Echogen power systems patents

Use waste heat from engines to produce electricity for onboard service power; Use waste heat to increase shaft power by gearing the Echogen engine into a propulsion shaft; Use the system as part of the onboard integrated power system (IPS) to function as an additional generator with no fuel consumption or emissions; Research with Navy SBIR

With our partners, Echogen evaluated and developed design opportunities for a power plant/turbine system in such an application. In the proposed system, CO 2 would be pumped into an injection well and a portion of the injected CO 2 would be extracted through nearby wells.

A Comparative Study of Heat Rejection Systems for sCO2 Power Cycles Presented at 5th International Symposium - Supercritical CO2 Power Cycles, 28-31 March, 2016, San Antonio, Texas, U.S.A; Supercritical CO 2 Cycles for Gas Turbine Combined Cycle Power Plants Presented at Power-Gen International 2015, 8-10 December 2015, Las Vegas, Nevada, ...

Echogen Power Systems, DE 365 Water Street Akron, OH 44308 United States of America Phone: 234.542.4379 Fax: 330.379.2357 . info@echogen ; procurement@echogen ; careers@echogen . Contact Form * Indicates Required Field. Your First Name* Your Last Name* Your Company. Email Address*

Waste Heat Systems. System Overview; Benefits; Applications. Industrial Heat; Power Generation; Oil & Gas; Solar; Marine; Heat Engine. ... Echogen"s values shape our culture and guide the way we run our business. They describe our business as we expect it to be, while guiding every decision we make. ... Echogen Power systems, LLC +1 234.542. ...

Latest ECHOGEN POWER SYSTEMS LLC Patents: Active thrust management of a turbopump within a supercritical working fluid circuit in a heat engine system; ... Why sCO2 can Displace Steam" Echogen Power Systems LLC, Power-Gen India & Central Asia 2012, Apr. 19-21, 2012, New Delhi, India, 15 pages.

Echogen improves the efficiency of these industrial processes while increasing financial returns. Because of the thermal characteristics of our working fluid, Echogen"s heat engine can generate electric power more cost effectively at lower temperatures, outperforming steam technologies in performance and overall cost savings.

Echogen Power Systems LLC . 365 Water Street . Akron, OH 44311 U.S.A. ... and ease of installationpending thermal engines can . Our patent-transform significant amounts of waste heat into electricity for applications ranging from bottom cycling in gas turbines, stationary diesel engine gensets, industrial waste heat recovery ...

Every member of the Echogen team plays an instrumental role in defining who we are and in shaping what we will become. Being a part of Echogen"s team and pursuing its mission enables you to impact the future of

energy and power generation, and the world we live in. Sure, it will be a challenge. ... Echogen Power systems, LLC +1 234.542.4379 ...

Presented at Electric Power Expo 2011, 10-12 May, 2011, Rosemount, IL U.S.A. Transforming Waste Heat to Power through Development of a CO2 - Based Power Cycle Michael Persichilli (a), Timothy Held (a), Stephen Hostler (a), Edward Zdankiewicz (a), and David Klapp (b) (a) Echogen Power Systems LLC 405 S. High St. Akron, OH 44311 U.S.A.

Echogen Power Systems, Inc. is commercializing waste heat to power with a proprietary system. The company"s breakthrough power generation cycle called the Thermafficient® Waste Heat Recovery Engine uses a modified Rankine Cycle with supercritical carbon dioxide (ScCO2) as the working fluid to recover thermal energy from a wide variety of sources and then transform it ...

Echogen Power Systems has 244 patents for the period 2009 - 2018. There are 39 patent familes with 56 granted patents and 188 applications patents. The key filing countries are US: 83 | WO: 45 | EP: 41 | RoW: 40 | KR: 17 | CN: 14 | JP: 4.

