

Advancing sustainable hydropower

Annual Report 2019-2020



 **iha**
international hydropower association



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Forewords

Sustainable hydropower lights up the way forward

This is a challenging time for individuals and communities, for the world economy, for business, the energy sector and hydropower. While Covid-19 is our most pressing threat, with tragic impacts on families and businesses everywhere, we must not lose sight of the existential threats to our way of life posed by climate change and the need for clean water and energy. The tireless efforts currently being deployed to beat Coronavirus show us that, in times of crisis, the seemingly impossible can quickly become possible.

Governments around the world are anticipated to undertake massive stimulus packages to kickstart national economies. We strongly encourage investments to be in line with the carbon reduction commitments made in the Paris Agreement. Investing in clean energy infrastructure will support workers, families and communities today, while helping to secure our planet's future.

Governments, business and civil society stakeholders need to consider the policy frameworks required to support the green growth economy and prioritise vital public and private investment in sustainable and renewable energy projects. This will mean considering ways to incentivise finance and reduce barriers to development, while ensuring that new projects meet internationally recognised environmental, social and governance (ESG) performance standards.

This report highlights how IHA is playing its part in proposing the solutions offered by the hydropower sector, the largest contributor to total renewable electricity generation. Sustainable hydropower will provide affordable, clean energy and will accelerate the adoption of other renewables, while safely managing freshwater supplies and protecting communities against floods and drought.

Now, more than ever, collaboration and dialogue are needed to advance global sustainable energy and the transformation towards a low-carbon energy future. IHA, under the mandate given to us by our members to advance sustainable hydropower, will continue working vigorously with our members, partners and wider stakeholders to deliver the ambition needed to tackle present and future threats and realise the opportunities ahead.

I also want to take this opportunity to pay tribute to Ken Adams and Richard Taylor who between them have done so much to establish IHA as the international voice of hydropower. Ken was President for six years until stepping down in 2019. I wish him a happy retirement. Richard was the founder of IHA and the organisation and indeed the whole industry bears his fingerprints and lays in his footsteps. He stepped down after 24 years in September though he remains as a key adviser to the organisation and many of its programmes. I thank him for his remarkable service to advancing hydropower.



Roger Gill
IHA President





IHA is your voice at the international table

Thank you for your support in 2019. Since my appointment as CEO last year, I have met with numerous members, partners and stakeholders. The message was clear: hydropower's story is strong and we need to reinforce it.

Highlights from the past year include the World Hydropower Congress, hosted in Paris in May 2019. Over 750 leading decision-makers, innovators and experts from industry, government, finance, civil society and academia gathered to discuss hydropower's contribution to the United Nations Sustainable Development Goals and the Paris Agreement. Across 40 key focus sessions and workshops, participants listened, learned, built capacity and strengthened networks for the future. The outcomes of the Congress helped shape the association's current work programmes, as set out in our strategy. As a non-profit membership organisation, IHA strives to support members in a practical way and advance policies which enhance the sector's performance.

We have provided assessments and training on the Hydropower Sustainability Tools, launched the innovation in flexibility project XFLEX HYDRO together with 18 other partners, produced numerous guidance notes, and been at all the major events that help position sustainable hydropower at the heart of the renewable energy mix. We have also developed online members' knowledge networks and expert groups in the Hydropower Pro online community, which is expanding understanding and innovations across the sector.

But there is still much to do. You can help by:

- Demanding better energy and economic development policies
- Encouraging all projects to be sustainability tested
- Learning and delivering best and good practice in hydropower
- Demanding best practice from your partners
- Engaging in our knowledge networks
- Encouraging companies to join with us at IHA
- Actively participating in IHA led events and initiatives

As Roger writes, hydropower is among many industries facing unprecedented pressure due to Covid-19. This presents important challenges and decisions for our sector. Let's shape the discourse. Let's build momentum. And let's provide sustainable hydropower for the future.

A handwritten signature in black ink, appearing to read 'Eddie Rich'.

Eddie Rich
IHA CEO

IHA's strength in numbers

Our members and partners



are IHA corporate members and affiliates supporting our mission to advance sustainable hydropower



total hydropower installed capacity operated by IHA's members



where IHA's members operate around the world



including the UN, IRENA, IEA, World Bank, NGOs and governments collaborated with IHA

