



## practical applications for the stenger-wasas process (swap)

- 1. The Stenger-Wasas Process (SWAP) is changing the global dialogue about the future of energy, carbon dioxide (CO<sub>2</sub>) and its relationship to climate change. The (SWAP) is not a CO<sub>2</sub> capture process. It is a CO<sub>2</sub> and hydrogen sulfide (H<sub>2</sub>S) conversion and elimination process.** At sites where hydrogen sulfide H<sub>2</sub>S is present, the SWAP breaks down CO<sub>2</sub> and H<sub>2</sub>S, rearranges their components in a near-instantaneous reaction which could yield water, carbon and sulfur. H<sub>2</sub>S is a highly toxic material and a common byproduct in sour natural gas and petroleum refineries and other industries, such as food processing, coke ovens, tanneries and landfills.
- 2. The SWAP is a previously undiscovered energy-releasing reaction that rapidly disposes of H<sub>2</sub>S.** The SWAP has the potential to dramatically reduce sour gas and high-sulfur oil refining costs by eliminating the need for conventional solvent extraction techniques used in the range of today's conventional methods, such as the Claus Process.
- 3. The SWAP may create incentives for the carbon-emitting industries to rapidly institute on-site carbon dioxide capture programs.** Widespread implementation of the SWAP could help develop a market for CO<sub>2</sub> by making the capture and sale to sour gas and high-sulfur crude oil refineries a potentially profitable enterprise.
- 4. Through partnerships with SWAP-equipped refineries, coal plants may potentially eliminate their CO<sub>2</sub> disposal problem – partnerships that may promote the conversion process of coal into syngas (IGCC Process), thereby opening the door for clean coal technology in participating power plants.**
- 5. The SWAP's ability to convert and eliminate CO<sub>2</sub> has the potential to mitigate the need for underground or undersea storage or sequestration** as a means of reducing CO<sub>2</sub> emissions into the air.
6. Rapid and high-quality production of sulfur and carbon by the SWAP could generate increased interest within the aerospace, defense, civil, automotive, pharmaceutical and agricultural sectors.
- 7. The SWAP converts hydrocarbon waste and Claus Process 'hazardous waste' sulfur into valuable industrial chemicals,** among them carbon fiber-like compounds of controllable electrical conductivity that can be extruded.
- 8. The SWAP may generate polyurethane-like foams from two very abundant and inexpensive raw materials.** This material has applications in the construction and housing industry.
- 9. The SWAP can purify harmful gases that emanate from landfills where H<sub>2</sub>S is present.** The SWAP has major applications for CO<sub>2</sub> and H<sub>2</sub>S reactivity in waste management as a means to permanently convert unwanted hydrocarbon materials, making profit centers for these sites that otherwise would see waste buried underground.

*For additional information, please contact:*

**Evan Howell, EVP**

SWAPSOL Corporation

*SWAP for a new energy economy*

*business@swapsol.com www.swapsol.com*

1 Deer Park Drive, Monmouth Junction, NJ 08852