STEAMOLOGY

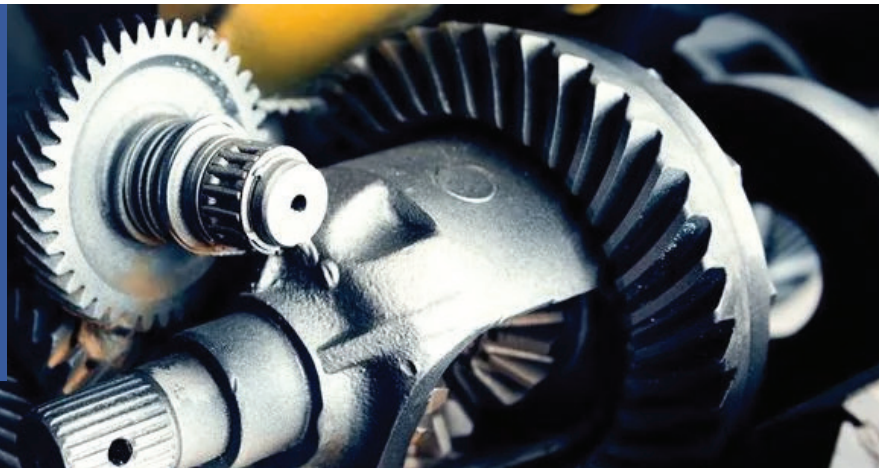
Strathmore University
Energy Research Centre

kiw

UK Government

Steamology

Steamology is collaborating with the Strathmore Energy Research Centre (SERC) to develop an energy generation and storage demonstrator using steam with zero emission for use in various industrial applications.



Steamology

In collaboration with the Strathmore University Energy Research Centre (SERC) specialists in renewable energy (RE) research and training, Steamology is working to transform energy access. Steamology's W2W (Water to Water) system using steam with zero emission for use in various industrial applications can speed up access to affordable, clean energy services for poor households and enterprises in Sub-Saharan-Africa and is open to both on-grid and off-grid solutions.

Innovation

Steamology's W2W system uses renewable energy to power electrolysis to generate oxygen and hydrogen gas which is compressed and stored. The gas is then used to fuel Steamology's energy-dense steam generator. High-pressure superheated steam is used to drive a turbine to do useful work generating electricity on demand. The W2W system has:

- Zero emission - No CO_2, NOX, SOX, or particulates
- High power and torque - 10kW to 1MW range, scalable and modular units
- Low noise and thermal signature - Quiet vibration-free operation, low-temperature signature
- Operating temperature agnostic - Functional in a wide range of environments

Low maintenance - Few moving parts made of standard engineering materials.

Result

The main technical output of the project is the W2W demonstrator housed in a 20ft ISO container. The operational demonstrator includes all aspects of the W2W cycle. The demonstrator has been built commissioned, and tested, including in Kenya. The project has presented multiple technical and engineering challenges throughout and facilitated meaningful development of the W2W solution for zero-emission power. The W2W system has met the Energy Catalyst 7 scope for the Energy Trilemma, transforming energy access and considering gender equality and social inclusion.

Clean
The W2W system is zero emission and aspires to be a cradle-to-cradle product avoiding rare or toxic materials

Affordable
Economies of scale in the hydrogen industry are reducing CAPEX costs. The W2W system has low OPEX cost and long-life components.

Security of supply and energy access
The W2W RE power and storage system can provide secure and reliable energy to communities in off-grid areas of SSA. In addition, the system's modularity makes scaling up easier if/when future energy demands increase.

Steamology is supported with funding from UK government programmes - Energy Catalyst and Innovate UK.

For more information, **visit: www.steamology.co.uk**