

GTT-Technologies contributions to the „Energiewende“:

The DüSol and PCM projects

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Besides more efficient combustion technologies, new ways of natural energy usage and energy storage are needed for the “Energiewende” (German for “Energy transition”). Two projects will be introduced in this talk:

In the first project DüSol (“Nachhaltige Düngerproduktion aus Sonne, Luft und Wasser”, German for “Sustainable fertilizer production from sun, air and water”) two redox cycles shall be coupled to produce N_2 from air and H_2 from water, respectively. The energy needed will be harvested from a solar thermal collector. GTT-Technologies will contribute with a thermodynamics based screening to identify materials that are suitable candidates for the redox process.

In the second project PCM (“Phase Change Materials”) suitable energy storage materials for air conditioning, heat pumps and small cogeneration units (up to 100°C) are investigated, as well as for industrial heat recovery for conventional and solar power stations (100 to 500°C). For the lower temperature range, hydrated salt mixtures are the aimed candidates, while non-hydrated salt mixtures will be the target group for industrial applications. GTT-Technologies will contribute with a thermodynamics based screening to identify materials that are suitable candidates for the redox process in the DüSol project, as well as eutectic mixtures with optimized properties for the PCM project.