

Before the U.S. Senate Environment and Public Works Committee

“Green Jobs from Action on Global Warming”

Testimony of Kevin R. Collins
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Thank you Chairwoman Boxer for the opportunity to testify today. My name is Kevin Collins. I am the President and Chief Executive Officer of Evergreen Energy Inc, based in Denver.

Clean energy, including cleaner coal, is essential to ensure a better environment, our national security, and economic prosperity, including new American jobs. Governments, lawmakers, and industries are seeking solutions to lower harmful air emissions and reduce greenhouse gas emissions while meeting growing energy demand, keeping costs low, and achieving results now and for the long term. Our common goal is to put in place the infrastructure, policies, and other tools necessary to achieve success.

I am here today to share with you the story about a unique, American technology developed in a Stanford University laboratory only 17 miles from here and financed by the private sector. This technology provides energy, environmental, economic and job creation benefits right now. It reduces CO₂ and other emissions. It is a pre-combustion approach that transforms our traditional view of the coal-fuel cycle by improving efficiency and environmental performance. This technology is available not 5, 10 or 15 years from now, but today. This solution is Evergreen Energy’s refined coal that we produce and market as K-Fuel®.

Cleaner coal must be a central part of any national energy security policy. The U.S. has the world’s largest known recoverable coal reserves - roughly 270 billion tons - which

implies at current consumption rates a roughly 200 year supply. U.S. coal reserves contain more energy than all of the world's oil reserves¹.

Today, about 50 percent of the coal consumed in the U.S. comes from western mines – up from almost zero percent in 1970. That is because western coal - one type that works with our K-Fuel® process - has less sulfur and is therefore cleaner than coal from the east. Wyoming is the country's largest coal producing state, producing over 400 million tons per year or nearly 40 percent of the U.S. total.

The K-Fuel® process simply replicates nature. Evergreen Energy chemically and physically transforms coal - *before* it is burned - into a cleaner burning fuel. Our proprietary pre-combustion process uses heat, pressure, and time to remove water and reduce pollutants from lower quality coals, thereby raising heat value. By increasing the heating value of these low-rank coals by approximately 25 percent, efficiency is improved so that less tons of coal are consumed to generate the same energy output. This translates into less CO₂ and other pollutants per kilowatt hour generated. By doing so, I believe that Evergreen Energy can rightfully call itself one of today's solutions to the nation's energy challenges.

Refined coal is available today by the ton. Evergreen Energy has built the world's first coal refinery in Gillette, Wyoming. The tens of millions of dollars spent on this plant no doubt had a significant multiplier effect on the region as a whole. Extrapolating these numbers, we can reasonably project that construction and operation of future coal refineries will create thousands of new jobs.

K-Fuel® stands as an example of how the need for cleaner energy creates new solutions and new opportunities for all Americans – including the potential for thousands of new jobs.

¹ American Coal Foundation web site: <http://www.teachcoal.org/aboutcoal/articles/fastfacts.html>

Our 750,000 ton per year plant uses modular equipment that can be scaled larger and Evergreen's plant designs are targeted to produce between two and 10 million tons of refined coal per year.

Successful test burns and sales of refined coal to utility and industrial coal consumers over the past year and a half have demonstrated lower emissions and higher efficiency. Up to 70 percent of the mercury is removed from the coal . . .and we have demonstrated lower levels of sulfur dioxide and nitrogen oxides emissions. Our engineering calculations show that due to its higher efficiency, K-Fuel® reduces CO₂ emissions per kilowatt hour generated simply by switching fuel. Evergreen Energy is planning to further verify the CO₂ reduction benefits achieved by K-Fuel® later this year through test burns.

By using cheap, abundant low-rank coal from areas such as Wyoming's Powder River Basin, through the K-Fuel® process we add value and create markets for these resources. K-Fuel® can increase generating capacity from de-rated plants and allow for a more cost-effective emissions control solution than adding costly post-combustion control technology, such as scrubbers. However, K-Fuel® can also be used by plants with already installed back-end control technology to provide improved efficiency and additional emissions reduction benefits.

The K-Fuel® process is perhaps the only new energy technology that *produces* rather than consumes large amounts of water. In the arid West where water resources are increasingly valuable, the industrial-grade quality water that is drawn off the pre-combustion process may have many beneficial uses.

