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ZERO CARBON RECEIVES FUNDING TO INTEGRATE NEXT GENERATION FUEL CELL TECH, BOOSTING EFFICIENCY

The Zero Carbon machines convert waste streams to a clean natural gas replacement. The usage for the generated syngas is not limited to electricity generation but has many use cases. The gas can be used to supply heat, distill water, industrial application, and ultra-efficient energy generation.



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so far inefficient, installations, like small steam turbines are inefficient for its power generation only reaches 5%. Most gasifiers use diesel generators for efficiency from 5 to at least 23-24%. The ultimate challenge is converting the syngas via a new kind of Solid Oxide Fuel Cells ("SOFC"), which reaches an efficiency of over 50% while eliminating the need for oil changes and maintenance. Also, the system is quiet, which is a vast improvement over the roaring generator sets currently in use.

SOFC uses a direct chemical process to convert gas to electricity. For example, most applications today use hydrogen, making it the technology of choice for the green hydrogen infrastructure. Fuel cells' efficiency based on stacks remains the same from fuel cells powering laptops to space stations to industrial applications.



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The next-generation Fuel cell developments, start converting gases other than hydrogen, butane, and propane. Gases consist mainly of carbon monoxide, hydrogen, methane, and nitrogen, and unconverted complex carbon structures generally summed up as tar. This allows for the direct usage of the syngas for maximum efficiency power generation without the need for expensive and technically challenging gas cleaning and reforming. It offers a way forward to building highly efficient low noise direct conversion systems at a competitive price and a realistic skill level for business and industry operations.

Integrating SOFC at the end of the Zero Carbon reactors will amplify energy generation, develop a continuous, robust chain, and eventually create self-sufficient communities. The mechanism is a breakthrough technology; a simple, portable reactor can resolve persistent waste problems, as it supplies large amounts of energy to households – both are regardless of the location. Currently, EX Zero Carbon leads the market entrance and commercialization through the crowdfunding of the Zero Carbon reactors. The State Bank of Saxony (SAB) has recently granted additional funding for test cycles testing the integration of SOFC with Zero Carbon under the management of the renowned Fraunhofer Institute IKTS in Dresden. Similar tests are underway integrating the new SOFC System developed by Germanies Kraftwerk Group. This technology is already in larger-scale production and offers a dramatic cost advantage overall.

The testing will be done at the Technical University in Zittau under the Fraunhofer IKTS' Dresden; EX Zero Carbon will provide the gasification and drying unit represented by the engineering team MFC, who built Zero Carbon reactors.



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(Fraunhofer IKTS 6th International Congress in Dresden-Germany)

Fraunhofer IKTS has over 20 years of experience in sustainable materials research. The result of these tests will mark the reliability of the integration. Previously, EX Zero Carbon reactors themselves have also undergone more than 30 university tests in Germany's Zittau Görlitz University of Applied Sciences. The study by the university concludes the viability and stability of the X5 reactor and the clean gas usability. The reactors have successfully resolved the common problem of clinker and mineral removal and monitored the quality of gas produced. Other than the dangerous elements mentioned above, Zero Carbon's gas is free from chlorine and sulfur, which are the two elements that can ruin fuel cell stack. The commercial pilot of the X5 reactor landed in Bali's Udayana University earlier in 2021.

The integration's ultimate goal is to combine electricity and cooling applications in many parts of the world, especially developing countries. The reactor investigates and resolves technical challenges of converting solid waste into clean, synthetic gas and powers fuel cell operation to amplify energy generation. This integration envisions a quiet and clean home energy unit into the market, with double the efficiency, reduced nitrogen oxide emission, at a meager cost.

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fundraising - growth funding - business capital - entrepreneurship - business



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< **WHY EX ZERO CARBON'S TECHNOLOGY IS DISRUPTIVE**
EX INTRODUCES PROBABLY THE ONLY PORTABLE WASTE-TO-ENERGY SYSTEM ON EARTH!
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