Our team and resources



since IHA was founded on 16 November 1995



elected in 2019 to serve on IHA's board until September 2021

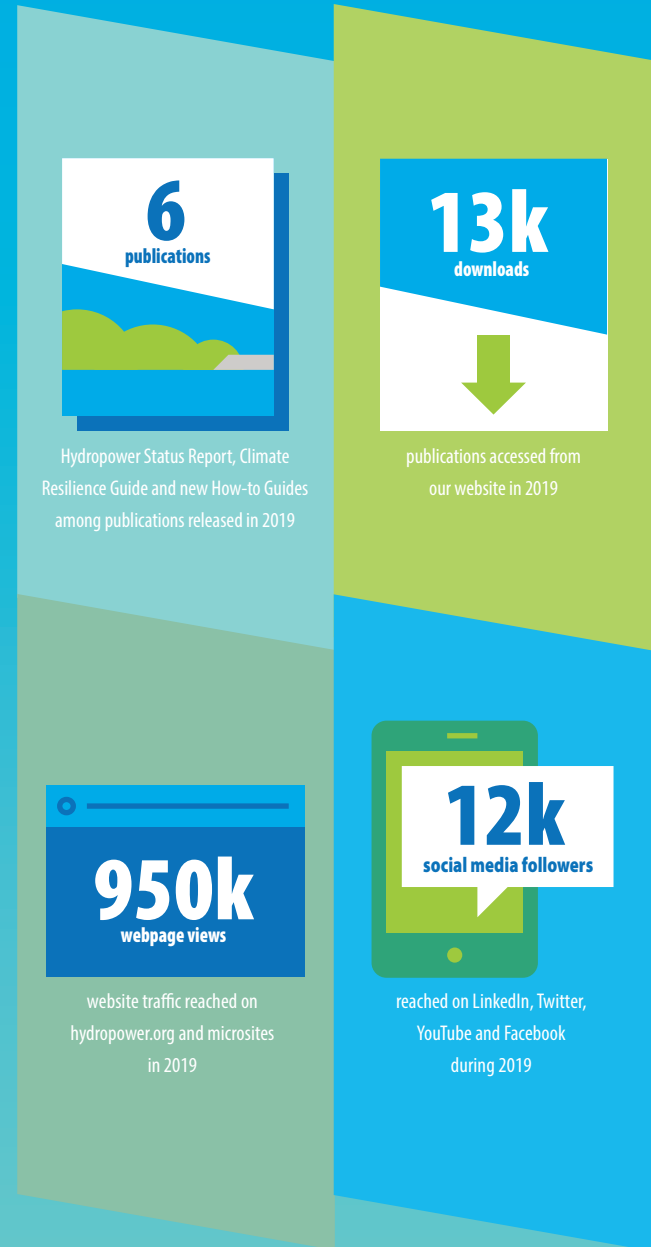


at our office in London, UK

Our programmes and events



Our communications



IHA's role today

The voice of sustainable hydropower

The International Hydropower Association (IHA) represents organisations and individuals committed to the responsible and sustainable development and operation of hydropower.

IHA's members share a common purpose: building a world where the world's energy and water needs are supported by sustainable hydropower.

Our vision

A world where water and energy services are delivered to all in a sustainable way

Hydropower's modern role

Almost 1 billion people are without access to electricity, while over 2 billion are without safely managed water. At the same time, the climate crisis poses an existential threat to all species.

In recent times, the Coronavirus pandemic has also reminded us of the importance of clean water and electricity to support our essential services.

Clean energy and water

When delivered responsibly, sustainable hydropower offers clean, pollution-free affordable electricity. Hydropower meets our basic needs for water, provides irrigation, flood and drought control, and also offers transportation and leisure services.

Climate action

As the world's greatest producer of renewable energy, hydropower ensures global decarbonisation goals remain within reach.

Thanks to its flexibility in dispatch and energy storage, hydropower is now helping to accelerate the clean energy transition, working in concert with variable renewables like wind and solar.

No country has come close to achieving 100% renewable electricity without hydropower in the energy mix.

Our purpose

Since IHA was founded almost 25 years ago the hydropower sector has seen tremendous growth – more than doubling in size from 625 GW in 1995 to around 1,300 GW today.

In order to meet the climate change commitments set in the Paris Agreement in 2015, hydropower needs to grow much faster. The International Renewable Energy Agency (IRENA) has highlighted that total installed capacity will need to reach 2,150 GW by 2050, while 600 GW of existing capacity will need to be upgraded.

IHA's 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.

We achieve this through four strategic objectives:

- Advancing policies and strategies that strengthen the sector's performance
- Building a vibrant, inclusive and proactive hydropower community
- Creating an open, innovative and trusted platform for knowledge
- Delivering value to members throughout the world

In our 2019 Membership Survey, we asked what members saw as IHA's main purposes:

88%

To represent the hydropower sector at a global level

82%

To promote good practice in hydropower development and operations

80%

To advance policies that support the sector's development and performance

70%

To connect the hydropower community (in person and online)

66%

To monitor, research and report on hydropower trends worldwide



Our members

IHA's members and partners recognise that investment in sustainable hydropower supports the achievement of the United Nations Agenda for Sustainable Development, as well as the Paris Agreement on climate change.

Operating in over 120 countries, our members include leading hydropower owners and operators, developers, designers, suppliers and consultants. Around a third of global installed hydropower capacity is directly managed and operated by our members.

IHA's network is open to non-profit organisations and national associations, as well as those involved in energy policy, planning, permitting, financing and regulation.

Platinum IHA members

Our platinum members are large organisations active in the global marketplace, including operators responsible for more than 10,000 MW of installed capacity.



Affiliate members

China Society for Hydropower Engineering
Hohai University
Indian National Hydropower Association
International Centre for Hydropower
International Water Power & Dam Construction
Myanmar Hydropower Society
Polish Hydropower Association / TEW
RTI International
Russian Hydropower Association
Small Hydropower Plants Association of the Kyrgyz Republic
WaterPower Canada

Gold IHA members

Our gold members are medium-sized organisations active in regional markets, including companies responsible for more than 2,000 MW of installed capacity.



Brookfield



RusHydro



Silver IHA members

Silver membership is for small or national-level organisations including owner and operators with less than 2,000 MW of installed hydropower capacity in their portfolio.

AFRY Switzerland

Alpiq

Carpi Tech

Chaac Technologies

Changjiang Institute of Survey
Planning Design and Research

CK Power

Deltares

Dolsar Engineering

Dongfang Electric Machinery

E-CO Energi

Ecofish Research

Empresas Publicas de Medellin

Enrgi Norge

Eranove

Gilbert Gilkes & Gordon

Hatch

Hidroeléctrica de Cahora Bassa

HNAC Technology

Hubei Qingjiang Hydropower
Development

Hydromine

Hydroplan UK

International Group of
Entrepreneurs

Joule Africa

King & Spalding (Singapore)

KESH

Laraib Energy

LCS Cable Crane

Lunsemfwa Hydro Power

Mainstream Energy Solutions

Mott MacDonald

Multiconsult

Neoenergia

Norconsult

ONEE

Pacific Hydro (Chile)

Razel - Bec

Renewable Energy Holdings

S.C. Hidroelectrica

Salto Grande

Sauer Compressors

SN Power

SNC-Lavalin

Snowy Hydro

Stantec Consulting

Stucky

Tinguiririca Energía

TIWAG

Tractebel Engineering

Tractebel Engineering S.A. /
Coyné et Bellier

Volta River Authority

Worley

ZESCO

Our impact

A trusted, credible voice

IHA is the voice of sustainable hydropower, providing trusted and credible information and guidance to decision-makers and practitioners.

We build and share knowledge through our strong partnerships with a broad range of stakeholders including governments and multilateral institutions, and civil society, finance, scientific and academic sectors.

Informing policy on renewables

IHA advances strategies for integrating hydropower with fast-growing variable renewables, helping to inform energy policy-making and improving the investment climate for sustainable hydropower projects.

Our knowledge building and advocacy increases awareness of hydropower's importance to sustainable development, as well as the unique storage and flexibility services it provides to support the clean energy transition.

