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### **In BMWK's H2Uppp Programme, GIZ and K-UTEC join forces to value reject brine and enhance Green Hydrogen projects' sustainability**

- *This project is implemented in Chile, a country with high renewable energy potential and water scarcity and it will bring benefits to other arid regions as well.*

The International Hydrogen Ramp-Up programme (H2Uppp) of the Federal Ministry for Economic Affairs and Climate Action (BMWK) initiated a Public-Private Partnership (PPP) between Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and K-UTEC to develop in Chile solutions for valuing reject brine as a result of seawater desalination process in the green hydrogen production. The cooperation was officially kicked off on the 4<sup>th</sup> of December 2024 at the Hydrogen Dialogue in Nuremberg.

The PPP-project "Brine-to-Value: Valorization of Reject Brine to Enhance Ecological and Economic Process Sustainability" focuses on converting reject brine into valuable products like sodium, potassium, and magnesium salts. This partnership seeks to reduce environmental impacts and improve the economic feasibility of green hydrogen projects using desalinated seawater.

By using methods such as fractional salt crystallization compensated by solar evaporation as well as mechanical evaporation or membrane technologies, high salinity brine flows can be reused to obtain these valuable salts and recover water to be reused in green hydrogen production.

The PPP-project supports the development of the green hydrogen industry in Chile and includes the development of a technical and economic pre-feasibility study to produce valuable salts and green hydrogen from desalinated seawater, defining the minimum required project conditions and location criteria for the successful implementation of such a project.

Dr. Marx, CEO of K-UTEC, says: "The Brine-to-Value project exemplifies our commitment to developing innovative solutions that enhance both ecological and economic sustainability in the green hydrogen sector. By converting reject brine into valuable salts, we address a critical challenge of desalination processes while contributing to the circular economy. This partnership with GIZ through the H2Uppp initiative aligns with our expertise and vision and aims to make green hydrogen production not only environmentally sustainable but also economically viable. Chile offers an ideal environment for demonstrating the potential of these technologies, and we are excited to contribute to advancing the global hydrogen economy."

Green hydrogen is essential for advancing the global energy transition and tackling climate change. Through the H2Uppp initiative, BMWK supports entrepreneurial efforts and early-stage project

development to strengthen the global hydrogen market. The BMWK focuses on encouraging investment and accelerating the growth of the international hydrogen economy. Moreover, hydrogen projects drive local economic benefits by creating jobs, generating tax revenue, and fostering business growth through production, local use, and international trade of green hydrogen and its derivatives. H2Uppp helps address future green hydrogen demand in Germany and Europe while promoting technology transfer.

Green hydrogen is vital for Chile and Germany as it supports their energy transitions and climate goals. Efficient water use is crucial in producing green hydrogen, ensuring sustainability in the process. Chile can leverage its abundant renewable resources and water management strategies to become a key supplier, while Germany relies on green hydrogen imports to decarbonize industries and reduce fossil fuel dependence.

Disclaimer:

The International Hydrogen Ramp-up Programme (H2Uppp) of the German Federal Ministry for Economic Affairs and Climate Action (BMWK) promotes projects and market development for green hydrogen in selected developing and emerging countries as part of the National Hydrogen Strategy.

As a federally owned enterprise, GIZ supports the German Government in achieving its objectives in the field of international cooperation for sustainable development. GIZ has been commissioned by BMWK to implement H2Uppp. GIZ also acts as the public partner in PPP projects that are implemented as part of H2Uppp.

K-UTEC AG Salt Technologies (K-UTEC) is an engineering and consulting company specialized in salt extraction and processing with more than 75 years of experience in this industry.