Project Summary

Project Background
In recent years the successful efforts of the development cooperation in introducing innovative renewable energy technologies have led to new missions in the field of solar thermal power generation (CSP). One of them is the Brazilian CSP project of German Climate Technology Initiative (DKTI), implemented by GIZ and KfW (see www.energiaheliotermica.gov.br).

The Brazilian Energy Planning Authority expects total electricity consumption to double by 2030. Concomitant a significant increase in the process heat sector is expected. An increasing dependence of Brazil on primary energy imports is observed, part of which is used for process heat supply.

However, the supply from renewable energy for (technical) heat or refrigeration is less environmentally protective, secure supply and the economy is much more difficult to be characterized as in the electricity needs. Thus immediate observation of the process heat generation in the DKTI-CSP projects take over special role.

Project Objectives
The project component “non-electric applications” concentrated its efforts on substituting fossil fuels or electricity utilization in production processes in the Brazilian industry where heat in the middle and high temperature region (150 to 500 °C) is necessary. For Brazil relevant and appropriate non-electrical CSP processes were identified. The final goal was the preparation of the implementation process for pilot plants and provision of convincing documentation of the CSP technology for the decision makers in Brazil.

Project Results
1.) Decision makers in government agencies, industry and banks – at federal and local level – received comprehensive documentation on possible and relevant non-electrical CSP applications in Brazil (focus northeastern region), including cost-benefit analysis, funding opportunities and legal regulations for plant operation.

2.) One pilot plant for non-electrical CSP processes is in the process of implementation.

3.) Another four companies intend to follow up on the implementation of custom-tailored CSP plants together with German companies based on detailed feasibility studies. Cooperation agreements have been signed.

4.) The German Solar Institute Jülich (SIJ) and the University of Ceará (UFC) have initiated the creation of a joint research platform for CSP technology development.

5.) A cooperation agreement with the industry association of Ceará (FIEC) has been signed.

Services Provided
- Planning meetings with the national partners MCTI, EPE, ANEEL and with the regional industry association partners as well as research institutions;
- Assessment of information needs and identification of potential users for non-electrical CSP applications as well as identification of German and Brazilian manufacturers/potential partners;
- Information sessions and workshops with national and regional partners and potential users;
- Data collection in the field of economic benefits and environmental influences of non-electric CSP;
- Elaboration, presentation and dissemination of a decision paper about possible and relevant non-electrical CSP applications in Brazil, including economic, ecological, technological and socio-economic advantages;
- Preparation of 5 detailed feasibility studies for the integration of CSP plants into the production process of companies from different industrial sectors (paper, textile, foods, automobiles);
- Proposals for the design of pilot plants, including the integration of the plant into existing energy systems and environment, cost-benefit analysis, research about funding opportunities and legal regulations for plant operation, environmental protection report, identification of local production of components, coordination between German and Brazilian manufacturers, etc;
- Support of cooperation agreements between German and Brazilian companies or research institutes, preparation and signing of MoU.