

THE SAN JOSÉ DECLARATION ON SUSTAINABLE HYDROPOWER



PREAMBLE

The San José Declaration on Sustainable Hydropower outlines the fundamental principles and recommendations for a sustainable hydropower sector to play its best role in the energy transition as a clean, green, modern and affordable source of electricity and responsible water management.

To put the world on a pathway to limiting the global temperature rise to 1.5°C, the International Energy Agency (IEA) emphasises in its 2021 *Net Zero by 2050* report that global hydropower capacity needs to at least double by 2050.

The International Renewable Energy Agency (IRENA) in its *Global Energy Transformation: the REmap Transition Pathway* also calls for installed hydropower capacity to be more than doubled by 2050.

Our shared task is to advance sustainable hydropower's role in a clean energy future.

This Declaration therefore aims to strengthen the foundations of sustainable hydropower by establishing a common vision for the sector. It is based on a wide-ranging consultation with governments, the private sector, international financial institutions and civil society organisations.

RECOGNISING THAT:

- Climate change represents the most pressing existential threat to humanity and the environment, and should be regarded as an emergency by governments and the energy and water sectors, deserving urgent action and international collaboration.
- Rivers and water systems around the world, and the communities, biodiversity and ecosystem services they sustain, are vulnerable to climate change.
- 770 million people still do not have access to clean, affordable and reliable electricity (IEA), and almost one in three people do not have access to safely managed drinking water (UNWater).
- As a renewable energy, hydropower plays an essential role in decarbonising the energy system, achieving net-zero carbon targets and helping to mitigate the impacts of climate change.
- Hydropower is a reliable and affordable solution for increasing access to clean electricity and supporting the production of other clean sources of energy such as green hydrogen.
- Investment in new sustainable hydropower capacity, as well as modernising and upgrading existing capacity, is part of pragmatic, holistic energy policymaking and is essential for the energy transition.
- Through the flexibility and storage services it provides, hydropower can complement, integrate and accelerate growth in variable renewables such as solar and wind, and strengthen overall system resilience.
- Pumped storage should play a dramatically larger role in clean energy systems. There is no other proven renewable technology that matches its long lifetime and its ability to support reliable grids.
- Hydropower projects that are sited, planned and executed in accordance with international good practice in sustainability can have positive wider non-power impacts on local communities, including but not limited to water supply, social investment, economic growth, livelihoods, irrigation, and flood and drought protection.
- The power and non-power benefits that hydropower provides, if projects are well operated and maintained, can last significantly longer than those of alternative energy sources, and in some cases more than 100 years.
- Going forward, sustainable hydropower is defined and demonstrated by alignment with the international good practice presented in the Hydropower Sustainability Standard, which is governed by the multi-stakeholder Hydropower Sustainability Council.
- Sustainably developed and responsibly operated hydropower projects can make a significant contribution to national and international efforts to achieve the Sustainable Development Goals: in particular SDGs 6 (sustainable water management), 7 (affordable, reliable, sustainable and modern energy for all), 8 (sustainable economic growth and jobs), 9 (resilient infrastructure) and 13 (urgent action to address climate change).
- Hydropower has benefited from advances in science, technology and, most of all, multi-stakeholder understanding of good sustainability practice, to enhance its efficiency, effectiveness, complementarity with other energy sources and benefits, while reducing its negative impacts. It should continue to strive for further improvements.

PRINCIPLES

The following fundamental principles should guide planning, design, implementation and operation of sustainable hydropower:

“Sustainable hydropower is a clean, green, modern and affordable solution to climate change. Going forward, the only acceptable hydropower is sustainable hydropower.”

1 SUSTAINABLE HYDROPOWER DELIVERS ON-GOING BENEFITS TO COMMUNITIES, LIVELIHOODS AND THE CLIMATE

- a. All types of river- and water-based infrastructure should deliver net positive benefits to project-affected communities and the wider environment to merit their construction and continued operation.
- b. Non-powered dams should be assessed for potential retrofitting with hydropower capacity.
- c. Dams that no longer provide benefits to society, have safety issues that cannot be cost-effectively mitigated, or have disproportionate environmental impacts that cannot be effectively addressed, should be assessed for potential decommissioning.

2 GOING FORWARD, THE ONLY ACCEPTABLE HYDROPOWER IS SUSTAINABLE HYDROPOWER

- a. Today, there is no excuse for unsustainable hydropower development projects to go ahead.
- b. Developers and operators of hydropower should demonstrate their commitment to sustainable hydropower in a way that is clear, transparent and verifiable.
- c. The preparation, implementation and operation of hydropower should be delivered in accordance with international good practice as defined by the Hydropower Sustainability Standard.
- d. Acknowledging that sustainability is constantly evolving, continuous improvement and further refinement of tools and systems should guide action among the sector. All industry stakeholders should encourage and continuously develop and improve their sustainability performance, and engage in respectful collaboration with non-industry stakeholders.
- e. Developers and operators should avoid, minimise, mitigate and compensate negative biodiversity

impacts arising from project activities. All industry stakeholders should responsibly manage biodiversity impacts, with the aim of maintaining healthy, functional and viable aquatic and terrestrial ecosystems in the project-affected area.

