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ANNUAL REPORT OF THE GLOBAL SUSTAINABLE WATER AND ENERGY SOLUTIONS NETWORK

Itaipu spillway - Víctor Azcona/Itaipu Binacional

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INTRODUCTION

The UN Department of Economic and Social Affairs (UN DESA) and ITAIPU Binacional joined efforts in 2018, creating a partnership entitled “Sustainable Water and Energy Solutions” that recognized the need to address the interlinkages between water and energy and their contributions to the advancement of other SDGs. The initiative resulted in the creation of the Global Sustainable Water and Energy Solutions Network with a growing number of multi-stakeholders from all regions and constituencies.

The goal of the multi-stakeholder Network is to provide a global platform for all stakeholders to enhance capacities and signal their high-level commitment to the integrated approach to SDG 6 and SDG 7 in support of the SDGs achievement. Progress on water (SDG 6) and energy (SDG 7) is highly interlinked to terrestrial ecosystems and biodiversity (SDG 15) and climate change (SDG 13) and will have an effect on a range of other Sustainable Development Goals, such as those on poverty eradication, food, health, and economic growth. The objectives are:

- Share best practices, experiences and quality data on the water-energy interlinkages and their contributions to other SDGs.
- Strengthen capacity building with a focus on the planning, designing, implementing and monitoring of policies, regulations, business models and investment to effectively manage the water-energy interlinkages and their implications on other SDGs.
- Mobilise and scale-up multi-stakeholder action aimed at stimulating integrated water-energy response addressing cross-sectoral barriers in other development sectors.
- Enhance advocacy, communications and outreach to help countries conduct evidence-based dialogues and facilitate broad-based implementation of SDG 6 and SDG 7.
- Stakeholders from all regions are invited to join. This includes UN system organizations and other international organizations, governments and government agencies at the national and subnational level, private sector companies, civil society organizations, academia and others. Partners support the activities of the Network on a voluntary basis, and help leverage skills, expertise and other resources that will support and advance its mission.

LEADERSHIP



"Ensuring universal access to sustainable energy, water and sanitation services – while reducing the environmental footprint – lies at the heart of the sustainable development and climate change agendas.

Integrated approaches to energy and water solutions are crucial if we are to achieve both goals."

Mr. Liu Zhenmin

United Nations Under-Secretary-General for Economic and Social Affairs

"Water and energy lie at the heart of Itaipu's business. That's why the company puts a lot of effort into the protection of ecosystems and sustainable territorial development activities. The whole world discusses those themes nowadays. In Itaipu, they are put into practice, and we are proud to share such initiatives with this network."



Mr. João Francisco Ferreira

Brazilian Director General of ITAIPU Binacional



"The 2030 Agenda demands coordinated efforts by governments and organizations to achieve sustainable development within the next decade. Itaipu is a good example of how two nations can cooperate and generate benefits for their peoples, sustainably. We believe that our experience can help other nations to act likewise."

Mr. Manuel Maria Cáceres

Paraguayan Director General of ITAIPU Binacional



WATER AND ENERGY IN THE 2030 AGENDA



SDG 6: ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

- By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
- By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.
- By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and substantially increasing recycling and safe reuse globally.
- By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
- By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.
- By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes.
- By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling, and reuse technologies.
- Support and strengthen the participation of local communities in improving water and sanitation management.



SDG 7: ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE, AND MODERN ENERGY FOR ALL

- By 2030, ensure universal access to affordable, reliable, and modern energy services.
- By 2030, increase substantially the share of renewable energy in the global energy mix
- By 2030, double the global rate of improvement in energy efficiency.
- By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency, and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.
- By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support.

ADDRESSING CLIMATE CHANGE

In the 2030 Agenda, Member States expressed their commitment to protecting the planet from degradation, specifically, Sustainable Development Goal 13 on climate action which aims to “take urgent action to combat climate change and its impacts.”

At the [26th Conference of the Parties](#) (COP26) climate summit in Glasgow, leaders from all over the world recognized the important areas of progress that has been made since the Paris Agreement, acknowledged the urgency of 2030 emissions reduction targets and renewed commitment of closing the gap to limiting global warming to 1.5° degrees Celsius. The 1.5°C target can only be delivered with focused and immediate global efforts.

