THE EU-GCC COOPERATION ON GREEN TRANSITION PROJECT

Funded by the European Union

WEBINAR SERIES 2026 . WEBINAR 2

Water Resilience in the GCC

Resilient Supply, Sustainable Desalination, Smart Distribution, Water Ecosystems and the Water-Energy Nexus

SUMMARY REPORT
Webinar 2 | 6 July 2026 | Virtual (Webex)

SUMMARY REPORT

Contents

This report summarises the second session of the EU-GCC Resilient Green Transition Webinar Series 2026, held on Monday, 6 July 2026, focused on water resilience across the GCC.

WATER RESILIENCE IN THE GCC	
DATE & TIME	6 July 2026 · 12:00–13:30 UAE | 11:00–12:30 Riyadh | 10:00–11:30 Brussels
FORMAT	Online webinar · Webex · EU-funded cooperation programme
MODERATOR	Spyros Kouvelis – Team Leader, EU-GCC Cooperation on Green Transition Project
ORGANIZER	Rania Nseir – Events & Communications Expert, EU-GCC Cooperation on Green Transition Project
SCENE-SETTING KEYNOTE	**Patrick Wegerdt** – International Relations Officer, Regional and Bilateral Environmental Cooperation, Directorate-General for Environment, European Commission
PANELLISTS	**Prof. Mathaios Panteli** – Associate Professor, University of Cyprus **Dr. Jauad El Kharraz** – CEO & Founder, Water-Energy-Climate Experts Network; Former R&D Director, Middle East Desalination Research Center, Oman **Nicolas Le Goff** – Chief Operating Officer, Veolia Oman **Patrick Wegerdt** – Directorate-General for Environment, European Commission
AUDIENCE ENGAGEMENT	182 registered participants · 73 live attendees · 33 live Slido poll participants
NEXT WEBINAR	September 2026 – Protecting Critical Energy, Water and Essential Infrastructure: Resilience, Cyber Risk, Continuity and Emergency Preparedness

182
REGISTERED
participants

73
LIVE ATTENDEES
throughout the session

33
SLIDO RESPONSES
to the live poll

The audience brought together policymakers, utilities, researchers, industry representatives, international organisations, technology providers and private-sector stakeholders from Europe, the GCC and beyond.

02 EXECUTIVE SUMMARY

Water resilience as a strategic priority for the GCC

Water resilience is no longer a technical or sector-specific issue. For the GCC, it is becoming a strategic priority at the intersection of climate adaptation, food security, energy security, infrastructure resilience, environmental protection and long-term economic competitiveness.

The second webinar of the EU-GCC Resilient Green Transition Webinar Series 2026 examined how the GCC can strengthen water resilience in the face of rising demand, increasing climate pressures, limited natural freshwater resources and growing interdependence between water and energy systems. Building on the first webinar on energy-system resilience, the discussion extended the resilience agenda from power systems to water systems, demonstrating that the two cannot be planned or governed in isolation.

The webinar highlighted that desalination would remain central to the GCC's water future. However, the discussion also made clear that desalination alone cannot provide a complete answer. A resilient water system requires a diversified portfolio of solutions: more efficient desalination, lower energy intensity, renewable-powered water production, water reuse, non-revenue water reduction, smart distribution networks, brine management, demand-side awareness, stronger governance and regional cooperation.

Patrick Wegerdt's keynote on the European Water Resilience Strategy provided a wider policy framework for the discussion. He underlined the European Union's focus on restoring and protecting the water cycle, building a water-smart economy, securing clean and affordable water and sanitation, and strengthening global water governance. The keynote framed water resilience as both a European and global challenge, with clear relevance for EU-GCC cooperation.

The panel discussion brought together complementary perspectives from European policy, academic research, utility operations and regional water innovation. **Nicolas Le Goff** reflected on practical implementation across the GCC, drawing on Veolia Oman's experience in desalination, wastewater treatment, digital operations and water network resilience. **Prof. Mathaios Panteli** introduced a systems-resilience perspective, emphasising the water-energy-climate nexus, infrastructure stress testing, decentralised systems and digital twins. **Dr. Jauad El Kharraz** highlighted the importance of integrated planning, technology localisation, sustainable desalination, brine valorisation, decentralised solutions and regional cooperation. **Patrick Wegerdt** connected these insights back to the EU's experience in integrated water management, transboundary cooperation, water reuse and environmental safeguards.