Evergreen Energy is delivering on the need for cleaner coal today, but as we plan for the future, we see significant marketplace opportunities made possible by the vast reserves of low-rank, low-cost coal resources readily available around the world. Accompanying this opportunity is significant potential for job creation. We are in ongoing discussions with several utilities about locating K-Fuel® coal refineries next to power plants, a concept we

call K-DirectSM. The combined heat and power approach raises efficiency, reducing costs and emissions per kilowatt hour. Located next to a power plant, a K-DirectSM coal refinery uses the plant's waste steam as a power source and produces refined coal and water for the plant's use. Naturally, all the benefits of K-Fuel® are there as well, including the opportunity to restore efficiency to de-rated power plants and reduce or eliminate the need for new or additional back end control technology.

As we plan for the future of a carbon-constrained world, Evergreen Energy has established a wholly owned subsidiary, C-Lock Technology, which uses a proprietary methodology to measure carbon emission reduction credits. Shortly, you will hear more about C-Lock from Dr. Patrick Zimmerman. With K-Fuel®'s carbon avoidance profile, we anticipate being a very active participant in the carbon market.

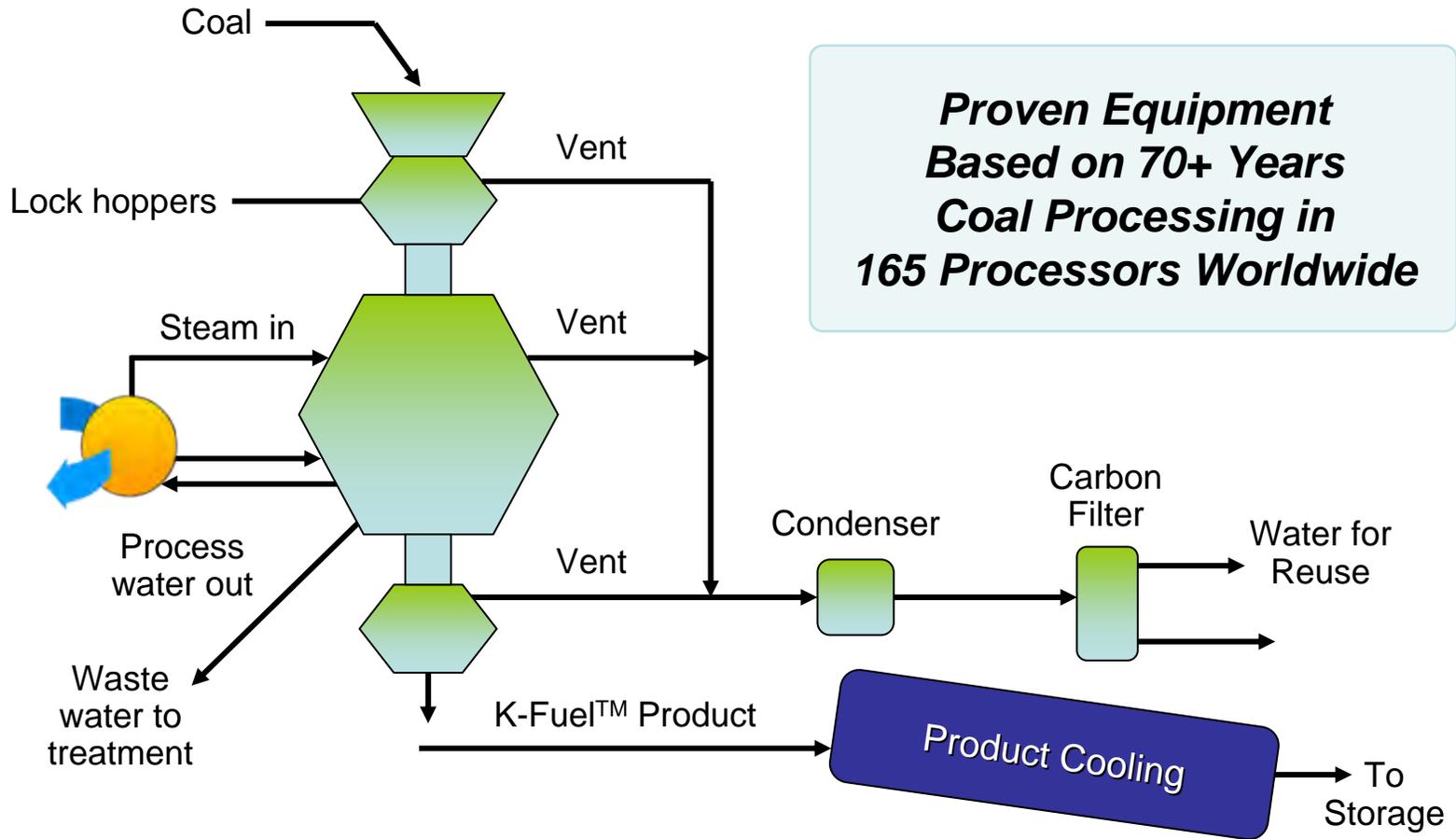
Looking ahead, there has been too much focus on the solutions offered by Integrated Gasification Combined Cycle, FutureGen, and other advanced coal processes. While these are all promising technologies, they are years from widespread deployment---and I respectfully raise caution about over-reliance on a limited number of futuristic clean coal technology solutions. Cleaner coal solutions exist today.