We work closely with international organisations such as the World Bank, IRENA, the IEA and all United Nations agencies responsible for water, energy and climate change, where we have official observer and consultative status. We also work with regional organisations and national governments to support the development of policy and regulatory frameworks for sustainable hydropower.

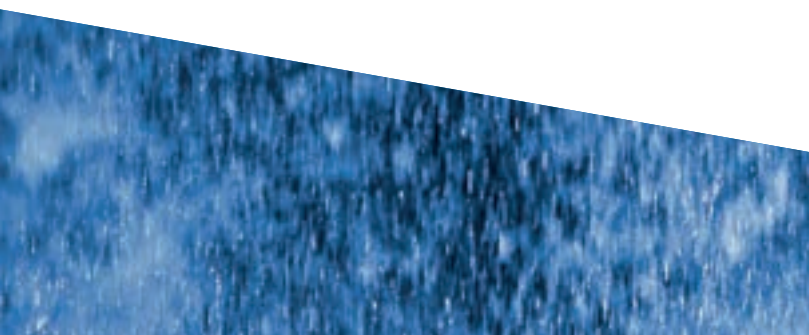
We also collaborate with academics and researchers, and environmental, social and governance NGOs including WWF, The Nature Conservancy and Transparency International.

Recognising industry leaders

IHA's members are recognised internationally for their commitment to planning, designing and delivering projects which support the [Sustainable Development Goals](#) and Paris Agreement on climate change.

The leading developers and operators, researchers and consultants and equipment suppliers among our membership have worked on many of the world's most acclaimed hydropower projects, including the winners of the [IHA Blue Planet Prize](#).

We publish thought leadership pieces by our members, government policy-makers and partners across our network, [website](#) and [online community](#).



Setting industry standards

IHA champions continuous improvement and sustainable practices in the hydropower sector.

We advocate usage of the [Hydropower Sustainability Tools](#), a set of good practice guidelines and tools for assessing project performance against objective environmental, social and governance performance criteria.

These tools are aligned with the World Bank and IFC performance standards and so help projects achieve good practice in hydropower development and secure investments.

Our [training and capacity](#) building courses are geared towards hydropower companies, professionals and consultants that wish to develop hydropower projects that meet best practice, or to evaluate and report on a project's sustainability performance.

These courses are also ideal for those who wish to enhance their understanding of international definitions of good and best practice in sustainable hydropower development.

Sector monitoring and statistics

IHA monitors national and regional policy developments and data. We share information and insights on a range of specialist and technical topics amongst our members.

We foster and coordinate scientific research and industrial innovation which seeks to address the most pressing challenges facing the hydropower sector.

Our in-house experts provide regular, exclusive briefings on news developments, sector trends and international good practices through our online community Hydropower Pro.

The [Hydropower Status Report](#), our flagship publication, is the world's most authoritative source of global hydropower installed capacity and generation data.



Bringing together hydropower stakeholders

To change the world you need to bring people to the table.

Through our conferences, workshops, and online events, we convene a diverse group of stakeholders with their own unique perspectives and experiences of hydropower operations.

Every two years, IHA convenes the [World Hydropower Congress](#), the globe's most important gathering for hydropower decision-makers, innovators and experts from industry, government, finance, civil society and academia.

In addition, we organise regional high-level roundtables for CEOs and heads of international agencies, NGOs, business and banks, where members can speak with key decision-makers and discuss local policy priorities.

Delivering communications for our members

We understand that receiving and sharing accurate and timely information is critical for the success of our members' operations.

IHA's [Knowledge Networks](#) help hydropower professionals to connect, collaborate, and gain insights on sector trends from around the world.

We communicate through our website [Hydropower.org](#), our exclusive online platform [Hydropower Pro](#), as well as through email newsletters, social media campaigns, and printed publications.



Online community

Hydropower Pro, a new online community and mobile app launched by IHA in 2019, is helping to connect the worldwide hydropower community and serves as a platform for sharing good practices.

Hydropower Pro was launched to support IHA members and hydropower professionals from Africa, the Americas, Europe, Asia and the Pacific to exchange experiences and collaborate with one another.

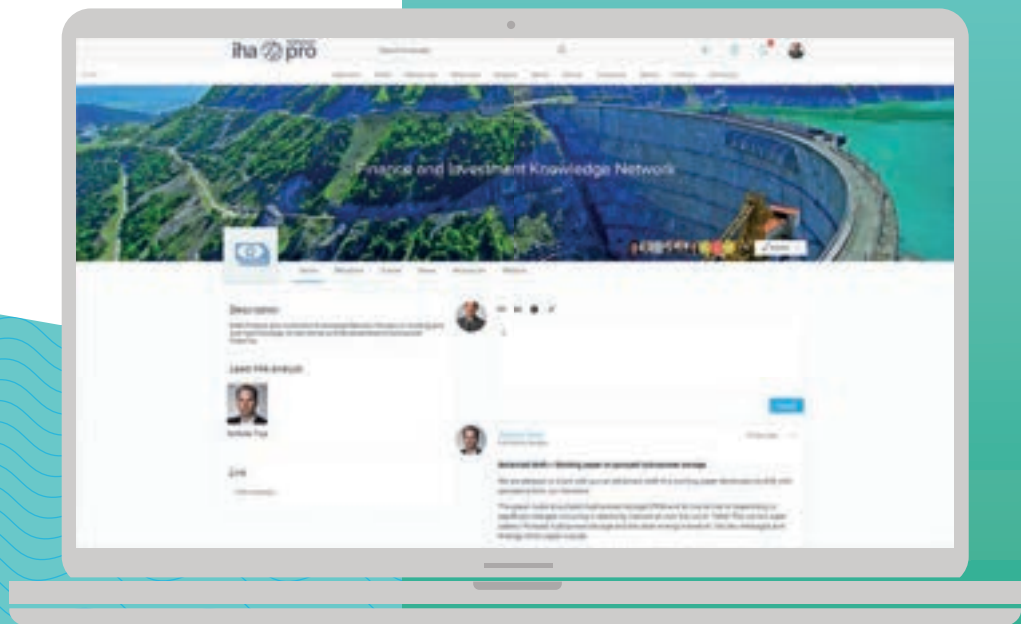
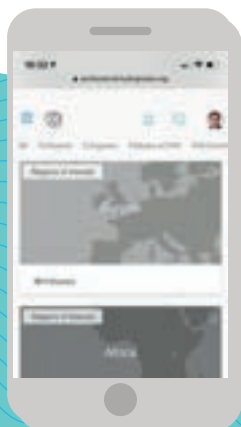
The platform gives users access to online groups focused on specialist topics, along with access to essential and exclusive downloadable resources.

