

  
**Norway**  
 grants

 The National Centre  
 for Research and Development



## Negative CO<sub>2</sub> emission gas power plant

nCO<sub>2</sub>PP

The primary objective of the project is to develop an innovative technology confirming the possibility of utilization of sewage sludge with subsequent carbon dioxide collection to produce electricity and in such a way showing a positive impact on the environment. The synergy between the CCS/CCU plant and the proposed utilization of sewage sludge (such fuel is considered as a renewable energy source) enables the installation to achieve overall negative emissions of CO<sub>2</sub>. The additional advantage of vitrification of sewage sludge, owing to sufficiently high process temperatures, allows turning this problematical waste into a marketable product.

Completion of the project will return the developed technologies for the management of syngas produced from sewage sludge gasification, and a dedicated wet combustion chamber with the use of oxy-combustion for the type of fuel developed. Finally, the CO<sub>2</sub> sequestration will be demonstrated using the spray-ejector condenser (SEC) combined with a separator. These three aspects are major novelties of the project. Subsequently, the intention of partners is to develop container-based installation to demonstrate the capabilities of the developed technology. Once the system is integrated, it will be possible to capture CO<sub>2</sub> from commonly recognized problematic waste and achieve a positive environmental impact, whilst generating electricity and heat.

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Lead partner

**Gdańsk University of Technology (Gdańsk Tech) – Poland**

Project partners

Institute of Fluid-Flow Machinery of Polish Academy of Sciences (IMP PAN) - Poland  
 Wrocław University of Science and Technology (WUST) - Poland  
 Norwegian University of Science and Technology (NTNU) - Norway  
 AGH University of Science and Technology - Poland  
 SINTEF Energi AS - Norway  
 Institute of Power Systems Automation Sp. z o.o. (IASE) - Poland  
 Bros Control Sp. z o.o. - Poland

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**POLNOR CCS 2019 – Development of CO<sub>2</sub> capture solutions integrated in power and industry processes**