This country must have a balanced portfolio of clean coal technology options comprised of pre-combustion, combustion, and post-combustion technologies – Future Gen but also NOW GEN - that will offer solutions today, years from now, and decades in the future at reasonable costs. These solutions need to be accompanied by flexible policies that create balanced and equal incentives.

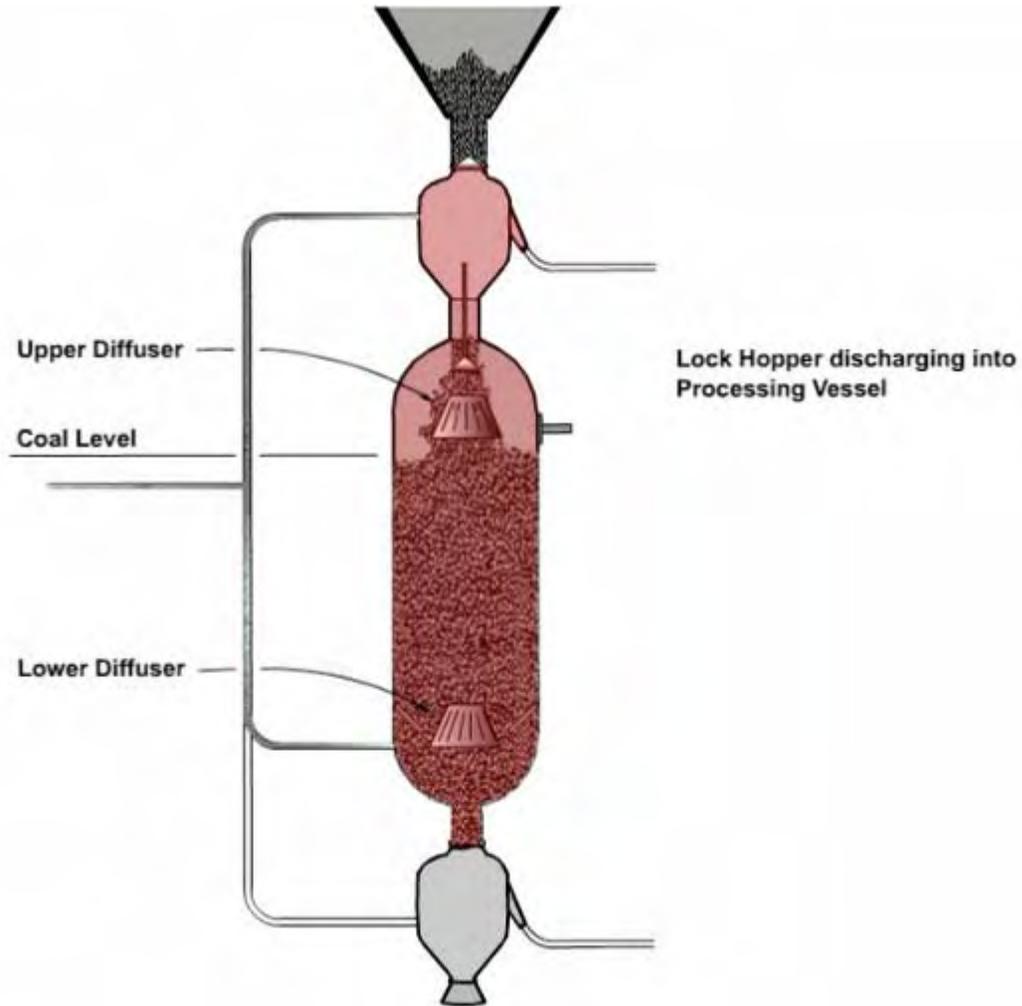
As lawmakers and leaders you should embrace all energy options including nuclear, renewables, and energy efficiency while recognizing that coal will, and must, remain a significant piece of the portfolio. Evergreen Energy does not view refined coal as *the* solution but it is an *important solution* that deserves to play a role in the nation's comprehensive energy strategy. We are making coal cleaner, we are creating new jobs, and we are doing it today.