Echogen Power Systems ... a NASA technology, the "Champagne" CO2 absorption heat pump, and developed further intellectual property and patent-pending applications that extended the heat pump technology to a WHP engine. Echogen"s first prototype, completed in 2007, was a version of the "Champagne" absorption heat pump using carbon ...

Our scalable heat engine is able to deliver a wide range of power outputs, currently from 1 to 9 MW of net power but feasible up to 500+ MW. Our flexible system allows our customers to source power back to their facility, or to sell to the local utility for alternative returns.

At Echogen, we have designed an internship program that provides a practical, real-world experience geared to accelerate your knowledge beyond the classroom and prepare you for professional success. You will work alongside our employees and regularly interact with our management team.

Echogen Power Systems is founded to develop an improved waste heat recovery system ; Our first prototype (5 kW) is completed with an absorption heat pump using carbon dioxide and a preferred secondary fluid ; 2008. A second prototype (15 kW) is designed to operate with liquid CO2 ; 2009. A nominal 200 kW demonstration unit was designed and ...

Presented at Electric Power Expo 2011, 10-12 May, 2011, Rosemount, IL U.S.A. Transforming Waste Heat to Power . through Development of a CO 2 - Based Power Cycle . Michael Persichilli (a), Timothy Held (a), Stephen Hostler (a), Edward Zdankiewicz (a), and David Klapp (b) (a) Echogen Power Systems LLC . 365 Water Street . Akron, OH 44308 U.S.A.

Echogen Power Systems With 39 issued patents and over 30 pending, Echogen has progressed from multi-kW

demonstration units to multi-MW commercial products, including its 8 MW EPS100 heat engine. Echogen licensed its technology to Germany"s Siemens Energy. In February 2021 Siemens announced it will deploy the heat-to-energy system developed by ...

Echogen is developing a solution called Electrothermal Energy Storage (ETES) --where excess generation and off-peak electricity is converted and stored as heat and is later converted back to electrical power. Echogen has combined its expertise in supercritical carbon dioxide (sCO2)-based power cycle technology and components with safe, low-cost, highly-scalable storage ...

The Echogen Power Systems team will develop an energy storage system that uses a carbon dioxide (CO2) heat pump cycle to convert electrical energy into thermal energy by heating a "reservoir" of low-cost materials such as sand or concrete. During the charging cycle, the reservoir will store the heat that will be converted into electricity on demand in the ...

Once commercial, applications for long duration storage on renewable-driven conventional grids include: Pairing with wind and solar - for high capacity factor power plants; Stand-alone storage - to defer investment in new transmission (larger scale) and new distribution (smaller scale) due to changes in power supply and demand locations; Islanded power grids - to lower power costs ...

Echogen PTES sand and concrete storage materials are relatively benign to operate and dispose of. This is a contrast to the many metal chemistries of fixed and flow electrolyte batteries, as well as more exotic storage materials of other PTES systems. Thus, the Echogen PTES system maintains a low environmental footprint through its value chain.

We have combined our expertise in supercritical carbon dioxide (sCO2)-based power cycle technology and components with safe, low-cost, highly-scalable storage media to deliver a superior Pumped Thermal energy storage (PTES) -- where excess generation and off-peak electricity is converted and stored as heat and is later converted back to ...

Patents Assigned to Echogen Power Systems Split expansion heat pump cycle. Patent number: 11435120 Abstract: The disclosure provides a heat pump cycle that allows for an improved matching of the T(Q) slopes of the heat pump cycle. More particularly, the high temperature heat exchange is separated into two stages.

Dresser-Rand, a Siemens Business, partnered with Echogen to advance the design and construction of our waste heat recovery to power systems.Echogen is a key solution offering in the Dresser-Rand/Siemens renewable energy portfolio, focused primarily on the oil & gas market.

Our patented technologies operate over this broad range of heat sources to extract a significant amount of energy and convert it into higher value, usable power. Industrial Heat Applications; Power Generation Applications; Oil & Gas Applications; Solar Applications; Marine Applications

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