



## Renewable Energies, Emission Reduction and Sustainable Economic Growth in Chile

In recent years, the expansion of renewable electricity generation capacities in Chile has experienced rapid growth. More than 40% of the Chilean electricity is currently produced by renewable energies, of which one third comes from wind and solar energy. Latest potential analyses show that Chile could cover its electricity demand more than a hundred times with renewable energy sources.

Only in the North of Chile, at least 1,300 GW of wind and solar energy capacity can be provided. In the most recent public tender for energy supplies, solar energy was offered with prices below 30 US dollar per MWh. This leads automatically to the question: How can we utilize this enormous potential for generating renewable energy cost effective in Chile in order to contribute to the economic growth of the country, or how cheap solar energy can be used productively in the future?

Within the scope of the project of the German Climate Technology Initiative (DKTI) "Promotion of solar energy in Chile" funded by the German Environment Ministry (BMUB), this aspect among others, is being investigated.

### Innovative Solar Industrial Applications

As one aspect, within the BMUB sponsored DKTI project, large-scale seawater desalination in the North of Chile using solar energy is being studied. In the desert region of Northern Chile, solar-produced fresh water could be used as drinking water supply for the population, as well as in agriculture and mining. Chilean Economic Development Agency (CORFO) is supported by the DKTI project to analyse the demands of different industrial sectors to attracting investors in so-called "solar districts" in order to match supply and demand.

One of the long-term goals of CORFO is the environmentally friendly development of a "green mining sector". Attractive innovations are possible for the further processing of copper, e.g. for cost-efficient applications in thermal processes like in furnaces by using energy from concentrated solar technologies.

Chile, which has large mining resources, wants to produce these materials in the future development in a

more sustainable way. The creation of an “International Institute for Solar Energy and Mining” (Instituto Solar-Minero) aims to give these developments more support.

## Renewable Energies and Transport

The DKTI project assists CORFO in the promotion of hydrogen production out of solar energy under favorable solar radiation conditions in Northern Chile. This “green” hydrogen can be exported and used in Chile, both as energy storage and in the transport sector.

The prototype of a hydrogen-powered mining dump truck to be used in the mining industry is currently being developed under CORFO funded pilot project. Private Chilean haulers are already investigating how large bus and truck fleets could be operated in the future with hydrogen.

## Our Approach

The DKTI project implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH on behalf of BMUB supports Chilean institutions and the private sector in exploiting the enormous renewable energy potentials not only to achieve a sustainable power supply for Chile but also for general sustainable economic development.



Specific measures include:

- Awareness raising among stakeholders (policymakers, institutions and the private sector)
- Consulting with local and international experts
- Support of technology transfer
- Pre-Feasibility studies
- Monitoring and evaluation of pilot projects
- Dissemination of results and “outreach” to other countries

The overall objective of the project is to assist the Chilean government in its efforts to promote the expansion of renewable energies for Chile’s energy supply, to sustainably strengthen the country’s economic development, and, thus, to support the transition to a low-emission development path by reducing CO<sub>2</sub> emissions.

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**Contact:** Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH  
Rainer Schröer  
Marchant Pereira 150  
Santiago, Chile  
Email: [rainer.schroer@giz.de](mailto:rainer.schroer@giz.de)  
[www.4echile.cl](http://www.4echile.cl)



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