I thank the Committee for the opportunity to appear today and look forward to answering your questions.

K-Fuel[®] Process



K-Fuel[®] Processor

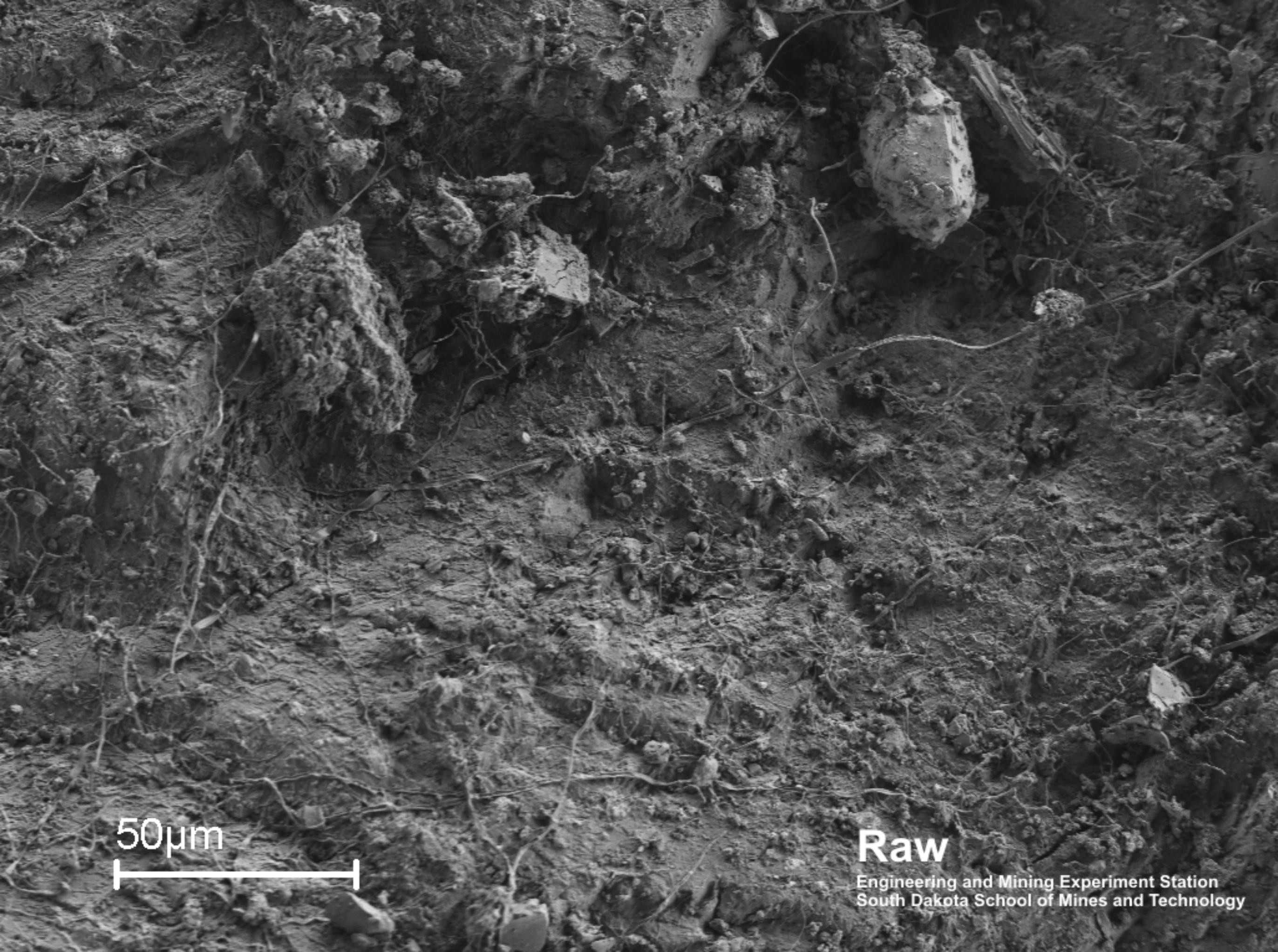


K-Fuel[®] Plant, Gillette WY



K-Direct Concept