It is home to IHA's Knowledge Networks covering topics such as asset management, clean energy systems, climate change, markets and finance, freshwater management and communications.

The platform is a hive of news and information from IHA's team of analysts. Users can discover job and project opportunities, discuss new trends and common challenges, and stay updated with instant and weekly email alerts.

The platform is available as a website (hydropower.org/pro) and as a mobile app for Apple iPhone and Google Android devices.

Members can request an invitation to join Hydropower Pro by contacting membership@hydropower.org



Hydropower and the SDGs

Sustainable hydropower supports the achievement of the United Nations Agenda for Sustainable Development, as well as the Paris Agreement on climate change.

The 17 Sustainable Development Goals were adopted by all member governments of the United Nations and provide a blueprint of priorities for national governments, multilateral organisations, business and civil society.

Hydropower projects, when developed and operated responsibly, directly support the achievement of Sustainable Development Goals 6, 7, 9 and 13:



Ensuring availability and sustainable management of water for all



Providing access to affordable, reliable, sustainable and modern energy for all



Upgrading infrastructure with clean, environmentally sound technologies



Taking action to combat climate change and its impacts

Hydropower projects can also contribute towards economic development, social investment and environmental outcomes which support goals 1, 2, 3, 4, 5, 8, 10, 11, 12, 14, 15, 16 and 17.



Sustainable hydropower

Over the last 20 years, IHA has convened and played a leading role in a multi-stakeholder process to develop sustainability guidelines and assessment tools in order to improve the performance of hydropower projects worldwide.

The Hydropower Sustainability Tools were developed by a governing council representing industry, government, financial institutions and social and environmental NGOs, and are managed by IHA as the council's secretariat.

The tools comprise Guidelines on Good International Industry Practice as well as two assessment tools: an Assessment Protocol, to measure performance above and below defined good practice, and an ESG Gap Analysis Tool, for checking for gaps against good practice and delivering a gap management plan.

Hydrosustainability.org



Clean energy systems

Context

Hydropower is the world's largest producer of renewable electricity. No country or region has achieved 100% decarbonisation without a significant element of hydropower.

The sector represents around 16 per cent of global electricity production, more than all other renewables combined.

To deliver upon the ambition of the Paris Agreement, which aims to limit the global temperature rise to 1.5°C, all renewables will need to become more closely integrated.

Join the experts



IHA's Clean Energy Systems Knowledge Network supports members to learn about innovations and policy developments in the clean energy transition.

hydropower.org/networks

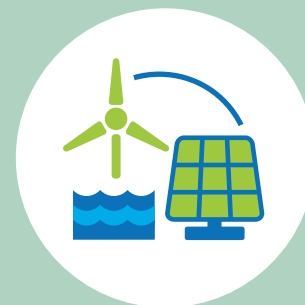
Action

IHA has demonstrated hydropower's reliability, flexibility and affordability through its advocacy, projects, publications, events and workshops.

Our engagement with international organisations, governments and other stakeholders has improved awareness of the flexibility and storage services hydropower provides, as well as its great potential to increase the penetration of variable renewables such as wind and solar.

In the past year, we have supported Hydropower Europe, a major European Union Horizon 2020 research and development project to deliver a research and policy roadmap for the sector.

hydropower.org/topics/clean-energy-systems



Recent activities (2019)

- IRENA ministerial plenary discussion on the role of hydropower in energy transformation
- Hydropower Europe regional workshops
- Keynote at EERA Joint Programme on Hydropower
- Panel discussion at KIREC 2019, Seoul
- Webinar on hydropower and solar PV
- Keynote at China-Africa Energy and Power Conference, Beijing
- Panel intervention at UN Climate Conference in Madrid urging governments to increase take-up of renewable technologies
- CEO speech at Sustainable and Renewable Energy Forum 2019
- Participation in China Society for Hydropower Engineering (CSHE) Annual Meeting

Hydropower Europe launches as research and development forum

A new multi-partner initiative led by the International Commission on Large Dams (ICOLD) and supported by IHA was launched in February 2019 to agree common research and innovation priorities for Europe's hydropower sector.

The Hydropower Europe project is funded by the European Union's Horizon 2020 programme and provides a forum for the hydropower community and representatives active throughout the



sector's value-chain, including industry, researchers, policy makers, end users and academia.

The three-year project is developing a strategic research and innovation agenda and technology roadmap to guide funding authorities, such as the European Commission, to prioritise support aimed at helping the hydropower sector adapt to a constantly evolving energy system.

hydropower-europe.eu



IHA at the UN Climate Conference

During the United Nations Climate Conference (COP) in Madrid, in December 2019, IHA together with the other international renewable energy associations urged governments to:

- Increase renewable energy penetration in the electricity grid
- Develop markets that reward power system flexibility
- Stop financing and subsidising fossil fuels
- Increase investments in renewable energy technologies



Asset management

Context

As the hydropower sector prepares for its new role supporting a mix of renewables in energy systems, many existing hydropower facilities will require modernisation. By 2030, over half the world's existing hydropower capacity is expected to have undergone, or be due for, modernisation.

To realise hydropower's full potential in modern energy systems, traditional upgrade practices will need to go beyond 'business as usual' refurbishments.

The digital revolution will lead to new technologies and innovative approaches to operation and maintenance (O&M). This will ensure hydropower facilities can make an even greater contribution to economic performance, energy and water supply, and climate mitigation.

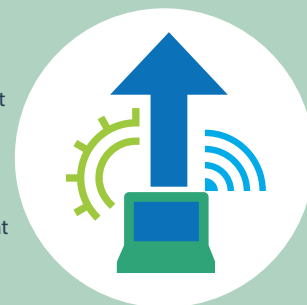
Action

IHA is supporting the exchange of innovation and industry experiences, including through our partnerships with the Asian Infrastructure Investment Bank and the Inter-American Development Bank to study the modernisation needs for hydropower stations in these regions. These studies for instance build on IHA's global hydropower network and look at the potential for investing in existing capacity in Asia and Latin America. Another collaboration includes working with the World Bank and IHA members to develop case studies in hydropower operations and maintenance.

