

IIGE's Nexus perspective on: Energy-Water



República del Ecuador



Gobierno del Encuentro

Juntos cumplimos

Agenda

- Introduction
- Links between renewable energy and water
- Generated nexus
- Experiences and opportunities

Mission and Vision



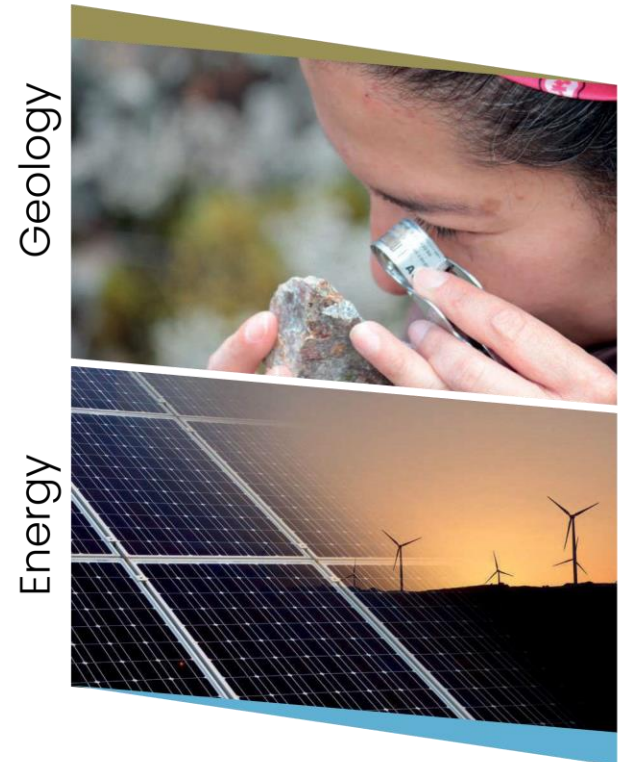
Created by Executive Decree No. 399 of May 15, 2018.



MISSION: To generate and promote knowledge in the field of geology and energy, through scientific research, technical assistance and specialized services for the responsible use of renewable and non-renewable resources, contributing to decision making for the benefit of society.



VISION: To be the regional research institute of reference in matters of geology and energy, that fosters innovation and technical development for the responsible use of renewable resources and non-renewable, with social, environmental and enhancing its human capacities committed to the progress of country.





