



## MEDIA RELEASE

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### **VALVERDE POWER SOLUTIONS, MISC BERHAD, CLEAN ENERGY SYSTEMS AND AKER SOLUTIONS TO ADVANCE OIL & GAS FIELD DECARBONIZATION UTILIZING OXY-FUEL TECHNOLOGY**

Clean Energy Systems' Oxy-Fuel technology is utilized to:

- meaningfully reduce or eliminate oil field operations' GHG emissions, and
- convert stranded and contaminated natural gas feedstocks into emission-free power with 100% CO<sub>2</sub> capture

Valverde Power Solutions, Inc., MISC Berhad, Clean Energy Systems, Inc. and Aker Solutions today jointly announced the execution of an Agreement to specify and fund certain preliminary front-end engineering design (Pre-FEED) to assess and demonstrate two North American emission-free power projects utilizing Clean Energy Systems' proven Oxy-Fuel burner technology ("Hestia Demo Project").

The main objective of the Hestia Demo Project is to demonstrate the robustness of the Oxy-Fuel burner technology in an oil and gas field setting to generate emission-free power, reduce or eliminate oil field greenhouse gas (GHG) emissions, sequester CO<sub>2</sub> and provide a solution for stranded natural gas reserves. In an ESG context, by utilizing the Oxy-Fuel burner, Hestia Demo Project expects to show the ability to meaningfully address both Scope I and Scope II GHG emissions. The project team intends to capitalize on the significant Carbon Capture, Utilization and Storage (CCUS) technical and engineering expertise among the project participants.

The Oxy-Fuel burner technology is licensed by Valverde and owned by Clean Energy Systems ("CES"), a global leader in the development and deployment of carbon-reducing energy systems. The scalable CES Oxy-Fuel solution is designed to provide 10 MW to 100 MW of emission-free electrical power to meet the customer's specific project requirements.

Valverde management has been involved in CO<sub>2</sub> operations, sequestration and transportation since the late 1990s and will serve as project integrator and manager for the project.

Commenting on the Hestia project, Valverde's CEO Gareth Roberts, said *"Providing emission-free electrical power from abundant natural gas reserves is a critical component in ensuring a successful energy transition. The next stage of the project will provide a Consortium structure that will allow for scale and rapid oil field deployment of Oxy-Fuel technology for each participant. We believe that Oxy-Fuel is the most effective technology of its kind for the decarbonization of oil and natural gas field operations. Globally, there are numerous onshore and offshore applications, especially for contaminated gas streams. Valverde has identified 28 initial oil field decarbonization projects requiring an estimated \$4.6 billion in capital expenditures that collectively can sequester / eliminate approximately 8.6 million tonnes per year of CO<sub>2</sub>. The world-wide oil field decarbonization market segment is very large and is an important way to address GHG emissions."*



Aker Solutions has worked on projects and solutions for CO<sub>2</sub> treatment since the 1990s. The company has extensive international experience with the delivery of end-to-end projects for the production of oil and gas as well as renewable energy.

*“The CCUS technology being piloted in the Hestia project is unique and could prove to be a major tool in oil and gas field decarbonization. It produces affordable, reliable, and safe power at the oil & gas field while capturing the CO<sub>2</sub> as part of the combustion, thus allowing it to be reinjected into the very same gas field. Short-traveled gas and short-traveled CO<sub>2</sub>. We believe this has the potential of reducing the cost of carbon capture to a level where meaningful scaling towards emission reduction objectives can be achieved. It also lends itself to offshore applications which is Aker Solutions’ domain. In particular, we see great potential for producing emission-free power for offshore installations. It could also act as base power for offshore wind and complement green hydrogen production. Regarding the latter, excessive oxygen from green hydrogen production could be used to boost efficiency,”* says Truls Normann, Senior Vice President of Aker Solutions’ Power Solutions segment.

MISC’s extensive global operations service major and national oil companies who are placing increasing importance on carbon capture solutions in large oilfields and shipping.

*“MISC is committed to advancing sustainable solutions as we transition towards low carbon operations to meet our Net-Zero GHG emissions agenda by 2050. Oxy-Fuel power generation technology is potentially a critical enabler to decarbonize the energy industry. It complements MISC’s efforts to achieve our sustainability goals by providing clean electrical power for our offshore assets and operations,”* says Alexander James Brigden, Vice President of Offshore Business, MISC Berhad.