By publishing research briefings and hosting webinars, we are helping the hydropower sector to understand and adapt to the need for modernisation and the digitalisation revolution in operations and maintenance.

In 2019, together with 18 other partners we launched the Hydropower Extending Power System Flexibility (XFLEX HYDRO) project, an EU-funded initiative led by a consortium of utilities, manufacturers, universities and consultancies. The project will enhance hydropower's role in modern markets with increasing penetration of variable renewables.

hydropower.org/topics/asset-management



Join the experts



IHA's Asset Management Knowledge Network is for members interested in exchanging experiences and best practices on operations and maintenance or modernisation programmes.

hydropower.org/networks

Recent activities (2019)

- Collaborated with the World Bank on new O&M guidance and case studies
- Presentation on hydropower modernisation and O&M strategies at IRENA General Assembly, Abu Dhabi
- IEA high-level workshop on power system flexibility, Paris
- Workshop on digitalisation in Austria
- Sessions on modernisation and digitalisation at World Hydropower Congress, Paris
- Presentation on construction management at ICOLD meeting, Ottawa
- Webinar on hydropower modernisation needs in Asia
- Launch of XFLEX HYDRO project at COP 25, Madrid
- Chaired session at Energy Week Uzbekistan
- Participation in Hydro 2019, Porto

XFLEX HYDRO initiative demonstrates cutting edge technologies

A major new energy innovation project to demonstrate how smart hydropower technologies can deliver a low-carbon, reliable and resilient power system was launched in December 2019 at the United Nations Climate Conference in Spain.

The XFLEX HYDRO (Hydropower Extending Power System Flexibility) project is a four-year initiative by leading utilities, equipment manufacturers, universities, research centres and consultancies.

It will demonstrate how modern hydropower plants can provide the vital power grid services required by variable renewables such as wind and solar power.

The €18 million initiative was announced by the European Commission and a consortium of 19 partners led by École polytechnique fédérale de Lausanne (EPFL) and including members Alpiq, Andritz, EDF, EDP, GE and Voith Hydro, among other organisations alongside IHA. The technologies to be tested are enhanced variable- and fixed-speed turbine systems, smart controls and a battery-turbine hybrid, each of which will be demonstrated at hydropower plant sites across Europe.

The project will conclude in 2023 by delivering a roadmap to increase adoption of the technologies across the hydropower fleet, with policy and market recommendations for governments, regulators and industry.

xflexhydro.net

XFLEX
HYDRO



Climate change

Context

Hydropower generates low-carbon power, and provides essential climate adaptation services to mitigate the impact of extreme weather events such as floods and drought.

Although characterised by their longevity, hydropower plants in some areas will need to strengthen their resilience to climate change to ensure operations are not compromised in the long term.

The precise greenhouse gas footprint of a reservoir can vary depending on a range of conditions. Trusted tools are required to measure GHG emissions and give confidence to communities, investors and governments about a hydropower project's low carbon profile.

Join the experts



IHA's Climate Change Knowledge Network supports members to build knowledge and capacity about climate change mitigation and resilience building.

hydropower.org/networks

Action

IHA is supporting hydropower to both become more resilient to climate change and to be more widely recognised as a low carbon form of energy.

We launched IHA's Hydropower Sector Climate Resilience Guide to support owners, developers and investors to plan, build, upgrade and operate facilities in the face of variable climatic and hydrological conditions.

We continue to offer training and validation services for the GHG Reservoir (G-res) Tool for reporting on the carbon footprint of a reservoir. Developed in collaboration with the UNESCO Chair for Global Environmental Change, the tool provides a cost-effective way to more accurately assess net greenhouse gas emissions.

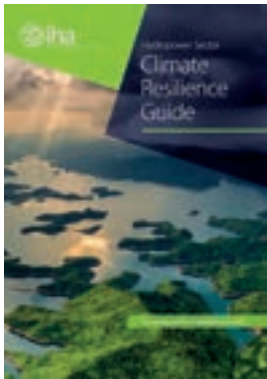
hydropower.org/topics/climate-change



Recent activities (2019)

- Developed and launched the landmark Hydropower Sector Climate Resilience Guide
- Represented members at UN Climate Conference COP25, CEATI, ICOLD and other events
- 13 training workshops on both the G-res Tool and Climate Resilience Guide
- Upgraded the G-res Tool with a new interface and more precise soil carbon content layer
- Presented at International Energy Agency (IEA) workshops on climate change and energy sector resilience
- Participated in the Climate Bond Initiative's technical working group for hydropower eligibility criteria on climate mitigation and climate resilience

New guidance issued for building resilience to climate change



The Hydropower Sector Climate Resilience Guide supports investors, owners and developers to make informed decisions about how to plan, build, upgrade and operate hydropower systems in the face of increasingly variable climatic and hydrological conditions.

Launched at the World Hydropower Congress in Paris in May 2019, it introduces an innovative methodology for assessing climate risks and identifying corresponding climate resilience measures.

The guide will help hydropower industry become more resilient to the impacts of climate change and is supported by the World Bank, its Korea Green Growth Trust Fund and the European Bank for Reconstruction and Development.

hydropower.org/climateresilienceguide



Operators and consultants evaluate reservoir emissions

The G-res Tool is a web-based tool which allows hydropower companies to more accurately report on the net impact of GHG emissions resulting from the introduction of a reservoir to a landscape.

The tool was created through a research project led by IHA and the UNESCO Chair in Global Environmental Change and the University of Quebec at Montreal

(UQAM). Since its launch in 2017, the tool has become established and recognised by organisations including the Intergovernmental Panel on Climate Change (IPCC) and the Climate Bonds Initiative.



g-res.hydropower.org



Markets and finance

Context

To meet global climate and sustainability goals, a major effort is needed to mobilise public and private sector investment in renewable technologies such as hydropower.

While a mature technology, securing favourable financing arrangements for hydropower development can be a challenging task, which needs to be specifically tailored for each project.