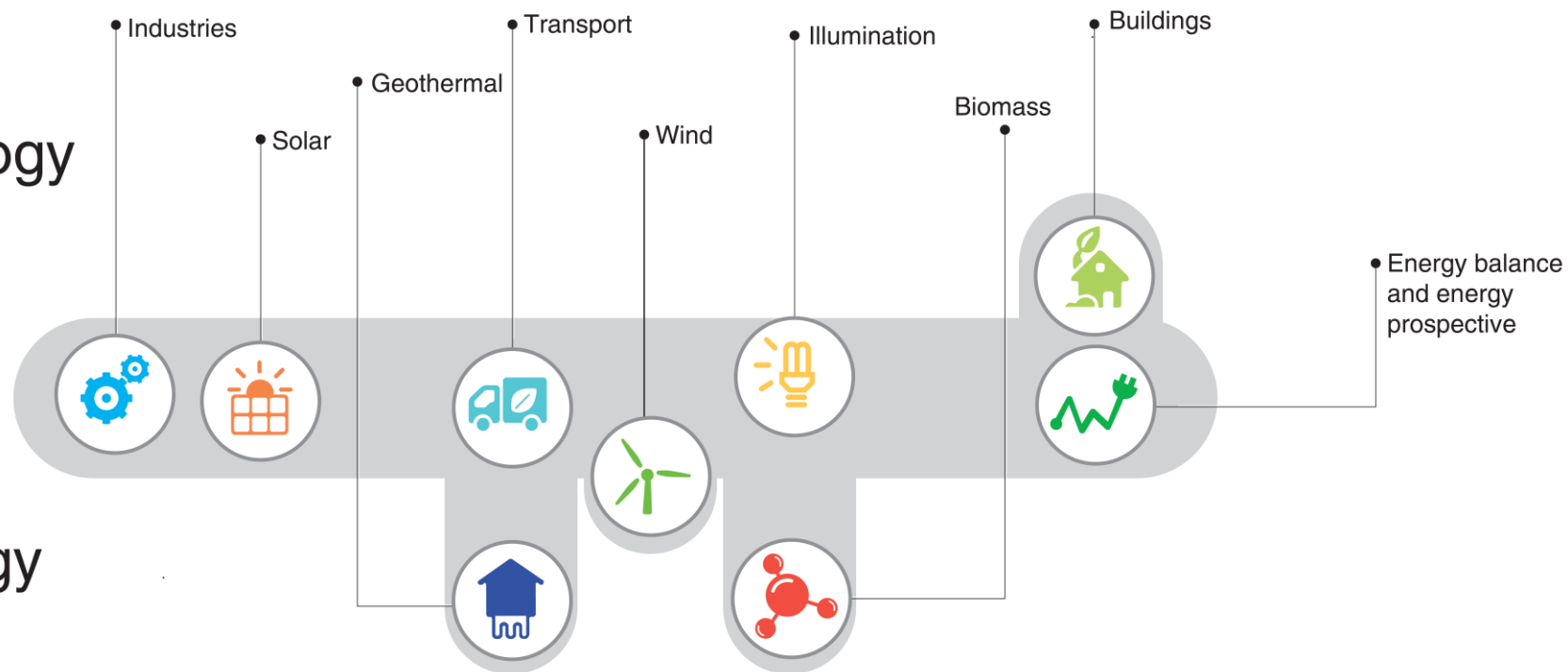
Energy research area



• Geology

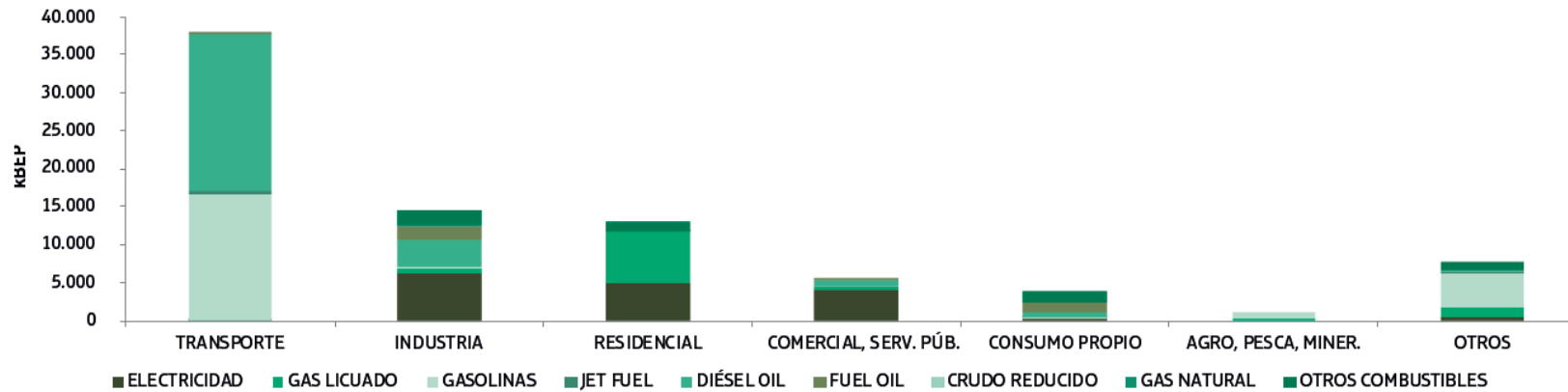


• Energy

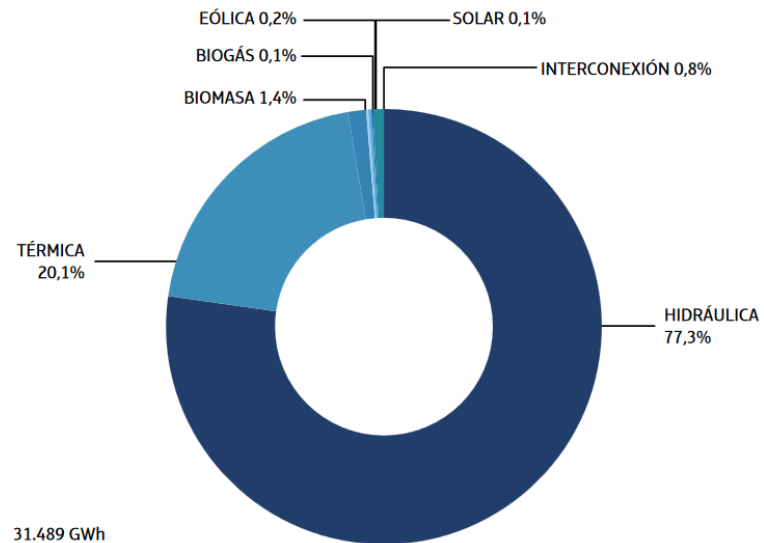


