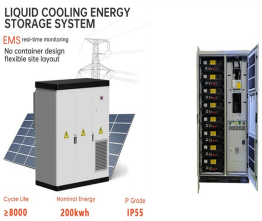
SOFC SYSTEMS NORWAY

The first-of-its-kind Solid Oxide Fuel Cell (SOFC) system converts ammonia directly to electricity without upstream cracking. The testing is being conducted at the Energy House at Stord ???

The SOFC system can already be connected to existing gas utilities and is immediately ready for use today, making it a vital contributor to the energy transformation and, along with photovoltaics and wind energy, an important pillar. The Bosch SOFC system is currently in the pilot phase. All technical specifications given are development

Partners Alma Clean Power, Odfjell and DNV to start testing of power system with Solid Oxide Fuel Cells (SOFC) for deep-sea shipping. Singapore, 29 September 2023: At the Singapore Norway Innovation Conference (SNIC) 28th-29th of September, Alma Clean Power, Odfjell and DNV announced a new milestone in the development of a solid oxide fuel cell (SOFC) system.

The REC is equivalent to the one included in the layout of the complete TC-SOFC system, and it is used to recover heat from the turbine exhaust flow. The CCM, installed at the vessel inlet, it is used to control its internal temperature (T) for generating the same thermal behavior of a real SOFC. The CCS, installed upstream of the turbine, can



The SOFC system will be integrated with existing dual fuel gensets and a battery pack, allowing the vessel to sail solely on emission-free, green ammonia for all dynamic positioning operations. The ammonia fuel cell system for ShipFC will be fully tested at the Energy House at Stord in Norway before installation onboard Viking Energy.

SOFC SYSTEMS NORWAY

Prototech enters cooperation with leading SOFC stack developer and supplier Sunfire Fuel Cells Technology champions cooperate on solid oxide fuel cell (SOFC) st For over 25 years, FCW has been the go-to source for news, information, and analysis.

kW SOFC system will serve as a building block for larger ship installations, enabling zero-emission operations with green ammonia. Upon its completion, the SOFC system will be transported to the EnergyHouse at Stord, where it will undergo rigorous testing for maritime operations.

The SOFC system took top honors in the Innovative Products category. As the jury noted, "This technology is ideally suited for developing a decentralized grid." With a rating of around 60 percent, the SOFC is indeed the front-runner when it comes to electrical efficiency. In fact, its overall efficiency climbs up to 90 percent when the

At the 2023 Singapore Norway Innovation Conference (SNIC), Alma Clean Power, Odfjell and DNV announced a new milestone in the development of a solid oxide fuel cell (SOFC) system. The fuel cell system will be installed on a chemical tanker by the end of 2024, aiming to demonstrate the potential for significantly lower fuel consumption and CO2 ???

The SOFC system will be integrated with existing dual fuel gensets and a battery pack, allowing the vessel to sail solely on emission-free, green ammonia for all dynamic positioning operations. The ammonia fuel cell ???

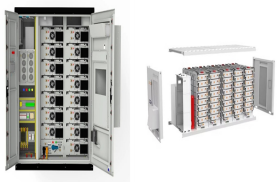
SOFC SYSTEMS NORWAY

The Comsos project (Commercial-scale SOFC systems, 2018???2023) is an EU-funded initiative aimed at enhancing the European SOFC industry's global leadership in the production of SOFC systems within the 10???60 kW power range. The primary goal of the project is to achieve a cumulative installed power capacity exceeding 300 kW.

The Norway-based technology developer has announced successful testing of a 6 kW, ammonia-fed solid oxide fuel cell unit. Alma received Approval in Principle from DNV for a 2 MW, container-sized SOFC system fed with ammonia fuel, and has already demonstrated continuous, stable operation of its SOFC technology.

The current work shall prove the feasibility and show methods to safely operate a simple SOFC/GT hybrid system under part-load and load change. Dynamic and steady state studies on a detailed model of a SOFC/GT hybrid system have been performed. A design point is selected. Steady-state part-load behavior is shown by means of performance maps. An ???

Norwegian company Alma Clean Power is developing a commercial solid oxide fuel cell (SOFC) technology that directly converts ammonia to electricity without prior cracking to hydrogen. A year after ???



The current work shall prove the feasibility and show methods to safely operate a simple SOFC/GT hybrid system under part-load and load change. Dynamic and steady state studies on a detailed model

SOFC SYSTEMS NORWAY

The SOFC system design has been evaluated for compliance with DNV class rules and IMO guidelines for fuel cell installations. The AiP was granted for a containerized module that includes safety

Explore the innovative projects at Alma Clean Power that are setting the stage for zero-emission solutions in maritime and ocean industries. From piloting the world's first ammonia-powered fuel cells on vessels to developing integrated power systems with carbon capture, discover how we''re pioneering clean energy technologies.

Discover the collaboration between Alma Clean Power, Odfjell, and DNV as they begin testing an innovative solid oxide fuel cell (SOFC) system aimed at transforming deep-sea shipping. This ???