Developers are often faced with high upfront costs, rigorous and complex project preparation, environmental and social considerations, and services which are not adequately remunerated.

Join the experts



IHA's Markets and Finance Knowledge Network focuses on building and sharing knowledge on key trends and developments in hydropower financing.

hydropower.org/networks

Action

IHA is working across several fronts together with developers, investors, international financial institutions and NGOs to help mitigate the economic risks of hydropower development and unlock greater investment.

Through the promotion of the Hydropower Sustainability Tools and as part of the Climate Bond Initiative's technical working group, we have contributed to the development of proposed hydropower eligibility criteria for climate financing for the growing green bond market.

We are also collaborating with international partners on the role of project preparation facilities and the policy and market changes needed to fully reflect hydropower's contribution to evolving electricity systems.

In 2019, a new IHA study on project ownership study offered insights on the level of private sector involvement in hydropower. The study also analysed how a project's size impacts its ownership model and the role of foreign direct investment.

hydropower.org/topics/markets-and-finance



Recent activities (2019)

- Project ownership study made available to IHA members
- Workshop brought together independent hydropower project proponents focused on Africa's growth opportunities
- Workshop on risk management in the hydropower sector
- Continued involvement in the development of green bond eligibility for the hydropower sector with the Climate Bonds Initiative publishing their draft proposals for public consultation
- Sessions on green bonds and project ownership and financing at the World Hydropower Congress

Independent developers assess growth opportunities in Africa

Private developers, investors and government agencies examined the “great potential” for independently owned and sustainably managed hydropower projects in emerging economies at an IHA workshop in London.

The workshop in February last year looked at solutions to environmental, social, financial, legal and technical challenges brought forward by private sector hydropower development, with a focus on projects built in Africa.

Despite recent growth in private investment in Africa's power sector, only around 10 per cent of the continent's economically feasible hydropower potential has been developed. Independent Power Producers (IPPs) form part of the power sector in the majority of African countries, but hydropower IPPs are less common.

The workshop was organised in partnership with REH and King & Spalding, which hosted the event at its premises. Members can access presentations from the workshop in Hydropower Pro, IHA's online member community.



IHA conducts project ownership study

A study by IHA analysts has revealed significant regional differences in the levels of private sector-led development. Conducted in 2019, the study sheds light on hydropower development across the world and the impact of project size on ownership, while also looking at the role of greenfield foreign direct investment.

It notes that public ownership dominates globally, with over 80 per cent of the capacity added since 2012 by publicly owned companies. This is in stark contrast to other renewables such as wind and solar. The study is available for download by members in Hydropower Pro, IHA's online member community.



Freshwater management

Context

Freshwater management is a major challenge for society, especially in developing economies and climate stressed regions. This means balancing energy and water supply requirements alongside environmental, social and economic priorities for all river basin users.

Hydropower infrastructure can play an important role in providing water supply and irrigation to support agriculture and local livelihoods, as well as offering drought mitigation and flood control.

Hydropower's freshwater services can be impacted by sedimentation, caused by natural erosion, deforestation, construction and agriculture. A range of freshwater and sediment management strategies should be deployed to protect the ecosystems that a river system supports.

Join the experts



IHA's Freshwater Management Knowledge Network supports the exchange of experiences and best practices on freshwater management.

hydropower.org/networks

Action

IHA is a leading voice in global discussions on the water-energy nexus, promoting awareness of the multiple freshwater services provided by sustainable hydropower.

IHA's Sediment Management Knowledge Hub continues to be a resource of strategies and case studies for restoring sediment transport connectivity, to stabilise reservoir capacity while supporting ecological and environmental functions. The hub is helping hydropower developers and researchers to implement and refine sediment management practices based on real-life industry experiences and practices.

We regularly gather case studies and share them with our members, policymakers and other stakeholders to support sustainable hydropower development.

hydropower.org/freshwater



Recent activities (2019)

- IHA webinar on reservoirs and aquatic biodiversity with Hydro-Québec and Université du Québec en Outaouais
- Workshop and sessions on river basin development and sediment management at the World Hydropower Congress
- Participation in Sustainable Water and Energy Solutions Network events in New York and COP 25 in Madrid
- Initiated a project with the World Bank and the Austrian government for a global study on sediment management

Sediment management knowledge hub

IHA published case studies to promote good practice in design and operations related to sediment management to its Hydropower Sediment Management Knowledge Hub for researchers, hydropower developers and operators.

The Knowledge Hub presents a range of strategies and resources, as well as good practice case studies from countries in

Africa, Asia, Europe, Central and South America and the Pacific.

The Knowledge Hub is hosted by IHA with the support of the South Asia Water Initiative, a partnership between the World Bank and the governments of Australia, Austria, Norway and the UK.

hydropower.org/sediment-management



World Hydropower
on Dam (2015)

Summary - 2015



Hydropower facts | About us | Join us | Areas of work | News

Sediment management



Sediment management

The International Hydropower Association (IHA) has published a new Sediment Management Knowledge Hub to promote good practice in sediment management.

With support from

The objective of this knowledge hub is to provide a platform for researchers to implement and

Sustainability assessments

Context

Hydropower plays a vital role in reducing the world's dependence on fossil fuels. As a renewable energy, it is essential that hydropower is developed sustainably.

What constitutes good and best practice in sustainable hydropower development is defined by the Hydropower Sustainability Tools, a suite of internationally recognised guidelines and assessment tools.

The Hydropower Sustainability Tools are aligned with the World Bank and IFC performance standards and governed by a council whose members include representatives of social and environmental NGOs, intergovernmental organisations, banks, governments and hydropower companies and contractors.

Action

IHA has played a leading role in the development of sustainability guidelines and assessment tools. We recognise that all hydropower projects must be developed and operated sustainably.

Our sustainability division serves as the secretariat for the Hydropower Sustainability Assessment Council. The Council governs the Hydropower Sustainability Tools, which underpin the work of our sustainability programme. These tools comprise Guidelines on Good International Industry Practice (HGIIIP), an Assessment Protocol (HSAP) and an ESG Gap Analysis Tool (HESG).

In 2019, the first assessments using the new HESG tool took place. We increased outreach and uptake of the tools with expanded training programmes. We introduced a new certified user training course, while doubling the number of accredited assessors.