Energy balance in Ecuador

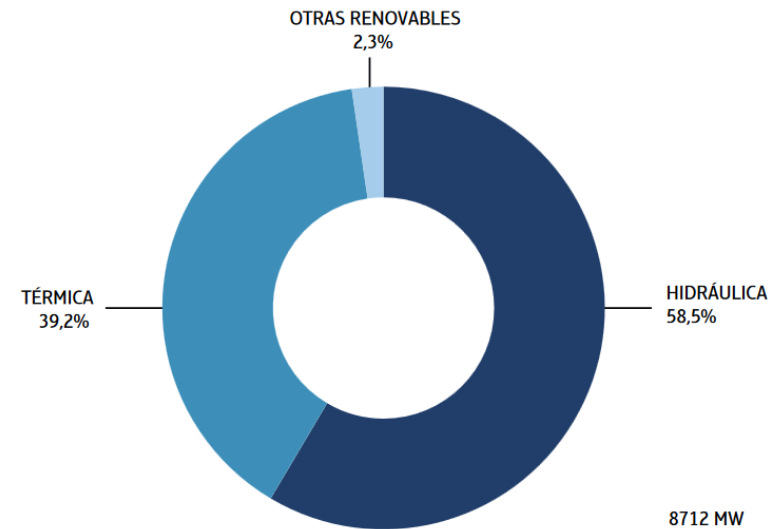
Energy consumed by sector and source



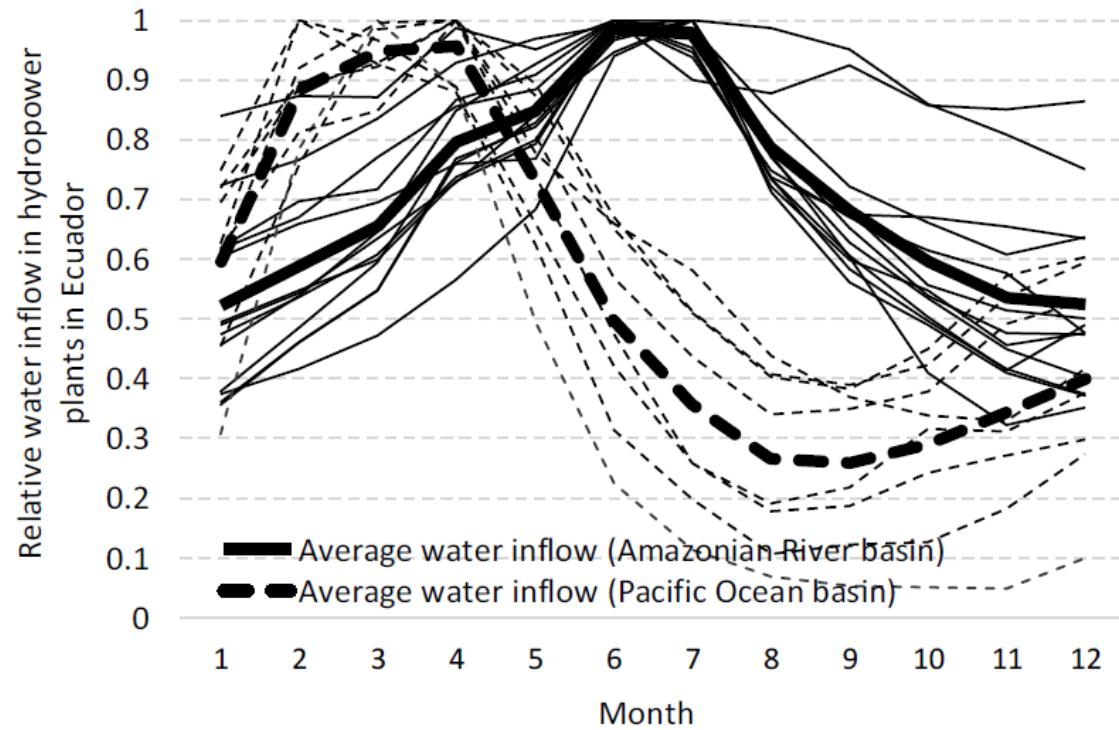