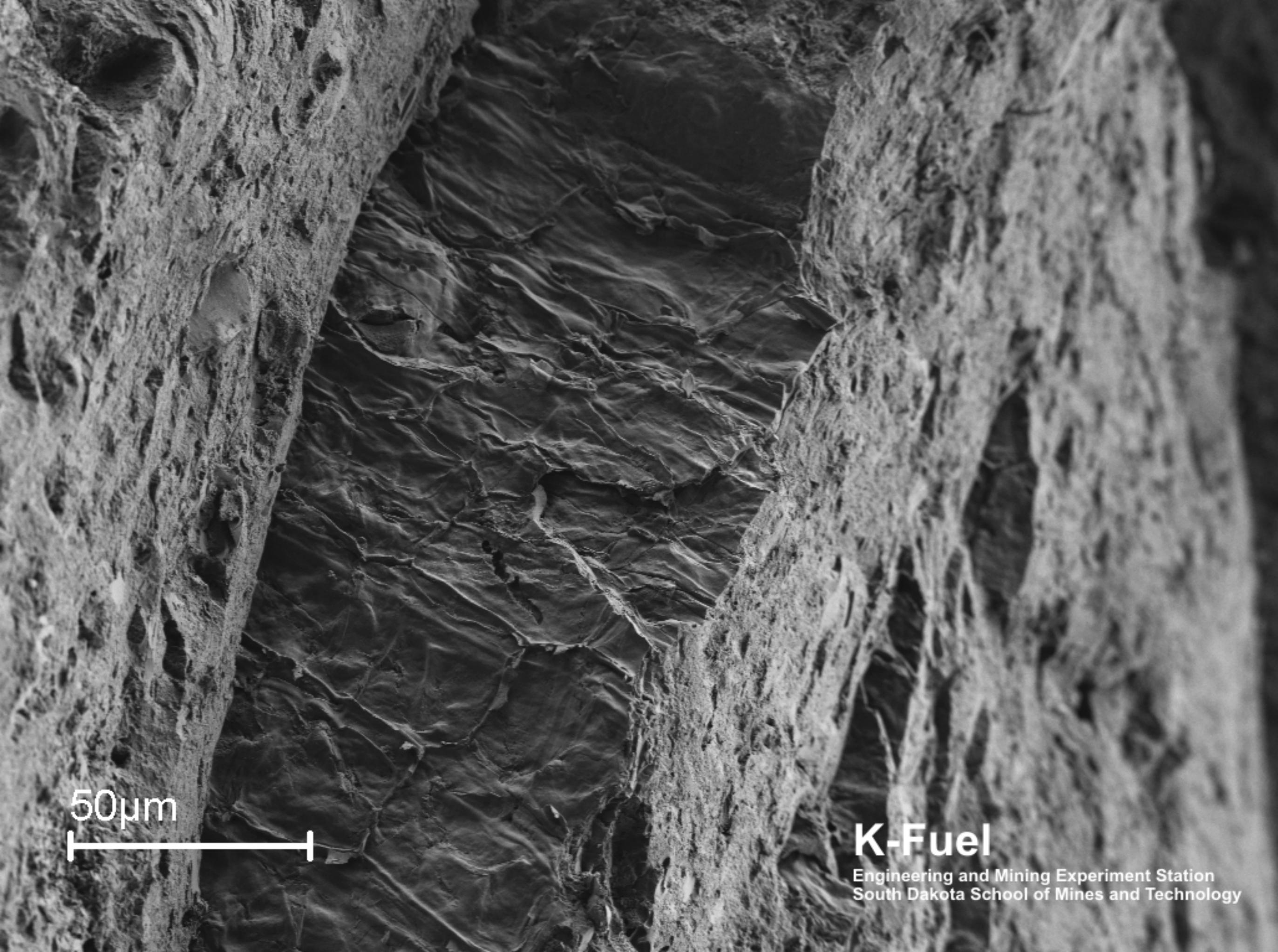


50µm



Raw

Engineering and Mining Experiment Station
South Dakota School of Mines and Technology



50µm



K-Fuel

Engineering and Mining Experiment Station
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