Over the last year, we also launched a new website for the tools, hydrosustainability.org, and published the first two of a series of new How-to-guides.



Hydrosustainability.org

Recent activities (2019)

- Trainings for accredited assessors and certified users in English and French, in multiple countries, including for the Inter-American Development Bank
- Assessments included the Teesta-V power station in Sikkim, India, which achieved good practice using the HSAP
- Presentation at the World Water Week in Stockholm, Sweden
- How-to Guides on Benefit Sharing, and Erosion and Sedimentation
- Revamped sustainability tools website
- Webinars in collaboration with the World Bank, The Netherlands Commission for Environmental Assessment (NCEA) and The Nature Conservancy (TNC).

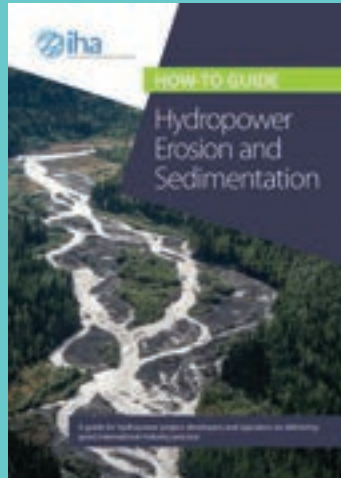
How-to-guide supports knowledge on benefit sharing

Published in October 2019, this guide aims to increase understanding of benefit sharing practices for hydropower developers and operators. The publication provides an overview of current knowledge, looking at beneficiaries and types of benefits, including those related to project siting and design, monetary and non-monetary, regulatory and voluntary, benefits, as well as governance and monitoring methodologies.



Guide for projects to sustainably manage sediment

Published in December 2019, this guide aims to assist hydropower developers and operators manage risks associated with erosion and sedimentation in a river basin. It covers potential upstream and downstream impacts, sediment transport in rivers, erosion from the project site, civil and electromechanical structures, and climate change.



Certified user training for the Inter-American Development Bank

In late 2019, IHA organised a Certified User Training on the Hydropower Sustainability Tools for the Inter-American Development Bank in Washington D.C. "It was an excellent and pragmatic course," said Roberto Aiello, Principal Energy Regional Specialist at IDB. "I liked the design, structure, topics, pace and content - it works very well for people like us at multilateral development banks."

World Hydropower Congress

Paris 2019

The World Hydropower Congress was hosted last year in Paris, France, drawing around 750 delegates from 77 countries to the French capital.

Delegates representing industry, government, social and environmental NGOs, academia, finance and the United Nations participated in the three-day event to set priorities for the hydropower sector.

Under the theme, 'The Power of Water in a Sustainable, Interconnected World', the congress explored hydropower's role in delivering on the Paris Agreement and the Sustainable Development Goals.

Two-hundred speakers addressed focused sessions and workshops on topics such as sustainability assessment, climate resilience, data solutions, and working with indigenous communities.

Participating organisations announced a range of initiatives to ensure hydropower projects and assets can bring maximum benefits when delivered sustainably.

Delegates set priorities for action, looking at critical measures to be addressed by the hydropower sector, governments, financial markets and other stakeholders.

hydropower.org/congress

Strategic partners:



Supporting partners:



Outcomes report

IHA's Report on the World Hydropower Congress gives a comprehensive account of the Paris event.

The publication highlights outcomes of discussions. It outlines priorities for action for the hydropower sector covering clean energy systems and modernisation, sustainability and strategic planning, and climate change and resilience.

hydropower.org/publications

Awards for excellence

Costa Rica's Reventazón awarded IHA Blue Planet Prize

At the World Hydropower Congress, the 2019 IHA Blue Planet Prize, which recognises excellence in sustainable hydropower development, was awarded to the Reventazón Hydropower Plant in Costa Rica.

Reventazón is the largest hydropower project in Central America with 305.5 MW of installed capacity. Since it came into operation in 2016, the project has led Costa Rica to achieve a target of generating 100 per cent of its electricity from renewable energy sources.

The IHA Blue Planet Prize is given to a hydropower project which demonstrates excellence across a range of social, environmental, technical and economic performance criteria.

hydropower.org/iha-blue-planet-prize

IHA Mosonyi Award for Excellence in Hydropower

The prestigious 2019 IHA Mosonyi Award for Excellence in Hydropower was jointly awarded to three leading members of the hydropower community, at an awards ceremony at the World Hydropower Congress in Paris.

The award went to: Karin Seelos, Statkraft Vice President (Power Generation and International Affairs); Refaat Abdel Malek, Former President of IHA and Vice Chairman of MWH Global; and Yan Zhiyong, Chairman of Power Construction Corporation of China.

hydropower.org/mosonyi-award

IHA Young Researcher Award

The 2019 IHA Young Researcher Award were jointly awarded to two rising stars from universities in Switzerland and China. Martina Botter, a PhD student at ETH Zurich in Switzerland, and Weijia Yang, a Research Associate Professor at Wuhan University, were recognised by IHA for their research studies.

hydropower.org/young-researcher



Governance

Financial report

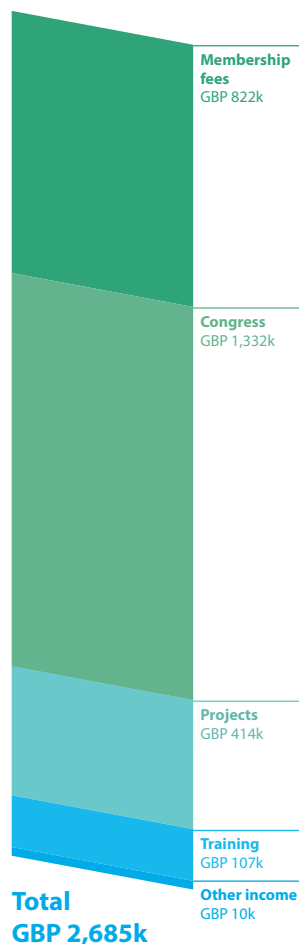
The International Hydropower Association (IHA) is a mutual association of members established in 1995. IHA's headquarters are in London, UK, with activities carried out by two not-for-profit companies: International Hydropower Association Ltd and IHA Sustainability Ltd.