The climate crisis remains a major world challenge. [The Glasgow Climate Pact](#) “calls upon Parties to accelerate the development, deployment, and dissemination of technologies, and the adoption of policies, to transition towards low-emission energy systems, including by rapidly scaling up the deployment of clean power generation and energy efficiency measures, including accelerating efforts towards the phase-down of unabated coal power and inefficient fossil fuel subsidies, recognizing the need for support towards a just transition”. All countries agreed to revisit and strengthen their current emissions targets to 2030. The Glasgow Climate Pact offers an opportunity to advance sustainable development through scaled-up action on integrated water and energy.

In the wake of the COVID-19 pandemic, the relationship between water, energy, and climate has become increasingly evident. Over the coming decades, the global demand for water and energy will continue to increase significantly, posing profound challenges that will need to be addressed in an integrated manner and taking into consideration climate change impacts. The interdependency between water and energy has significant implications for climate change mitigation and adaptation.

MEMBERS



UNDESA

UN DESA
Founding Member



ITAIPU BINACIONAL
Founding Member



United Nations
Framework Convention on
Climate Change

UNFCCC



UN-HABITAT



ESCWA

UN ESCWA



UNECE

UN ECE



**Ministry for the
Ecological Transition
and the Demographic
Challenge, Spain**



IRENA



**International
Hydropower Association**



**National Water Agency,
Brazil**



World Energy Council



ASAZGUA



**Ministry of Foreign
Affairs, Tajikistan**



**TERI School of
Advanced Studies**



SINTEF



IIASA



Canal Isabel II



**Solar Energy
Foundation Ethiopia**



SOLshare



CBD



IAEA



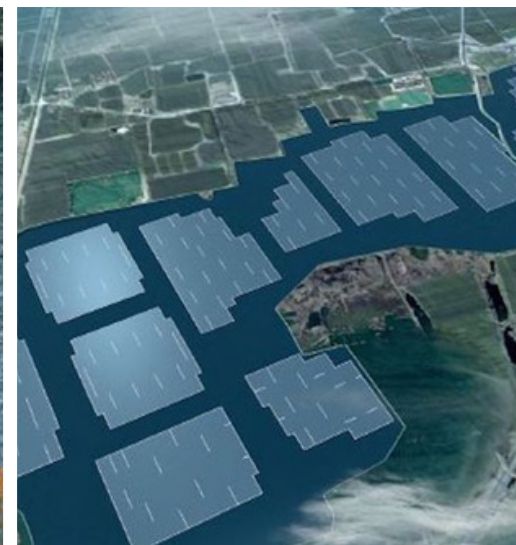
Grameen Shakti



**Economic Commission
for Latin America and
the Caribbean**

MILESTONES AND KEY ACTIVITIES IN 2021

KNOWLEDGE MANAGEMENT CAPACITY BUILDING ADVOCACY AND OUTREACH



KNOWLEDGE MANAGEMENT AND SHARING OF GOOD PRACTICES

Global Knowledge Platform on Sustainable Water and Energy Solutions

The Global Sustainable Water and Energy Solutions Network expanded the existing Knowledge Platform with updated relevant data, facilitating the exchange of information worldwide and helping disseminate best practices on synergies that can be realized when integrated approaches are used to tackle water and energy services, including during world health crises such as COVID-19 pandemic.



Case Studies

More than 50 case studies from all regions around the world have been conducted by Members of the Network and are featured on the website. The case studies cover different integrated technological systems designed and implemented for more effective management of water and energy resources following an integrated approach. Some case studies provide opportunities to accelerate global climate change objectives and to tackle the critical issues of access and reliability, especially for the effective planning and response to emergency situations and world crises such as pandemics.

CAPACITY BUILDING

01 ————— Webinar on Desalination Using Renewable Energy 7 June 2021

Global desalination capacity has grown considerably in the last decades. The use of wind and solar energy for powering commercial water desalination plants represents a sustainable water and energy solution for many world regions. Desalination is seen as an increasingly important option for meeting freshwater needs in many areas.