Electricity generation by source



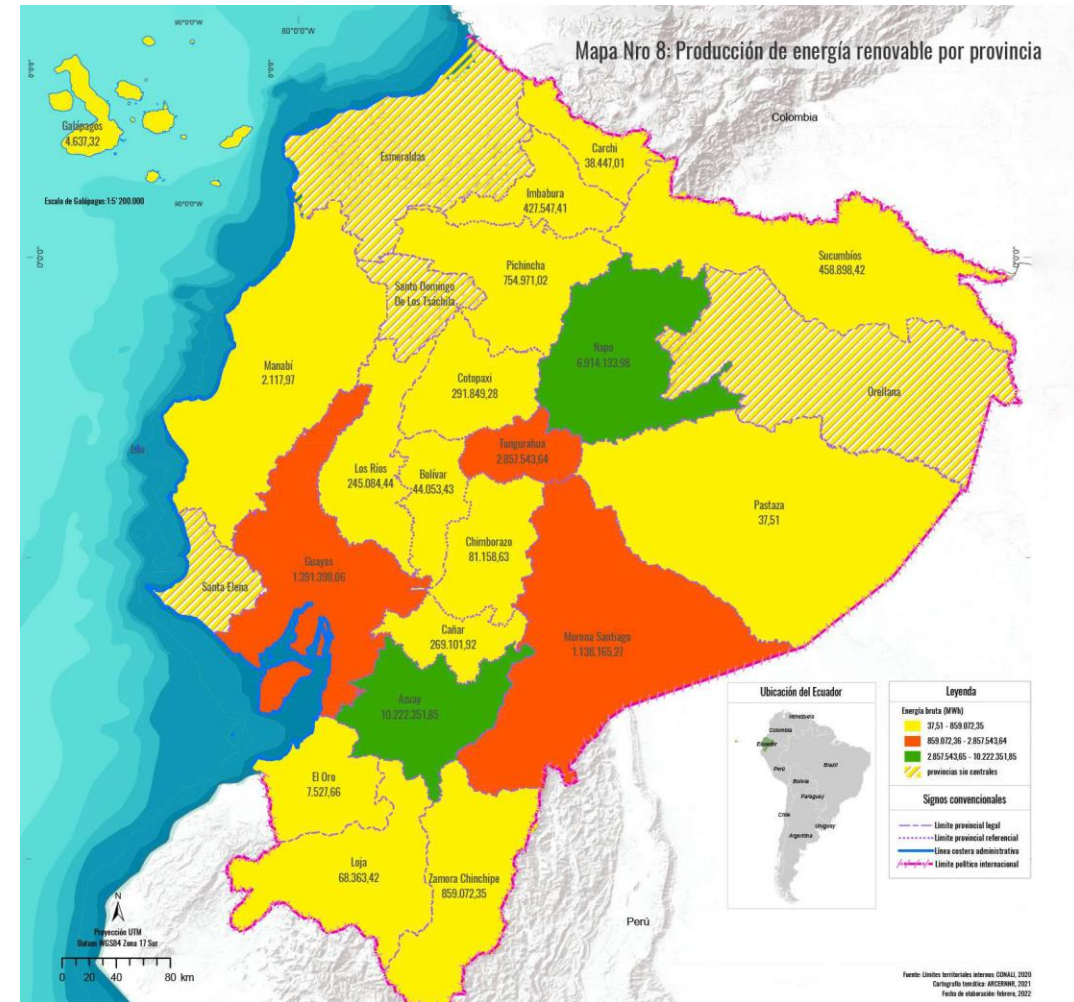
Power Capacity



Water inflow for hydro generation in Ecuador



Source: Pelaez-Samaniego, M.R. Potential and Impacts of Cogeneration in Tropical Climate Countries: Ecuador as a Case Study. *Energies* **2020**, *13*, 5254. <https://doi.org/10.3390/en13205254>,