- f. New hydropower projects should not be developed in World Heritage Sites.
- g. High standards of performance and transparency should be implemented when affecting protected areas as well as candidate protected areas and corridors between protected areas, through a systematic application of the Hydropower Sustainability Tools or certification against the Hydropower Sustainability Standard.
- h. Developers and operators of hydropower should cooperate with governments, civil society organisations and communities to respect the strengthening of existing protected areas and the declaration of new protected areas.

3 SUSTAINABLE HYDROPOWER REQUIRES STAKEHOLDERS TO WORK TOGETHER

- a. While all sustainable hydropower projects are unique and site-specific, experience and expertise is available and accessible around the world. Developers, operators and stakeholders in sustainable development should acknowledge the importance of learning from local and international experiences and seeking knowledge and connections from internationally established organisations and sector bodies.
- b. All project-affected communities, including Indigenous Peoples and vulnerable groups, should be identified and engaged on the issues of interest to them, and livelihoods and living standards impacted by the project should be improved relative to pre-project conditions.

- c. Sustainable hydropower alone will not be sufficient to address the world's water and energy needs. In planning, developing and modernising hydropower projects, industry, government and civil society should produce integrated energy systems and seek synergies between renewable energy sources.
- d. In cases of transnational issues, all parties, including affected governments and relevant multilaterals, should work together in line with international good practice in the Hydropower Sustainability Standard.

RECOMMENDATIONS TO DECISION-MAKERS

Governments have an opportunity to work with the energy sector and civil society to accelerate the energy transition, and integrate five accelerators in their economic plans:

1 GATHER INFORMATION ON NEEDS AND OPPORTUNITIES

- a. Wherever possible, make information on potential hydropower and other renewable energy sites known and publicly available.
- b. Exchange data, knowledge and assessment findings among the international community to ensure that new developments and enhancements of existing sites are delivered sustainably.

2 INCENTIVISE SUSTAINABILITY IN THE HYDROPOWER SECTOR

- a. Increase the ambition of renewable energy and climate change goals by setting targets that support and incorporate sustainable hydropower development.
- b. Build multi-stakeholder support for sustainable hydropower, ensure that individual projects have support from affected communities and encourage multi-stakeholder monitoring and accountability of delivery.
- c. Support sustainable hydropower development by providing appropriate financial support such as tax relief or concessional loans where needed.
- d. Encourage sustainable hydropower development by providing appropriate measures through the regulatory framework.
- e. Demonstrate that any new hydropower projects are being delivered sustainably in line with international good practice defined in the Hydropower Sustainability Standard.

- f. Engage with the hydropower industry to highlight and address a range of challenges including climate, energy, water and conservation concerns.
- g. Ensure that multi-donor trust funds for the development of sustainable hydropower in developing countries, such as the World Bank's Hydropower Development Facility, are well supported and funded.

3 DECIDE WHO WILL PAY FOR THE RELIABILITY OF RENEWABLE ENERGY SYSTEMS

- a. Ensure market mechanisms to develop storage and flexibility in renewable energy systems.
- b. Develop hydropower storage such as pumped storage facilities to increase energy storage capacity and power system flexibility for the integration of variable solar and wind, in line with the Hydropower Sustainability Standard.
- c. Invest in research and development to improve technologies and practices that improve generation efficiency, environmental performance and integration with variable renewables and other storage technologies.
- d. Integrate hybrid renewable technologies where appropriate, including floating solar PV on hydropower reservoirs.
- e. Ensure a level playing field for low-carbon electricity, to ensure the most efficient outcomes for society and the environment.

4 UPGRADE EXISTING ENERGY AND WATER INFRASTRUCTURE

- a. Modernise existing hydropower plants to improve safety, optimise generation, increase efficiency, build climate resilience, and mitigate environmental impacts.
- b. Enhance dam and reservoir operations for water supply, sediment management, fish passage, flood mitigation, and grid integration of solar and wind.
- c. Increase funding for modernisation, retrofitting, decommissioning and hydropower storage development.
- d. Improve the measurement, valuation of and compensation for energy flexibility, reliability and long-duration energy storage services such as multi-year ancillary contracts.

5 USE IT OR LOSE IT: ALL DAMS SHOULD BE BENEFICIAL

- a. Explore options for integrating additional services and benefits into existing dams, such as retrofitting non-powered dams and adding solar PV to reservoirs.
- b. Review whether to decommission dams that no longer provide benefits to society, have safety issues that cannot be cost-effectively mitigated, or have adverse environmental impacts that cannot be effectively addressed.
- c. Advance effective river restoration through improved mitigation and regulation in line with the Hydropower Sustainability Standard.

SUPPORT AND COMMITMENTS

The San José Declaration on Sustainable Hydropower was issued on 24 September 2021 at the conclusion of the World Hydropower Congress.

Organisations and persons with an interest in sustainable hydropower are invited to offer statements of support and commitments under the auspices of the San José Declaration at hydropower.org/declaration.

As the Secretariat to the World Hydropower Congress, the International Hydropower Association (IHA) commits to advancing the recommendations of the Declaration through its work programmes and global advocacy, in collaboration with its members.



The International Hydropower Association (IHA) is a non-profit organisation that works with a vibrant network of members and partners active in more than 120 countries. Our mission is to advance sustainable hydropower by building and sharing knowledge on its role in renewable energy systems, responsible freshwater management and climate change solutions.