This capacity development event, organized by this Network in cooperation with its member the Economic and Social Commission for Western Asia (ESCWA), brought together multi-stakeholders to discuss and showcase existing initiatives and disseminate information on desalination systems powered with renewable energy.



CAPACITY BUILDING

02 --- Webinar on Bioenergy for Sustainable Development 8 June 2021

Sustainable production and use of bioenergy represent considerable opportunities that support the social, economic and environmental dimensions of sustainable development and can contribute to climate change objectives helping to reduce the consumption of fossil fuels. Integrated approaches to bioenergy include innovative systems and strategies that maximize water use efficiency.

This capacity development event, organized by the Network in cooperation with its member ASAZGUA, brought together multi-stakeholders to discuss and showcase existing initiatives and disseminate information on bioenergy.



CAPACITY BUILDING

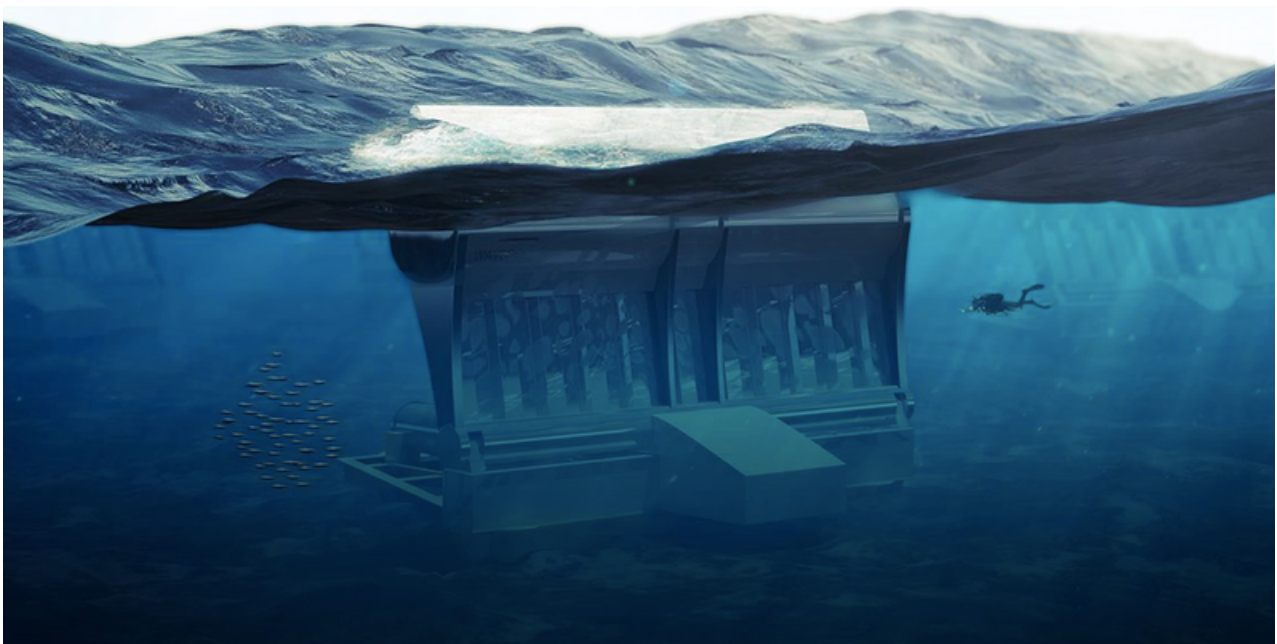
03

Webinar on Ocean Energy

29 June 2021

Renewable sources of ocean energy include offshore wind and marine technologies that can generate electricity from waves, tides, or currents as well as from differences in temperature and salinity of the ocean. There is growing relevance and potential of ocean energy. Currently, ocean energy technologies are still in developmental stages, with most technologies in the prototype phase and some just reaching commercialization. Nevertheless, substantial growth in deployment and installed capacity is expected in the coming years. Ocean energy is projected to reach 100 GW of installed capacity by 2050. Whereas the technical potentials of ocean energy are indeed promising, high costs and other challenges represent considerable barriers preventing a wider and faster commercialization.

