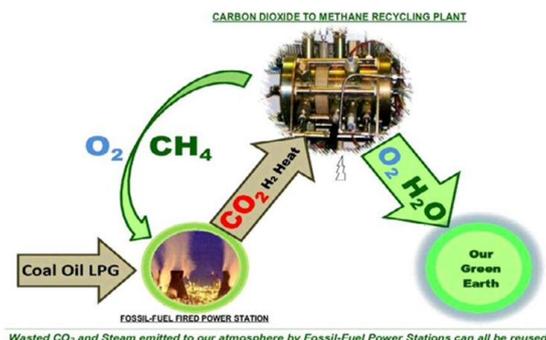


NEW SCIENTIFIC INVENTION HARNESSSES MICROBES IN PROCESS WHICH RECYCLES CO₂ CARBON DIOXIDE TO CH₄ METHANE ELIMINATING FOSSIL FUEL USE

This new invention, proven at Regensburg University in Germany, easily converts CO₂ back into CH₄ (LNG fuel) under special conditions in a special plant. With the contributions from waste CO₂ Emissions, waste heat recovery and other materials from fossil-fuel fired power stations the process converts CO₂ to CH₄ viably.



The world's existing fossil fuel energy supply infrastructure has been developed extensively over the past century and cannot be replaced rapidly by renewables economically. However, considering the current global energy-related economic difficulties and global warming, changes cannot be swept aside and have to be addressed. This New Process can significantly reduce the CO₂ emissions while at the same time enhance the efficiency of fossil-fueled power stations.

Steven Wolfowitz, a Chemical Engineer, harnessed some of the oldest living microbial organisms – Methanogens – under special electrolytic conditions and environment to perform their sole task in life – *methanogenesis* – and convert CO₂ emissions and H₂ into CH₄ (methane). The Process uses automated unique innovative electrochemical control systems, plant and conditions. Methanogens divide and multiply very quickly under certain conditions when they realize their food – CO₂ & H₂ – is available as in this Process environment.

The viability of the Process is enhanced by the availability of the materials without charge mainly from the producers of CO₂. The metabolism of methanogens provides the mechanism with minimal electrical energy input. The world's highest emitters of CO₂ from fossil-fuels, in many cases labeled as the global warming culprits, now have technology to solve this problem while they can continue to enhance the lives of millions by providing clean cheaper electricity. Carbon dioxide (CO₂), Hydrogen (H₂), water (H₂O), Heat (in some cases), Methanogens and Nutrients, are required for the Process. Power stations and GTL (Gas to Liquid) plants can provide and integrate the first four requirements with their existing operations which use them.

Carbon Dioxide (CO₂), results from burning fossil fuels to produce electricity. 8,000 fossil-fuel fired power stations generate and emit 10 billion tons of CO₂ polluting our Earth's atmosphere every year. Furthermore, instead of paying carbon taxes (based on their current emissions) the savings and reduction of fossil-fuel needs and costs would rapidly amortize the capital cost of implementing the Process. Steam, generated in power stations, drives turbines which drive the electrical generators, and is cooled using cooling towers where much water evaporates. The new Process can extract and recover some waste heat using integrated heat exchangers.

Methane is the building block of all hydrocarbons including coal, oil and LPG fossil fuels, petrol, diesel, most plastics, etc. It was previously thought that converting CO₂ to CH₄ could not be done viably. By incorporating microbiological methanogens into this new Process the thermodynamic challenges are overcome. The system can be applied to many of the other CO₂ emitting industries including steel, cement manufacturing, gas-to-liquid plants, etc., which contribute to the emission of an additional 20 billion tons of CO₂ annually. Help is at hand to clean our world and provide huge new industries with many new employment opportunities. The plant designs, processes, conditions and control systems have all been patented. The future of our world is now in our hands.