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CLIENT II
Internationale Partnerschaften
für nachhaltige Innovationen

LoSENS – Local sustainable energy systems in Senegal

Client II – International partnerships for sustainable innovations

In Senegal and other West African countries, local energy policy prioritizes electrification, increasing energy production, and reducing dependency on fossil fuel imports. The main focus is on promoting renewable energies. The German-Senegalese project "LoSENS" develops locally adapted solutions for improving energy efficiency and expanding renewable energies in order to reduce resource consumption and environmental pollution while at the same time strengthening innovation and economic power in Senegal.

Local sustainable energy systems

Like other countries in Sub-Saharan Africa, Senegal experienced a severe energy crisis in the first decade of the 21st century. Since then, Senegal's vision has been to make energy available throughout the country while also taking social and environmental factors into account.

"LoSENS" aims to develop and perpetuate cooperation between Senegal and Germany in the field of sustainable energy systems. The project focusses on the exchange of applied technical knowledge and the transfer of technology to support energy efficiency and renewable energy policies.

Ministerial visit to the International Circular Economy Week 2017, Environmental Campus Birkenfeld.

Senegal's ambitions in the energy sector represent great business potential and will bring about a multitude of business opportunities for the environmental technology sector, especially for Germany. However, technologies from Germany cannot be introduced into new foreign markets without country-specific adaptation. A "pull strategy" is recommended, which creates initial local demand for innovative and sustainable solutions. "LoSENS" works to develop such a pull strategy by preparing energy and climate action master plans for two communities and then implementing these through training and education (capacity building).

The development of such master plans for two selected Senegalese model communities – the city of Saint-Louis in the north and the municipality of Balingore in the Ziguinchor region of southern Senegal – serves to identify specific areas where action is needed and to implement tailor-made solutions based on sustainable German technologies and energy systems. While creating the master plans, the need for action in various municipal fields will be identified, and local decision-makers will be encouraged to invest in innovative solutions, especially from Germany.

Demonstration projects and capacity building

The "LoSENS" approach involves activities at three different levels. On the first level, energy and climate action master plans will be developed for both model communities. Within the framework of the master plans, the current state (actual analysis) of energy production and use (energy reduction) will be recorded and evaluated. For this purpose, existing energy flows, costs, key stakeholders, and potential opportunities for implementing renewable energy and energy efficiency measures will be recorded. A new model for local/regional energy production and supply will be developed in cooperation with the participating small and medium-sized German enterprises and the local partners in Senegal.

On the second level, four demonstration projects for sustainable energy concepts will be developed, implemented, and monitored. These include installing 100 energy-efficient LED street lamps, implementing a 100 kWp photovoltaic system with a battery storage capacity of up to 100 kWh, implementing a pump management system for municipal supply and disposal facilities, and conducting a technical feasibility study for the treatment of biogenic waste using biogas technology. Putting these demonstration projects into practice will generate real information about actual operations.

The third level comprises the capacity building of local stakeholders in a two-stage process. The "train-the-trainer" principle will be used to develop and implement training courses for students and multipliers as well as further education measures for companies, authorities, communities.

The Willingshausen biogas plant, with a plant capacity of 800 Nm^3/h and an annual production of 9.1 million Nm^3 of biogas and 3.5 million Nm^3 of biomethane.

Municipal energy supply service providers

The idea of "LoSENS" is based on the concept of creating regional added value. By optimizing energy systems, money can be saved, which can then be used to finance energy efficiency and renewable energy technologies. Across all levels of the partnership, business plans and financing concepts will be used to highlight ways of tapping into economic potential. By becoming energy producers, not energy consumers, municipalities, companies, and the local population will therefore also gain direct access to the energy market. In addition, new business areas will open up in the field of renewable energies and energy efficiency. The project's final outcome will include an investment and business plan for implementing a municipal energy supply service provider.

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