The solar technology of the Kender Engine

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PHASE 1 (See illustration below) Helium (He) is stored in a small tank at 200 atmospheres and runs in a closed circuit (phase 1). Other gases than helium are also explored. The helium is released out and spins the main turbine, such as in a classical compressed air engine, and generates electricity.PHASE 2 (See illustration below) Helium, subsequently, drops from 200 atm to 20 atm (Phase 2) and its temperature drops from 20 C° (69 °F) to minus 240 C° (minus 400°F). This temperature drop is a consequence of the law of perfect gases (Pressure * Volume = N * r * Temperature), where the temperature drop is proportional to its pressure drop (pipe is illustrated in white).PHASE 3 (See illustration below) A compressor pushes the low pressure and low temperature helium into a heat exchanger (Phase 3). This compressor consumes energy for creating this continuous gas flow and maintaining the low pressure before it. PHASE 4 (See illustration below) In the heat exchanger, the helium moves from its very low temperature back up to 20 C° (69 °F) by heating due to the temperature of the air surrounding the heat exchanger (Phase 4). As the helium moves back up in temperature from -240 C° to 20 C°, its pressure builds back up to 200 atmospheres (Phase 4). This is again the application of the law of perfect gases (Pressure * Volume = N * r * Temperature). The surrounding air, obviously, will drop in temperature, as it transfers its thermal energy to the helium. PHASE 5 (See illustration below) As a result, the helium has run a full circle in the closed circuit, back into its initial position at its original temperature and pressure (Phase 5). This full circle allows the main gas turbine to receive a continuous flow of helium and to spin as long as the compressor (Phase 3) keeps the helium in motion. The energy produced by the main turbine is higher than the energy needed for the compressor to generate and maintain the gas flow. This difference in energy is provided by the air temperature differential heating the helium.