

## International Climate Initiative

### Climate Partnerships with the Private Sector: Decentralized Water Purification in Colombia

Colombia faces major challenges in the water sector, especially in rural areas and on its islands. There is an immediate need to develop innovative technologies specifically targeted at remote areas to provide drinking water to more than 3.1 million Colombians and to avoid diseases such as hepatitis A, typhoid / paratyphoid and acute diarrhoea. One solution is decentralized desalination systems. Off-grid solutions for the production of solar and wind energy as well as small desalination systems are already available. Successful implementation on a larger scale is hampered by a lack of operational models and the high costs of maintenance and operation.

The aim of the project is the development of a smart grid for the control of decentralized desalination plants based on renewable energies and the development of an operator model to demonstrate cost-effective and energy-efficient ways of improving drinking water supply, especially in rural areas of Colombia. Smart grids are designed to enable the economic operation of decentralized units, the centralized management of the business as well as the monitoring of the plant engineering and the quality of the water. This makes decentralized units economically interesting for state and private water supply companies. The project company MFT Membran-Filtrations-Technik GmbH will cooperate with the Colombian company ColEnergy S.A.

The first desalination plant of the demonstration system will be installed in La Guajira province. If the project is successful, the probability of replication is estimated to be high due to the demand for small solar-driven water desalination plants, especially in the coastal areas in Colombia and on the islands with no or limited access to water/electricity. The decentralized applications make costly infrastructure investments redundant. For further sites, the desalination units are to be produced in a standardized manner, so that the technology can be offered as a turnkey solution to the various target groups.

By bundling decentralized desalination plants via a smart grid, water supply companies can secure the supply of high-quality drinking water to the population. The project contributes to Sustainable Development Goals 3, 6, 7, 9 and 11.

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<b>Country:</b>	Columbia
<b>Implementation:</b>	DEG - Deutsche Investitions- und Entwicklungsgesellschaft mbH, Köln
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INTERNATIONAL CLIMATE INITIATIVE (IKI)



**KFW** DEG

based on a decision of the German Bundestag