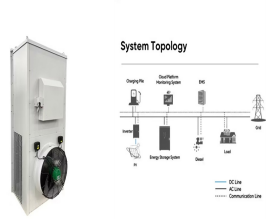
??? Partners to cooperate in developing first-of-its-kind LOHC-SOFC system for maritime use ??? Deploying Alma's high-temperature SOFC technology for high energy efficiency with zero emission operations Bergen/Norway, Erlangen/Germany, Haugesund/Norway, 7 March 2023. Alma Clean Power, Hydrogenious LOHC Technologies and Hydrogenious LOHC

The ready-to-operate solution for electricity and heat production. Bosch SOFC systems feature a modular design and are prefabricated: The centerpiece of the systems is the SOFC unit with a stack comprising hundreds of series-connected cells, where electricity and heat are generated in a highly efficient manner ??? with up to 90% overall efficiency at the beginning of life.

SOFC SYSTEMS NORWAY

At the 2023 Singapore Norway Innovation Conference (SNIC), Alma Clean Power, Odfjell and DNV announced a new milestone in the development of a solid oxide fuel cell (SOFC) system. The fuel cell system will ???

Prototech AS, Bergen (Norway) + Show Author Affiliations. The Statoil Solide Oxide Fuel Cell Research Program was started in January 1991. Some results from this Program were presented to the 1994 Fuel Cell Seminar in San Diego. and thus make a further step towards a verification of commercial SOFC system technology. View Technical Report



Alma will develop and build the 80kW system that will be tested during 2024 in Stord, Norway, before being transferred to a vessel for further testing. Ceres'' solid oxide technology is robust, fuel flexible, durable, and handles vibration well, making it ideally suited to marine environments, including coastal, portside and offshore.

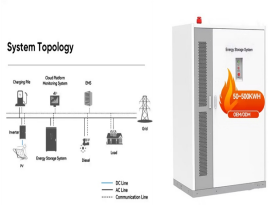
With specific reference to the load profile presented in Fig. 1, the SOFC system provides about 502.6 MWh of total waste heat throughout the course of the operation. Since the NEC system requires 229.20 MWh oh heat, approximately 45.6% of the SOFC waste heat must be directed to the LOHC system, at the expense of other possible cogeneration uses.

Large SOFC systems are mainly from US companies, particularly Bloom Energy, while SOLIDpower offers almost the least system power density (~6.5 W/kg). As far as the volumetric power density is concerned, Figure 5 b highlights that ???

This study concerns the design, modeling, and assessment of feasibility installation for two ammonia-based power generation systems for the decarbonization of the shipping industry: i) a NH 3-based PEMFC system and ii) a NH 3-based SOFC system. From the design perspective, the

power generation systems are conceived considering the integration

SOFC SYSTEMS NORWAY



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The HELENUS project will develop and demonstrate a High Efficiency Low Emission Nautical SOFC on a large ocean-going cruise vessel. This 500 kW TRL 7 SOFC solution will create a blueprint for scaling up the system up to 20 MW in future ship builds. Operating in cogeneration mode, the SOFC will simultaneously produce both power and heat

The SOFC system considers two operating modes: HR and CR. The difference between the two modes lies in how the recirculated anode exhaust is handled. In the HR mode, the recirculated anode exhaust is directly injected into the system at 200 ?C. The recirculating gas stream includes CO 2, CO, H 2 and H 2 O. In the CR mode, the anode exhaust is

Norway-based clean power solutions provider Alma Clean Power has received approval in principle (AiP) from classification society DNV for its marine solid oxide fuel cell (SOFC) system. Archive; Courtesy of Alma Clean Power. Specifically, the company's design of a 1 MW ammonia-fuelled SOFC system gained AiP from DNV. Credit: Alma Clean Power

Alma Clean Power | 4,132 f?lgere p? LinkedIn. We deliver future proof fuel cell solutions for clean power | We deliver Solid Oxide Fuel Cell (SOFC) systems for ocean industries. Our technology builds on more than 30 years of experience with research and development of SOFC systems which are characterized by high efficiency and fuel flexibility. Our SOFC solution has great ???

SOFC SYSTEMS NORWAY

The exergy concept has been used to analyze two methane-fueled SOFC systems. The systems include preheating of fuel and air, reforming of methane to hydrogen, and combustion of the remaining fuel in an afterburner. Norwegian University of Science and Technology, Trondheim, Norway (Received 8 January 1996) Abstract--The exergy concept has

High temperature fuel cells (Solid Oxide Fuel Cells - SOFC) can produce electricity and heat from natural gas. The system has very high efficiency levels compared to conventional power plants and the possibility to capture CO2 in a very cost-effective manner. The result is zero emission energy from natural gas.

Discover Alma Clean Power's innovative approach to low and zero emission deep-sea shipping. Explore our Solid Oxide Fuel Cell (SOFC) power systems, designed for fuel flexibility and superior efficiency. Join us in driving the change towards a greener future.