This capacity development event, organized by this Network in cooperation with its member SINTEF, brought together multi-stakeholders to discuss and showcase existing initiatives and disseminate information on ocean energy.



CAPACITY BUILDING

04 — **Webinar on The Key Role of Biodiversity in Support of Sustainable Water and Energy Solutions, Terrestrial Ecosystems and Climate Change Objectives** **13 August 2021**

The promotion of biodiversity conservation supports water and energy solutions while contributing to SDGs 13 (climate) and 15 (life on land), strengthening the close interconnection between healthy ecosystems and water and energy infrastructures. Promoting and preserving rich biodiversity around bodies of water is essential to ensuring the quantity and quality of water for wildlife conservation and multiple uses. It enables better results in terms of ecosystem services, such as climate regulation, water production, pollination, soil conservation, among others.

This capacity development event, organized by this Network in cooperation with its founding member ITAIPU, brought together multi-stakeholders to discuss and showcase existing initiatives and disseminate information on how biodiversity plays a key role in enabling sustainable water and energy solutions for fighting climate change.



CAPACITY BUILDING

05 Webinar on Water and Energy Solutions Boosting Social Actions in Support of SDGs 3 and 4 18 August 2021

The role of water and energy in supporting sustainable environmental, social and economic development has become more evident, especially after the impacts of the COVID-19 pandemic. Sustainable energy and water services are vital to guaranteeing the health of the population (SDG 3) as well as supporting other social priorities, including education (SDG 4).

This capacity development event, organized by this Network in cooperation with its founding member ITAIPU, brought together multi-stakeholders to discuss and showcase existing initiatives and disseminate information on how sustainable water and energy solutions can promote good health and quality education.



ADVOCACY AND OUTREACH

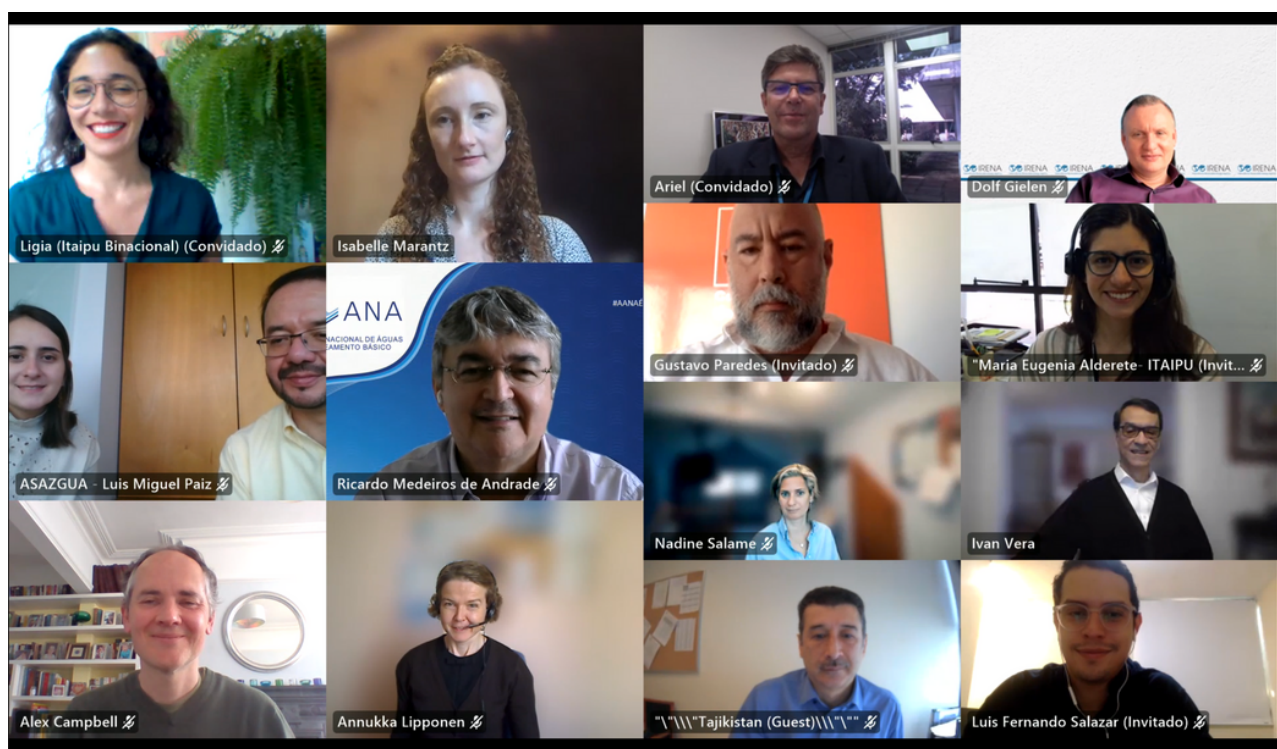
Meeting of the Members of the Global Network on Sustainable Water and Energy Solutions