Our income comes from a combination of membership fees, external funding for programmes and projects, and revenue from events and sponsorship. We deliver value to members and advance our mission through sustainability, research and policy programmes, alongside outreach and events for members.

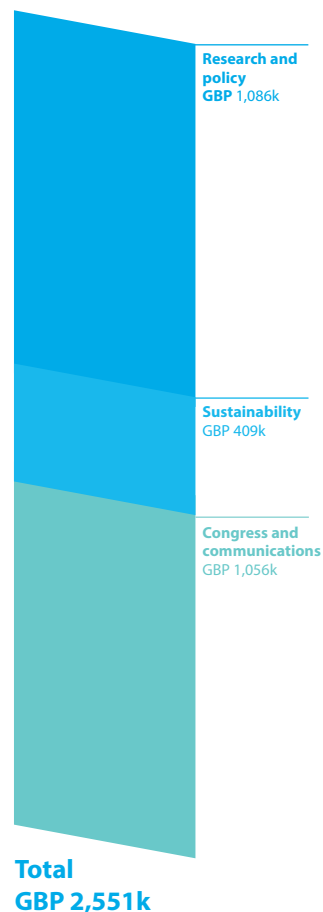
“IHA has steadily grown to become a platform of knowledge, with members operating in over 120 countries around the world. Our challenge is now to reach beyond the sector to help all stakeholders understand how hydropower can support the renewable energy systems of the twenty-first century.”

Roger Gill, IHA President

Revenue by source



Expenditure by function



The above charts provide an overview of IHA's total revenue and expenditure in the 12 month period to 30 September 2019, in GBP. The financial reports of both not-for-profit companies are available to members in [Hydropower Pro](#), our online community.

Our board

IHA is governed by a Board comprising an international group of experts, who each bring together high-level experience and varied perspectives of hydropower.

The current Board was elected in July 2019, with members taking up their positions in September 2019. The Board will serve for the period to September 2021.

Roger Gill was elected as IHA President by his fellow board members in September 2019 succeeding Ken Adams. IHA's Chief Executive Officer, Eddie Rich, began work in September 2019 after taking over from Richard Taylor.

President

Roger GILL



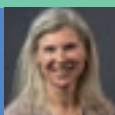
CEO

Eddie RICH



Vice Presidents

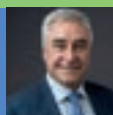
Christine
CANTIN



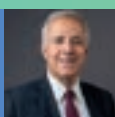
Tammy
CHU



Colin
CLARK



Gil MARANHÃO
Neto



Dr Óli
SVEINSSON

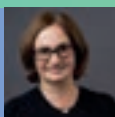


Uwe
WEHNHARDT



Board Members

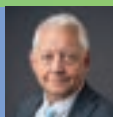
Irene CAÑAS
Díaz



Thibault
DESCLÉE DE
MAREDSOUS



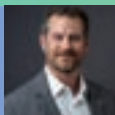
Tron
ENGBRETHSEN



Frédéric
HOFMANN



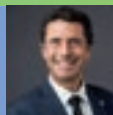
Herbie
JOHNSON



Moisés
MACHAVA



Anton-Louis
OLIVIER



Sharbini
SUHAILI



Evgeniy
TIKHONOV



WU
Shiyong



ZHANG
Dingming



hydropower.org/meet-board

Contact us

Our team at IHA Central Office, based in London (UK), supports our members and partners to deliver our work programmes. We also have a national office in China and a regional office for South America in Brazil.

IHA Central Office

Chancery House
St Nicholas Way
Sutton
London SM1 1JB
United Kingdom
T: +44 20 8652 5290
F: +44 20 8643 5600
E: iha@hydropower.org

IHA Regional and National Offices

IHA China Office
c/o China Institute of Water Resources and Hydropower
Research
A1 Fuxing Road
Beijing, 100038
China
E: china@hydropower.org

IHA South America Office

c/o Itaipu Binacional
Av. Tancredo Neves, 6.731
CEP 85856-970 Foz do Iguaçu
Paraná, Brasil
E: southamerica@hydropower.org

CEO

Email: eddie.rich@hydropower.org

Membership

Email: membership@hydropower.org

Research & Policy

Email: randp@hydropower.org

Sustainability

Email: sustainability@hydropower.org

Communications

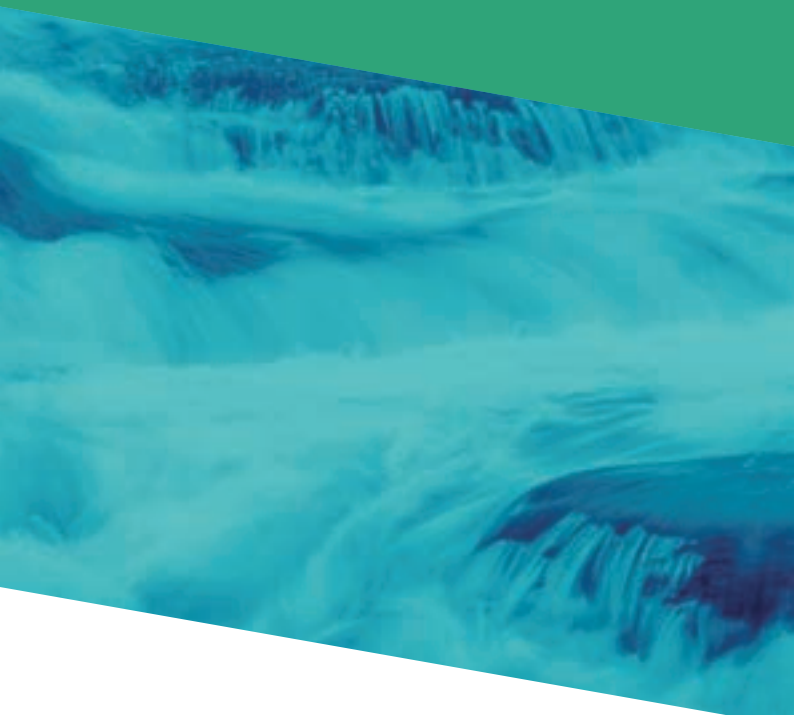
Email: communications@hydropower.org

Congress

Email: congress@hydropower.org







hydropower.org

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.