Based on proven rocket technology, CES Oxy-Fuel combustion systems produce clean, high-energy gases for use in industrial processes and the generation of electrical power. By using nearly pure oxygen instead of air, the only products of combustion are steam and CO<sub>2</sub>, which can be easily separated for carbon capture and permanent storage. The California-based company has been working to perfect the technology for more than 25 years.

*“We are excited for the opportunities the Hestia project offers to help advance our industrial decarbonization efforts,”* says Keith Pronske, CES President and CEO. *“We look forward to collaborating with such an experienced and innovative team.”*

Also joining the Hestia team is the Dutch engineering and project development group, TriGen Energy BV, contributing global Oxy-Fuel project experience focused on emission-free power generation. Calgary, Alberta-based Craft Power will also participate as Valverde’s partner in oil and gas Oxy-Fuel developments in Canada. Craft’s business plan is to develop clean power generation and proprietary, long-duration power storage solutions (including Oxy-Fuel), which complements and accelerates Valverde’s strategy.

The Hestia project plans to have its first North American carbon-free facility online by 2025.

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### **About Valverde Power Solutions**

Dallas-based Valverde Power Solutions is a Clean Energy Company and project developer using leading-edge technology to deliver carbon-free electric power and Carbon Capture, Utilization and Storage (CCUS). VPS has entered into a Master License Agreement with the leading Oxy-Fuel technologist, Clean Energy Systems (CES) securing exclusive rights and access to the CES Oxy-Fuel technology for use in decarbonizing oil field operations in North America. Valverde is a vital part of the diversity of solutions to eliminate carbon pollution while delivering an efficient source of clean energy for a more productive and sustainable world.

VPS was founded by Gareth Roberts, who has extensive carbon dioxide sequestration experience in North America and in the United Kingdom. He was the founder and CEO of Denbury Resources, where he developed expertise in CO<sub>2</sub> and subsequently founded 2CO, a U.K. based power producer utilizing CCUS.

Please visit [www.valverdepowersolutions.com](http://www.valverdepowersolutions.com) for more information

### **About MISC Berhad**

MISC Berhad (MISC or the Group) is a global leader in delivering energy-related maritime solutions & services with more than 50 years of experience in the maritime industry. Our principal businesses comprise energy shipping and its related activities, owning and operating offshore floating solutions, marine repair and conversion, integrated marine services, port management and maritime services as well as maritime education and training.

The Group's modern and diverse fleet consists of more than 100 owned and in-chartered vessels comprising of Liquefied Natural Gas (LNG) and Ethane carriers, Petroleum and Product vessels, Floating Production Systems (FPS) as well as LNG Floating Storage Units (FSU) with a combined deadweight tonnage (dwt) capacity of more than 13 million tonnes.

We are a proud constituent of the DJSI Emerging Markets Index and FTSE4Good Bursa Malaysia Index, a testament to our sustainability performance and strong Environmental, Social and Governance (ESG) practices. MISC Berhad is listed on the Main Board of Bursa Malaysia.

For more information, visit [www.misc.com.my](http://www.misc.com.my)

### **About Clean Energy Systems**

Clean Energy Systems is a California-based technology company and a global leader in the development and deployment of carbon reducing energy systems. The company has successfully transitioned proven, reliable rocket engine combustion principles into a flexible and economically attractive power generation system for the benefit of our planet. CES' proprietary oxy-combustion technologies enable cleaner and more efficient co-generation of power, steam, water, and captured CO<sub>2</sub> and offers the world a new perspective on the way we assess the value of natural resources.

Please visit [www.cleanenergysystems.com](http://www.cleanenergysystems.com) for more information.

### **About Aker Solutions**

Aker Solutions delivers integrated solutions, products and services to the global energy industry. This includes solutions to enable oil and gas production with reduced or zero emissions, and deliveries to renewable energy production. By combining innovative digital solutions and predictable project execution, the company accelerates the transition to sustainable energy production. Aker Solutions employs approximately 15,000 people in more than 20 countries.



**Contacts:**

**For Valverde Power Solutions:**

- Gareth Roberts, CEO
- Tel: 469.573.8754
- David Charles, Director of Investor Relations
- Tel: 469.573.8754

**For MISC Berhad:**

- Shanni Muthiah, Head, Group Corporate Communications
- Tel: +6 032275 2224

**For Clean Energy Systems:**

- Keith Pronske, CEO
- Tel: 916.638.7967

**For Aker Solutions:**

- Preben Ørbeck, Head of Corporate Strategy
- Tel: +47 47010611