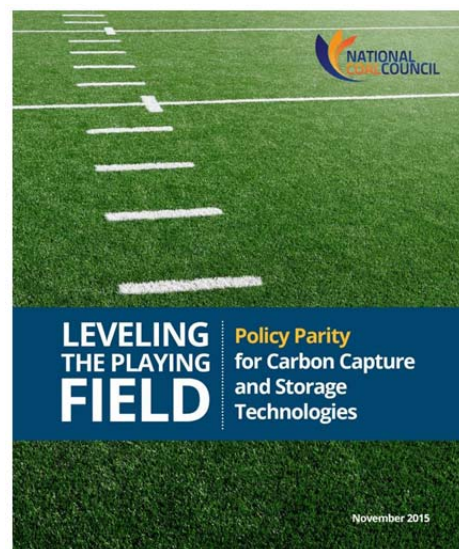
### U.S. Initiatives

#### Prairie State<sup>4</sup>

In 2015, Peabody maintained a 5 percent equity stake in the Prairie State Energy Campus in Southern Illinois, which is among the largest high-efficiency supercritical coal plants built in the United States during the past quarter century. The plant has operated at full capacity since late 2012, and is among the cleanest coal-fueled plants in the nation, with a regulated emissions rate that is 55 percent below the U.S. power plant average. Prairie State's mine mouth design enables the plant to have one of the lowest fuel and variable operating costs of any coal plant in the United States. Fueling the campus costs just over \$1 per million British thermal units, well below the price of natural gas.

### Consortium for Clean Coal Utilization

Peabody is a founding member of the consortium, which is advancing coal and energy research at Washington University in St. Louis. The center is testing advanced oxy-coal combustion concepts and use of CO<sub>2</sub> to grow certain species of algae.



*The NCC report chaired by Peabody President and CEO Glenn Kellow outlined steps needed to advance and commercialize CCUS technologies.*

<sup>4</sup> In May 2016, Peabody Energy sold its equity stake in the Prairie State Energy Campus to Wabash Valley Power Association.

As part of the International Center for Advanced Renewable Energy and Sustainability, the consortium belongs to a partnership of universities, industry leaders and foundations advancing clean coal technologies.

### Australia Initiatives

#### COAL21 Fund

Peabody is a founding member of Australia's A\$1 billion COAL21 Fund, an industry effort to pursue a collection of low-carbon technologies. This world-first, whole-of-industry funding approach is designed to support greenhouse gas abatement and is based on a voluntary levy on coal production. To date, Peabody has committed more than A\$20 million to the COAL21 Fund.

COAL21 was established in 2006 to help finance the pre-commercial demonstration work needed for key technologies, including research on CO<sub>2</sub> capture and storage. COAL21's flagship initiative is the Callide Oxyfuel Project in central Queensland. The Project successfully tested oxyfuel and carbon capture technology under live power station conditions for more than two years and leaves a legacy that oxyfuel combustion, linked with carbon capture and storage, has the potential to reduce CO<sub>2</sub> emissions from coal fueled power stations by up to 90 percent.

### Policies Matter; Fuel Choices Matter

When it comes to energy we need it all. We must recognize the strengths and limitations of each fuel to satisfy escalating global demand. Coal fuels more than 40 percent<sup>5</sup> of the world's electricity and is one of the primary fuels with the scale, reliability, and affordability to meet demand.

#### Investing in Coal and Fossil Fuels

During a time of heightened discussion about the world's use of fossil fuels, Peabody has called on industry to embrace sustainable mining, energy access and clean coal solutions.

Peabody is recognized globally for its stewardship, and the company's record of leadership delivering modern energy and protecting the environment spans its history. Peabody committed to restore mined lands through "Operation Green Earth" long before regulations were enacted that required it. The company also is engaged in a number of global partnerships and projects to deploy today's clean coal technologies and advance next-generation solutions toward the ultimate goal of near-zero emissions from coal-fueled power plants.

#### Report Finds Divestment Would Lead To Financial Losses

A report by Prof. Daniel R. Fischel of the University of Chicago titled, *Fossil Fuel Divestment: A Costly and Ineffective Investment Strategy* used an economic model to track the performance of investment portfolios that included energy-related stocks over a 50-year period compared to those that did not.

The study found that diversification costs from divesting energy stocks would represent a 23 percent loss over a 50-year horizon. In addition, the study found no evidence of any discernible impact on the companies being targeted by the policy.

Activist calls to move away from use of coal, oil and natural gas would leave families in the dark by turning away access to modern, affordable energy that powers longer, healthier lives. A world without fossil fuels also would destroy the hope of a better future for billions who lack proper electricity right now.

<sup>5</sup> International Energy Agency, *World Energy Outlook*, 2015.



Calls to divest from fossil fuels are wholly symbolic, and the symbolism itself is misguided. Fossil fuels are the backbone of the world's energy supply, providing about 80 percent of global energy, and coal powers the most electricity of any fuel.<sup>6</sup> Each day, hundreds of millions of people around the world wake up to the benefits of coal-fueled electricity, which enables longer and better lives. Everyone, no matter where they live in the world, should have the right to energy access and the ability to enjoy the same quality of life as those in the developed world. It is at best dubious and at worst immoral to take actions that consign billions to energy poverty.

## Investment Principles for Best-in-Class Coal Companies

We expect coal to be an essential source of global electricity generation and steel making for many decades to come. The world needs coal to meet growing energy demand at a time when urban populations are projected to increase by 1.4 billion over the next 20 years and people embrace lifestyles powered by modern energy.