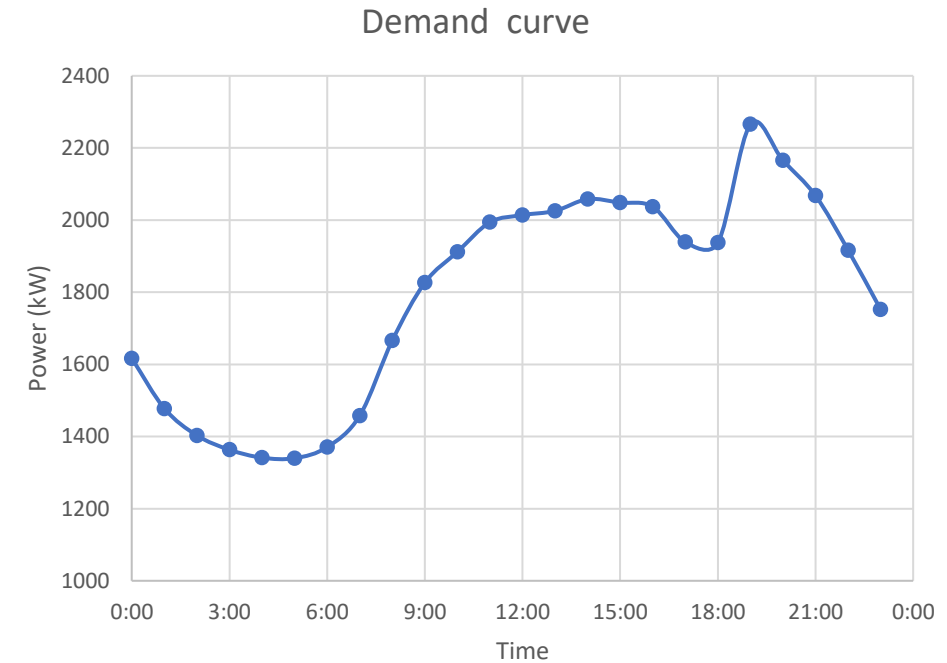


Source: Atlas del Sector Eléctrico Ecuatoriano 2021 - ARCERNNR



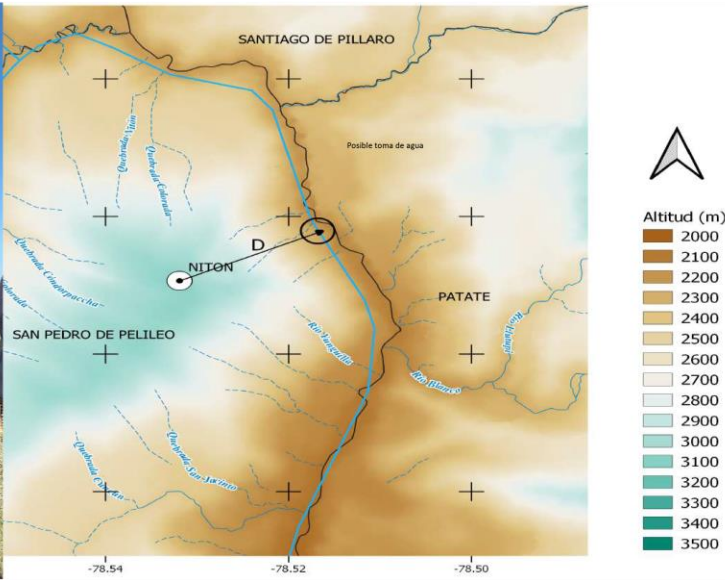
Source: <https://observatorioelc.ister.edu.ec/2021/04/26/centrales-hidroelectricas-del-ecuador/>

Pre-feasibility evaluation for Water pumping storage with wind energy in San Cristobal – Galapagos

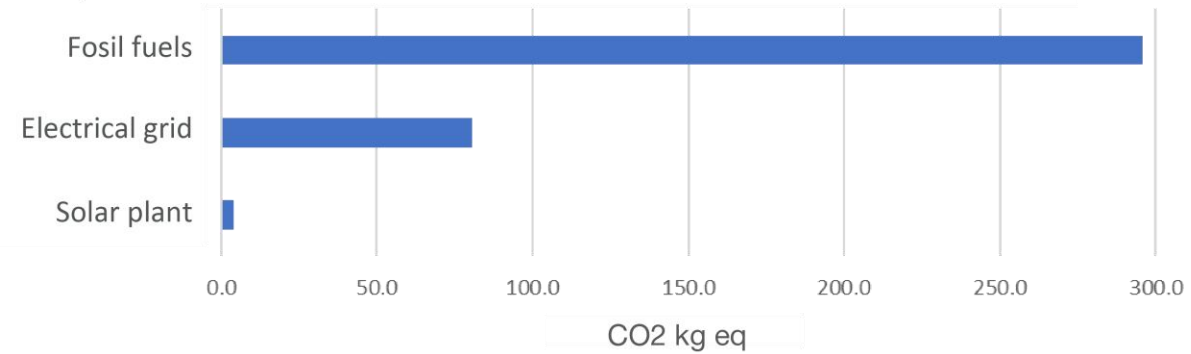


Source: Burbano , V., & Narváez, R. (2021). Evaluación de la pre factibilidad para la generación de energía eléctrica mediante la sinergia entre las energías eólica y almacenamiento por bombeo de agua en la isla San Cristóbal - Galápagos. Revista Técnica "Energía", 17(2), PP. 29-43. <https://doi.org/10.37116/revistaenergia.v17.n2.2021.414>