25 March 2021

The 2021 meeting of the Sustainable Water and Energy Solutions Network was held virtually on 25 March 2021. The United Nations Department of Economic and Social Affairs (UN DESA) updated Network members on the activities undertaken in 2020 including the 2020 Annual Report, the launch of the website and Knowledge Platform, and presented on the 2021-2023 workplan.

Members made commitments to the Network including financial support, commitments to host webinars and technical capacity building activities, contribute to relevant reports, events, policy briefs, and to help expand the Knowledge Platform. UN DESA emphasized the need to expand the membership of the Network and called for proposals for new member organizations.

Members updated the Network on their activities related to water and energy solutions and emphasized their continued commitment to the mission and vision of the Network.



ADVOCACY AND OUTREACH

High-Level Political Forum on Sustainable Development Side Event “Sustainable Water and Energy Solutions Addressing Climate Change during the Decade of Action”

12 July 2021

The interdependency between water and energy has significant implications for climate change mitigation and adaptation.

The side event at the High-level Political Forum offered a unique platform to assess the potential for this transformative pathway on water and energy and for scaled-up action in fighting climate change. The Network together multi-stakeholders to share knowledge and showcase experiences and innovative systems on integrated water and energy solutions in support of an accelerated pathway to climate change (SDG 13) and sustainable development objectives.

At this event, the Global Sustainable Water and Energy Solutions Network launched the synthesis report on Sustainable Water and Energy Solutions addressing Climate Change which was prepared by the Network Secretariat.



HIGH-LEVEL POLITICAL FORUM ON SUSTAINABLE DEVELOPMENT



ADVOCACY AND OUTREACH

Report on Sustainable Water and Energy Solutions addressing Climate Change

The Report on Sustainable Water and Energy Solutions addressing Climate Change launched in July 2021, is one of the outputs of the global multi-stakeholder Network to enhance capacities and cooperation and to enable an integrated approach to the Sustainable Development Goals on water (SDG 6) and energy (SDG 7) and the interlinkages with other SDGs, particularly SDG 13 on climate change.

This report aims to inform the ongoing debate on sustainable water and energy solutions addressing climate change with a view to facilitate information exchange, enhance local, national and international cooperation, and stimulate collaborative development actions that “leave no one behind” in terms of water supply and sanitation, access to sustainable energy, and protection from potential negative impacts of climate change. The Report includes descriptions of selected technological areas and innovative systems that represent sustainable water and energy solutions addressing climate change.



ADVOCACY AND OUTREACH

Energy Compact

The Global Sustainable Water and Energy Solutions Network, recognizing that Energy Compacts represent an important vehicle for bringing together ambitious actions, developed its own Energy Compact to advance goals through effective, specific and trackable actions.

On 24 June 2021 at the Ministerial Thematic Forum on “Enabling SDGs Through Inclusive, Just Energy Transitions”, the Global Sustainable Water and Energy Solutions Network announced its launch of an Energy Compact with important commitments from three members, Itaipu Binacional, ASAZGUA, and Canal de Isabel II.