With energy being vital to life, and future energy needs heavily reliant on coal, we submit that investors consider the following principles to assess whether their target investment companies meet the vast majority of the following standards consistent with best-in-class coal companies.

The following best-in-class principles are core to our company, and an embedded part of our culture.

### **Sustainable Mining**

- Operate safe workplaces, commit to continuous improvement in incidence rates, and establish safety as a top priority principle.
- Maximize resource recovery.
- Seek ongoing improvement in environmental performance.
- Disclose which mines provide mountaintop-removal-free production.
- Commit to restoring mined lands for generations that follow.
- Respect human rights and indigenous people who are potentially impacted by mining activities.

### **Energy Access**

- Drive partnerships and policy to achieve universal access to modern electricity.
- Engage with government, academia and other stakeholders to address major energy challenges.

### **Clean Coal Solutions**

- Support greater deployment of advanced coal technologies and next-generation carbon capture, use and storage technologies.
- Support and drive policies to achieve the goal of near-zero emissions in the world's next-generation coal-based electricity generation fleet.

## Advanced Coal Technologies: An Environmental Success Story

We believe coal is an essential part of the world's energy mix needed to achieve the three-part goals of energy security, economic progress and environmental solutions. Since 1970, coal used for U.S. electricity generation has doubled, while regulated power plant emissions have decreased nearly 92 percent per megawatt hour.<sup>7</sup>

<sup>6</sup> International Energy Agency, *World Energy Outlook*, 2015.

<sup>7</sup> U.S. Energy Information Administration, *Monthly Energy Review*, March 2016; U.S. Environmental Protection Agency (EPA), *National Air Pollutant Emission Trends & Air Market Program Database*.

Advanced coal technologies continue to build on this progress, and are broadly used today in the United States and around the world making coal-fueled power plants significantly cleaner than ever before. Today's clean coal technologies enable substantial further improvements in air quality by reducing the vast majority of sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), particulate matter, mercury and other emissions.

Over the past five years, approximately one new 500 megawatt coal-fueled power plant came on line every three days, and the majority of these plants are being developed with HELE technology. These technologies result in a smaller environmental footprint, achieving as much as a 25 percent reduction in a plant's CO<sub>2</sub> emission rate. Notably, when HELE plants are equipped with advanced emission controls, they achieve regulated emission rates that are 55 percent below the U.S. existing coal fleet.

### Peabody Honors the World's Cleanest Coal-Fueled Plants

Peabody believes advanced HELE technologies are the right approach and a major part of a low-carbon energy future. Peabody has honored coal-fueled power plants for top environmental performance with its Advanced Energy for Life Clean Coal awards since 2014.

Following are 2015 global award recipients in each category:

- **Dynegy Inc.'s Coffeen Plant** for the best global emissions rate of SO<sub>2</sub>, that is 99 percent lower than the U.S. coal plant average. The 915 megawatt power plant operates in Central Illinois and is 50 years old. Dynegy Inc. uses low-sulfur Powder River Basin coal and added a wet scrubber in 2009.
- **KOSEP's Yeongheung Plant** for lowest global emissions profile of NO<sub>x</sub>, with an emissions rate that is 85 percent below the U.S. average. The Yeongheung Plant is a 5,080 megawatt supercritical coal-fueled plant in Yeongheung Island, South Korea.
- **Trianel's Lünen Plant** for the best global heat rate, a measure of the plant's efficiency. This 750 megawatt ultra-supercritical power plant has a level of efficiency of approximately 46 percent, which is approximately 25 percent more efficient than the average U.S. coal plant.



*Peabody's Vice President Coal Emissions and Conversion Technologies Jacob Williams (left) and Group Executive of Marketing and Trading Bryan Galli (right) present awards to Dynegy for its Coffeen Plant, which had the best global emissions rate for SO<sub>2</sub> in 2015.*

At a time of heightened global discussion about the benefits of advanced coal technologies, Peabody is proud to showcase clean energy solutions that achieve meaningful emissions improvement. The plants that have been honored demonstrate the best results worldwide and offer a powerful model to achieve our global environmental goals.

## Peabody People, Leading People

Peabody focuses on building the leadership pipeline by identifying and developing key talent throughout the organization. The company develops leaders so that they have the skills to lead courageously based on the company's four leadership pillars – Inspiration, Innovation, Collaboration and Execution. Each leadership pillar is comprised of core competencies and behavioral descriptions that assist employees across all levels to better understand leadership expectations.

INSPIRATION <i>The ability to motivate and excite all employees</i>	INNOVATION <i>The ability to think outside the box</i>	COLLABORATION <i>The ability to work with others for the good of Peabody</i>	EXECUTION <i>The ability to get things done efficiently and effectively with good judgment</i>
Coaching, Mentoring & Developing	Continuous Improvement	Being Open & Transparent in Relationships	Driving Results
Motivating Others	Leading Change	Cross-Cultural Resourcefulness	Enhancing Employee Performance
Valuing Others	Strategic Agility	Working Across the Peabody Platform	Health, Safety & Environmental Mgmt. Problem Solving

In addition, this framework supports company efforts in identifying and developing Peabody leaders. Talent Review Meetings are held with the leadership teams across the platform where current and potential leaders are discussed including their performance and next steps needed to accelerate their development. Other programs like the Manager and the Supervisor Development Program are in place to support the leadership pipeline down through the first line supervisor. To learn more about these programs and other employee development and training initiatives, please see our [People section](#).