

Post-mining integrated complex for underground storage and utilization of biogas and carbon dioxide comprises depleted underground hydrocarbon reservoir with structural traps, fluid-impermeable control horizons above reservoir layers, wells for various technological purposes for gas injection and production, formation water extraction, on-site gas purification and drying modules, compressor station, internal process lines and storage tanks, and power and hot water supply module. Complex includes above-ground biogas plant and storage facility with wells for separate injection, storage, and production of biogas and carbon dioxide, modules for formation water degassing and gas separation, ammonia synthesis, and production of methanol and dimethyl ether.