ADVOCACY AND OUTREACH

High-Level Dialogue on Energy Side Event “Energy Compact of the Global Sustainable Water and Energy Solutions Network”

24 September 2021

The Energy Compact of the Network is composed of voluntary commitments by Itaipu Binacional, ASAZGUA, and Canal de Isabel II. The Energy Compact contributed to the High-Level Dialogue on Energy which was hosted by the UN Secretary-General at the 76th session of the UN General Assembly.

Key commitments include:

- ITAIPU will invest USD5 million in capacity development and USD400 million in electrical transmission improvements in Paraguay and Brazil.
- Canal de Isabel II will increase efficiency by 6.8% and invest 80 million EUR
- ASAZGUA will cover a minimum of 30% of Guatemala's electricity demand (during the three dry months/year) with renewables and will increase ethanol production by 20% as well as develop a new biofuel.
- ASAZGUA and Canal de Isabel II will expand renewable electricity generation to cover 100% of their electricity demand.

The side event at the 2021 High-level Dialogue on Energy offered a unique platform for the three participating organizations to highlight and discuss their commitments and to explain how these commitments support transformative pathways on energy and water and scaled-up actions supporting climate change objectives.



**United
Nations**



**High-level Dialogue on Energy
New York, September 2021**



ADVOCACY AND OUTREACH

COP26 Side Event “Sustainable Water and Energy Solutions supporting Climate Change Objectives during the Decade of Action and Beyond”

4 November 2021



The 2021 UN Conference on Climate Change (COP 26) offered a unique platform for members of the Global Sustainable Water and Energy Solutions Network to present and discuss their current and future plans for activities, projects and programmes supporting climate change mitigation and adaptation.

The event was moderated by the Deputy Director General for Science at IIASA, included Welcoming Remarks by the UN USG for Economic and Social Affairs and Opening Remarks by the Minister of Mines and Energy, Brazil. Panelists from Canal De Isabel II, ICC Guatemala, Itaipu Binacional, SOLshare and the Solar Energy Foundation, shared their plans and outlooks related to climate change. These solutions include improvements in energy efficiency, investments in the developing world, innovative plans designed to transform the way we interact with energy and water, all in the interest of building climate mitigation, resilience, and adaptation.



MOVING FORWARD: 2022 AND BEYOND

- The First World Gathering on Sustainable Water and Energy Solutions at Itaipu
- Expansion of the scope of the Network activities to incorporate terrestrial ecosystems, biodiversity and climate change as well as other Sustainable Development Goals.
- Publication of technical papers in a dedicated issue of the United Nations Sustainable Development Journal (Natural Resource Forum) on Sustainable Water and Energy Solutions
- Develop the First World Report on Sustainable Water and Energy Interlinkages: Status, Trends and Solutions.
- Dedicated events at the United Nations annual world meetings:
 - The global UN High Level Political Forum on Sustainable Development
 - The UN General Assembly (annual meeting of Head of States)
 - The annual UN global meetings on Climate Change (COPs)
 - The annual global meetings on “Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development”
- Capacity development activities at the global, regional and national and subnational levels
 - Meeting in Latin America and the Caribbean Region in collaboration with UN ECLAC, to gain insights on priority issues under the themes of the Global Roadmap to achieve SDG 7 and to provide inputs on topics related to integrated sustainable water and energy solutions.
 - Training course based on the educational platform of ITAIPU to raise awareness of the importance of the Sustainable Development Goals (SDGs) and to inform about the role that institutions, companies and communities play in achieving these goals and the 2030 Agenda for Sustainable Development. Special emphasis will be given to the SDGs on water (SDG 6), energy (SDG 7), climate change (SDG13) and terrestrial ecosystems/Biodiversity (SDG15).
 - Conduct outreach programmes in Africa, Western Asia, Asia-Pacific, LAC and/or Europe
- A series of technical briefs to be published on innovative technological systems based on integrated approaches to water and energy in topics such as Desalination using renewable energy, PV floating solar, Green Hydrogen, etc.
- Continue enhancing the Knowledge Platform of the Network.

SUSTAINABLE WATER & ENERGY SOLUTIONS



For further information, please contact:
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