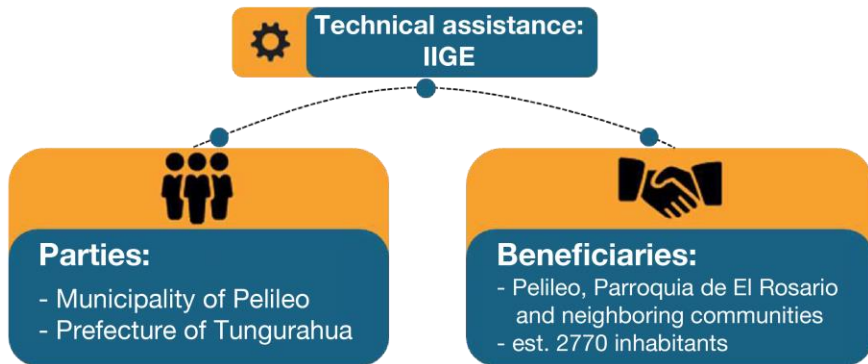
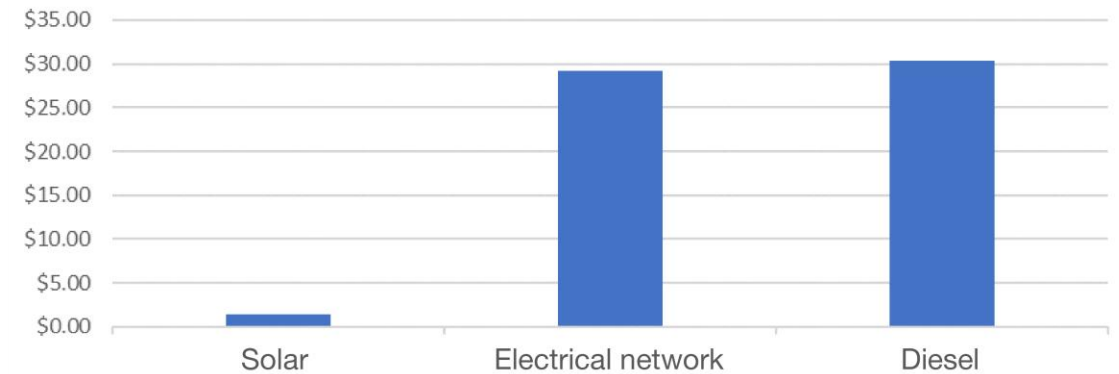
Solar energy potential for water pumping in "Cerro Nitón"



