FRACTAL SYSTEMS AWARDED $5.0 MILLION OF FUNDING FROM EMISSIONS REDUCTION ALBERTA

Improving Bitumen Transportation Efficiency and Lowering GHGs

February 12, 2019 (Calgary, Alberta) – Fractal Systems Inc. ("Fractal" or the "Company"), a privately-owned technology company engaged in the business of developing proprietary partial upgrading technology solutions for bitumen producers, today announced that it has been awarded funding of up to $5.0 million from Emissions Reduction Alberta ("ERA") to facilitate the first commercial deployment of its Enhanced JetShear™ ("EJS") technology.

Since the successful conclusion of the EJS commercial demonstration program in 2017, Fractal has been focused on the development of a commercial scale project to be located at a major pipeline hub in Alberta. Fractal has developed commercial relationships with producers, midstream companies, capital providers and other organizations to prepare for the successful development of the Enhanced JetShear Regional Hub project with an expected capacity of up to 50,000 barrels per day (bpd) of bitumen feed (70,000 – 75,000 bpd of diluted bitumen). Funding from ERA will be used to support the advancement of a construction-ready project development plan over the next two years.

Fractal's EJS technology cost-effectively improves bitumen product quality (particularly through reduced acidity) and significantly lowers bitumen viscosity, which eliminates the need for approximately 50% of the diluent normally required to meet pipeline specifications depending on feedstock quality and selected process operating conditions. Reducing the required diluent lowers transportation costs, increases export pipeline capacity by about 20%, and cuts wells-to-tank greenhouse gas ("GHG") emissions by 11%. The reduced viscosity also allows the EJS product to be more efficiently shipped with little or no diluent by rail to refineries on the US Gulf Coast and other locations. The EJS technology directly addresses many of the challenges facing the bitumen and heavy oil industry.

"This support from Emissions Reduction Alberta comes at an important time in the development of the EJS technology," said Ed Veith, President and Chief Operating Officer of Fractal. "After more than a decade of research and development, taking these next steps to achieve commercial deployment is critical to achieving success. ERA's support will help us get this project developed as quickly as possible."

"Working together with our Trusted Partner SDTC allows us to leverage funding and accelerate the development and adoption of innovative technologies," says Steve MacDonald, CEO, Emissions Reduction Alberta. "This large-scale, first-of-kind deployment of Fractal's partial upgrading technology will significantly improve both the economic and environmental performance of heavy oil and bitumen processing."

Background

Since the mid-2000s, Fractal has been advancing the development of its proprietary and patented technologies, JetShear™ and Enhanced JetShear, to provide heavy oil and bitumen producers with cost-effective solutions to improve margins, de-bottleneck infrastructure and provide flexibility associated with the transportation of heavy oil. In 2013, Fractal entered into technology and testing agreements with a large Canadian bitumen producer, and in May of 2014, the parties commenced testing diluted bitumen at Fractal's 1,000 bpd JetShear demonstration facility located near Provost, Alberta using commercial-scale JetShear components.

On February 16, 2015, SDTC awarded Fractal and its producer partner $3.7 million of funding to conduct field trials of the newly-developed Enhanced JetShear and Acid Reduction Process ("ARP") technologies. Building on the successful demonstration of the JetShear technology platform that concluded in April of 2015, Fractal commenced engineering for a retrofit and expansion of the JetShear facility. Construction was completed in the first half of 2016, and the expanded facility operated from late August 2016 through August 2017.

During the operating periods, the facility processed over 225,000 barrels of partially-diluted bitumen that was trucked to the site from the producing partner's SAGD projects. The facility achieved approximately 50% diluent displacement and reduced the total acidity number ("TAN") and olefinic content of the product to exceed industry quality thresholds.

About Fractal

Fractal Systems Inc. is a private Canadian technology company focused on the advancement of innovative technology solutions for partially upgrading heavy oil and bitumen. Fractal's technologies will enable oil sands companies to reduce their environmental impact while realizing significant operating and transportation cost advantages over existing upgrading alternatives. Fractal's current technology platform includes JetShear, Enhanced JetShear and Acid Reduction Process, which have concluded field testing and are ready for commercial deployment with oil producers and midstream companies. Fractal has offices in Calgary, Alberta and a lab facility in Sherbrook, Quebec.

About Emissions Reduction Alberta

ERA works with government, industry and innovators to accelerate development of innovative technologies that reduce GHG emissions. We are helping Alberta transition to a lower carbon future with a stronger, more diversified economy.

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