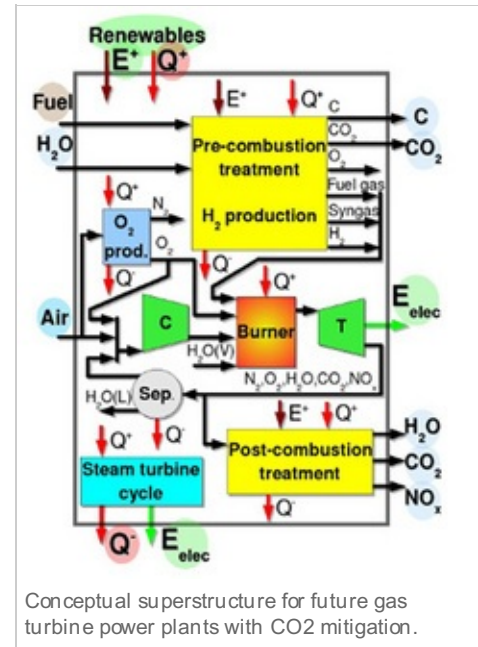


Technologies for Gas Turbine Power Generation with CO₂ Mitigation (GT-CO₂)**

Scope of project

The world primary energy demand is expected to double by 2050. It is assumed that this increased demand cannot be solely covered by renewable energy sources (such as hydro, wind, or solar), or by nuclear energy. Thus, an increased number of fossil-fuel-powered gas turbine systems for electricity generation will be implemented in the coming decades.

The current project addresses specifically the challenge of developing a gas turbine with reduced CO₂ emission. Advanced technologies in various fields (fuel conversion, membrane systems, enhanced heat management) will impact future gas turbine concepts. Thermo-economic process modeling will be applied to select promising technology pathways toward a zero emissions, fossil-fuel powered gas turbine. The overall goal is a commercially viable process for mitigation of CO₂ at a cost of 2 avoided. The modeling effort will establish quantitative targets for process components (e.g. sequential combustor, turbomachinery and membrane-based air separation).



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**) Finished project