Project Summary

Project Background
The overall aim of the Energy Program Brazil - Phase I - was to enhance the significance of energy efficiency (EE) and renewable energy (RE) (excluding large hydropower and biofuels) in the Brazilian energy supply. The program comprised the components (1) energy efficiency, (2) rural electrification, (3) renewable energies and (4) methods of energy planning.

Project Objectives
One main task of the RE component was to promote the use and the dissemination of renewable energies with special emphasis on wind power and biogas in co-operation with public actors (e.g. Eletrosul, ADECE). A specific focus lay on the transfer of knowledge to the partners particularly to solve technical problems.

Project Activities
Within the scope of the project, INTEGRATION provided a highly qualified expert pool for specific consultancy and the transfer of know-how with respect to diverse aspects of wind power and biogas systems.

In the wind energy sector the transfer of knowledge focused on the operation and the maintenance (O&M) of wind parks with the following subjects:
- Inspection and maintenance of wind turbines: electrical system, hydraulic system, components;
- Operational data analyses: collection and evaluation of operational data;
- SCADA systems;
- Condition monitoring systems;
- Technical optimization of the operation;
- Occupational safety.
Furthermore, the experts could offer extensive experience in site assessment, plant design and the implementation of wind park projects.

The expertise in the biogas sector included:
- Survey and analysis of biogas potentials;
- Conceptual planning of integrated biogas projects;
- Substrate composition, substrate mixtures and substrate analyses;
- Gas processing;
- Power and heat generation from biogas including energy efficiency in biogas plants (insulation, heat losses, efficiency optimization of the overall system);
- Treatment and use of digestate;
- Process control and monitoring of biogas plants;
- Efficiency of the overall concept;
- Occupational safety in biogas plants.

Services Provided
- Technology and transfer of know-how on wind power plants and biogas plants
- Site assessment and concept development for biogas plants
- Organisation and implementation of workshops and study tours to Germany
- Development of training materials und training modules
- Implementation of trainings including site visits

Brazil
Energy Program Brazil - Phase I, Expertpool for Component "Renewable Energy" (Wind, Biogas)

Client
German International Cooperation (GIZ)

Duration
02/2010 - 12/2012

Personnel
- intern. expert pool biogas (5 PM)
- intern. Expert pool windpower (2 PM)