Montevideo energy storage policy updates

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The climate crisis threatens water management and the water crisis in Montevideo, Uruguay, in 2023 illustrates the damage new industrial projects could cause if not thoroughly assessed. With green hydrogen projects gaining international prominence, it is vital they are properly planned.

Climate change drives regionally shifted variations in precipitation, which can cause flooding as well as water scarcity. Water management is becoming increasingly important to ensure a reliable supply of potable water and food production amid a changing climate.

A recent example of water mismanagement occurred in Montevideo, Uruguay, where a state of emergency was declared due to an extreme water shortage in the capital. The state of emergency permitted infrastructure to be extended in protected areas without social or environmental impact assessments. Lack of information raised questions regarding population impacts, the permanent character of infrastructure, water supply security, and compensation for livelihood losses.

The decision process in this emergency exemplified the role water crises can play in a climate-changed world, and should drive global efforts to reconsider water management plans. How will water resources develop? How should we assess current and future water availability for industrial-scale demand? What impact will the coupling of energy and water demand, through green hydrogen production, have and how can we start off well in the development of such projects?

This highlights that new projects should not exacerbate existing water scarcity. The economic development of project sites, including industries that might be attracted by hydrogen infrastructure, should be considered when estimating future water demand. It is imperative to require new industries to achieve a high degree of water recycling efficiency. Total water demand should then be compared to groundwater recharge rates, taking climate change into account.

These concerns likely also hold true for green hydrogen plants, which could certainly exacerbate water scarcity. Many nations with green hydrogen potential suffer, or have suffered, from the unjust power structures rooted in colonialism and it is crucial not to reinforce such situations. Green hydrogen projects should benefit importing as well as exporting countries. This should not be limited to economic benefits but should also take into account the needs and sustainable development goals of producing countries, for example in the field of energy.

To ensure sustainable project development, potential green hydrogen exporting and importing countries should be responsible for building capacity, expertise, knowledge, and awareness of the abovementioned concerns. Joint development legislation for green hydrogen production, transport, and trade should also serve

the needs of all stakeholders. Taking into account social, environmental, and cultural aspects may take longer than the current top-down infrastructure planning approaches but would create greater acceptance of, and support for sustainable projects.

Given the potential for international water-intensive projects, including green hydrogen plants, to increase water scarcity, policy makers and project developers should take the following actions.

Consider climate change effects in environmental impact assessments (EIAs): Independent EIAs, including for water use, must be mandatory for green hydrogen projects and should be considered in combination with other water users. Projects that can be expected to lead to reduced climate or other environmental resilience in a region should be excluded from state or international funding.

Ensure sustainable project implementation based on participation: Impact assessments should include local voices and the regulatory process should empower civil society to participate in decision making. This can ensure social aspects and opinions are fully considered rather than being given lip service to avoid public opposition.

Prioritise water management and hydrogen use for local populations and essential industries: While Uruguay has a right to water access in its constitution, other countries need to follow suit. Local water use and hydrogen application should be prioritised over export goals.

Foster research interaction with green hydrogen partnership countries: While the European Union is the largest research funding donor globally, only limited resources go to middle-income countries. With a green hydrogen partnership with Uruguay on the horizon, it is important to support bilateral research. Joint research between exporting and importing countries is key to shaping sustainable implementation of green hydrogen partnerships.