kg of CO2 emitted per hourly operation

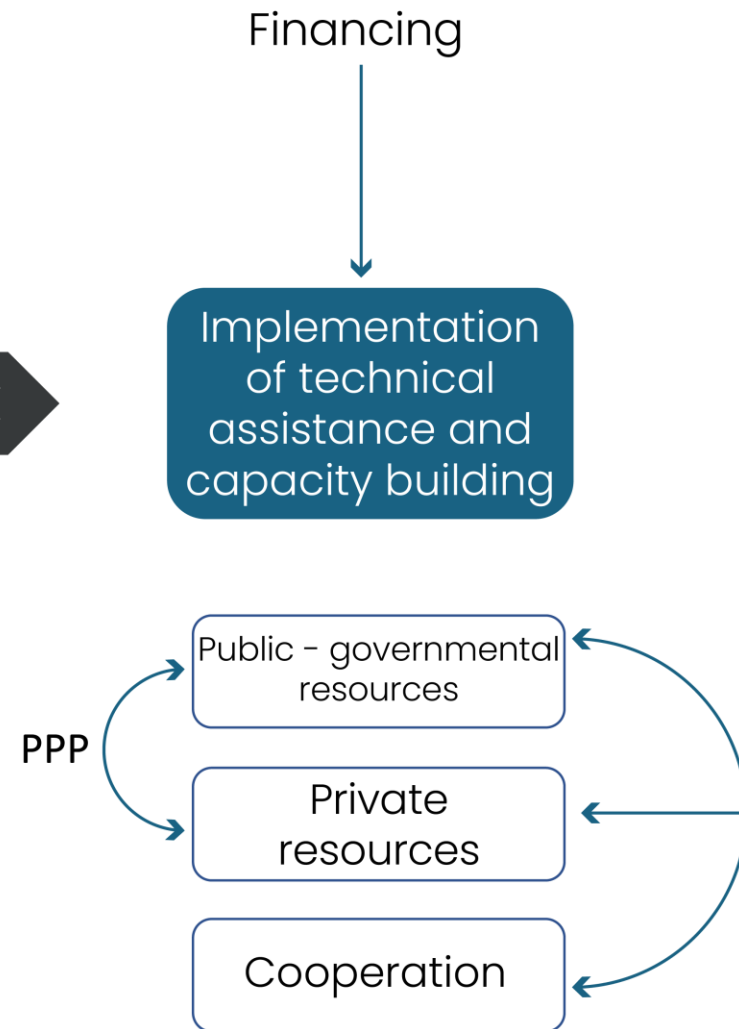
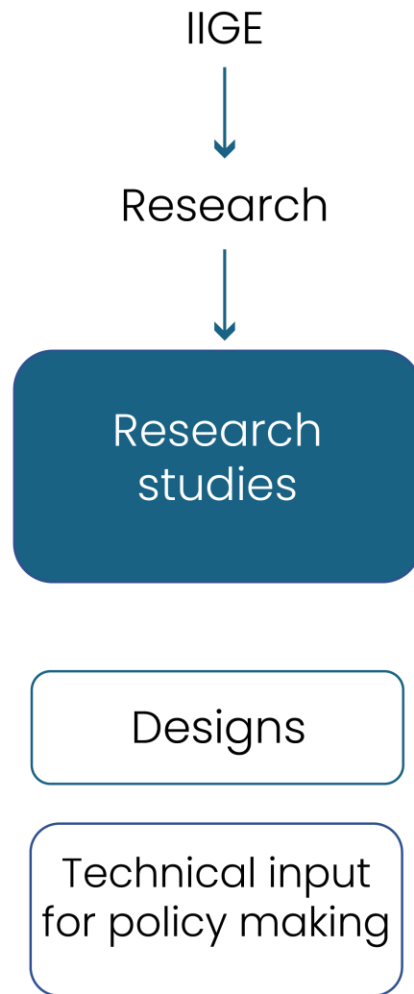
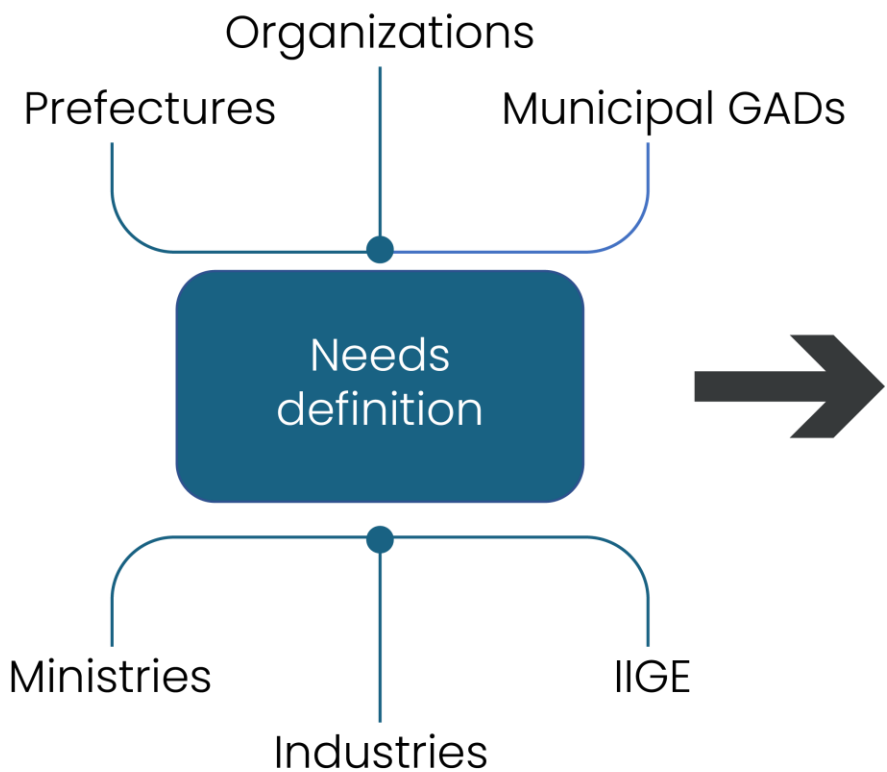


hourly operation cost





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Thank you

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