



***Diversified Energy<sup>®</sup> Advanced Gasifier Awarded Follow-On Demonstration Contract from the U.S. Department of Energy; Moves Closer to Commercial Demonstration***

**August 13, 2008 – Gilbert, AZ** – The U.S. Department of Energy (DOE) has selected Diversified Energy Corporation (DEC) for an award to continue the development and commercialization of its HydroMax<sup>®</sup> advanced gasification technology. The 24-month, \$945,000 Small Business Innovation Research (SBIR) Phase II grant was awarded as a result of a competitive solicitation from the DOE's National Energy Technology Laboratory (NETL) and builds upon results achieved by DEC during Phase I. The award's objective is to develop technologies that can reduce and stabilize natural gas costs faced by the U.S. industrial sector – represented by over 14,000 users spending roughly \$50 billion/year. The HydroMax gasifier uses a patented molten-metals approach to deliver critical industrial market benefits, including: a) the capability to gasify a broad range of hydrocarbon inputs (biomass, municipal solid waste, petroleum coke, and coals with varying moisture, sulfur, and heating value content), b) the production of syngas that is relatively free of tars and oils and therefore requires less downstream clean-up equipment, and c) a design that is economical and reliable for industrial scale process heating applications.

During Phase I of the SBIR, a technical team that included Pittsburgh Mineral and Environmental Technology, Inc. (PMET) built and operated a HydroMax<sup>®</sup> gasification reactor that tested multiple coal types to characterize synthesis gas output composition and measure overall system performance and efficiency. In Phase II, the objectives are to scale-up and conduct more rigorous testing. This includes the testing of high moisture content, low rank coal (Powder River Basin) and high sulfur content, high rank coal (Illinois #6), as well as coal/wood blends. Testing will use a reactor 2.5 times larger in diameter than Phase I and showcase long-run continuous operations, self-heating, the use of commercial refractory materials, and operations and maintenance procedures including the removal of sulfur from the coal. The Energy and Environmental Research Center (EERC) will join the team to support design, testing, and analyses activities. In addition, CertainTeed, one of North America's leading gypsum wallboard manufacturers and a subsidiary of Compagnie de Saint-Gobain, will continue to act as the industrial partner by assessing how HydroMax can integrate into their North American wallboard and finishing plants.

The DOE SBIR Phase II award, coupled with on-going research and development being sponsored by the California Energy Commission (for biomass gasification to syngas) and Department of Defense (for biomass and waste gasification to liquid transportation fuels), solidifies the commercial potential for HydroMax. DEC plans to leverage these various

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government awards and industry partnerships to introduce the first HydroMax commercial pilot-plant system within the next five years. Phillip Brown, President of Diversified Energy commented, “The Phase II award from DOE-NETL serves to underscore the potential of HydroMax in the 10 – 80 MW (thermal) market for syngas production. The feedstock flexibility, cleanliness of syngas, and capability to economically and reliably scale to support industrial applications is being widely recognized. We’re now firmly on a path to complete development and see this technology broadly adopted.” Gary Stiegel, DOE-NETL Gasification Technology Manager, remarked, “The HydroMax technology offers a unique and compelling approach to gasification and we look forward to the results from Phase II and the eventual commercial introduction of the technology.”

About Diversified Energy Corporation:

Headquartered in Gilbert, Arizona (a suburb of Phoenix), Diversified Energy Corporation ([www.diversified-energy.com](http://www.diversified-energy.com)) is a privately held alternative and renewable energy company focused on maturing innovative technologies, developing commercial energy projects, and providing engineering services support to project developers. Principal areas of expertise include gasification, biofuels, and algal biomass production. The HydroMax<sup>®</sup> technology is under license from Alchemix Corporation.

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