THE HEADLINE TAKEAWAY

The GCC has already developed world-class experience in large-scale desalination and water infrastructure. The next phase of resilience will depend on moving from supply expansion alone towards integrated water-system transformation.

Water resilience across the GCC will require sustainable desalination, smart distribution, water reuse, energy-efficient operations, ecosystem protection, regional coordination and a stronger water-energy-food-environment nexus approach.

EU-GCC cooperation can support this transition by connecting European experience in governance, regulation, water reuse, environmental policy and transboundary cooperation with GCC experience in large-scale deployment, innovation, investment and water management under extreme climatic conditions.

◆ A platform for structured EU-GCC dialogue

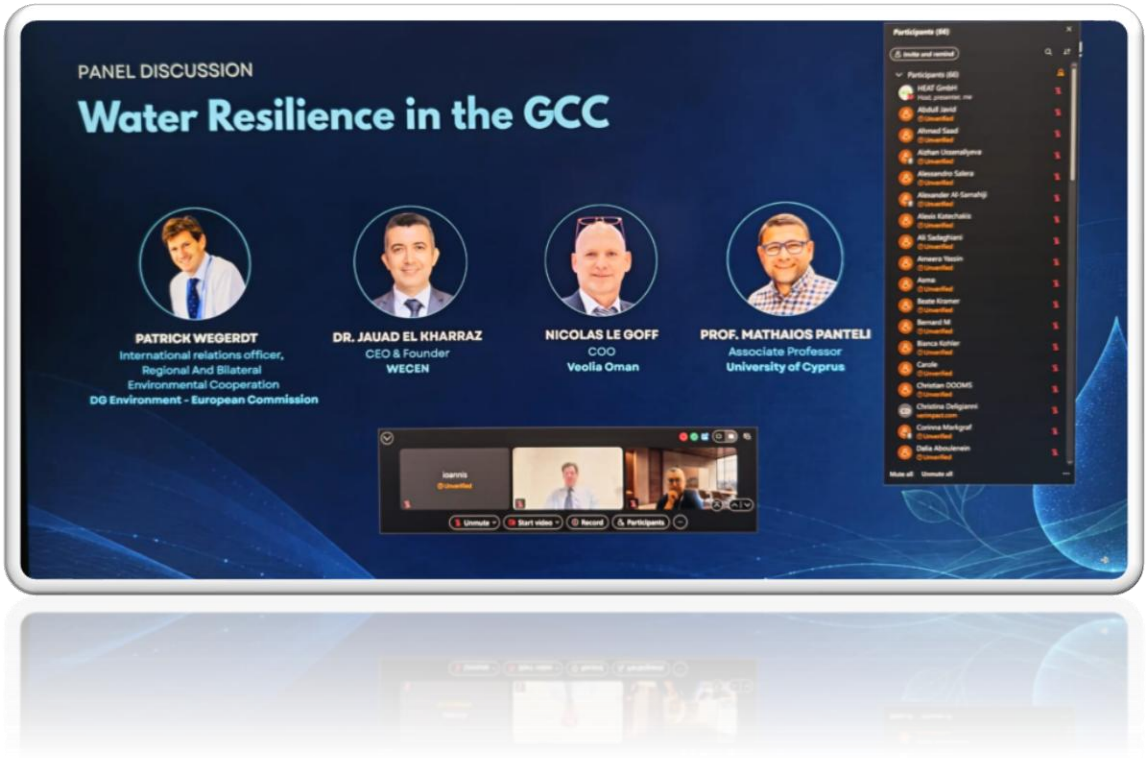
The EU-GCC Cooperation on Green Transition Project, funded by the European Union, supports dialogue, knowledge exchange and practical cooperation between the European Union and the Gulf Cooperation Council countries across the green transition agenda. The project focuses on three broad pillars: climate mitigation and clean energy; hydrogen and low-carbon fuels; and climate adaptation and resilience. Water resilience sits at the centre of the third pillar, while also connecting directly with energy systems, sustainable infrastructure, climate risks, agriculture, biodiversity and investment.

The Resilient Green Transition Webinar Series 2026 was launched to maintain structured EU-GCC engagement during a period of heightened regional volatility and to advance practical dialogue on resilience across key sectors. The first webinar focused on energy-system resilience. This second webinar examined water resilience, with particular attention to sustainable desalination, smart water management, infrastructure resilience, water ecosystems and the water-energy nexus.

The webinar aimed to:

- Explore what water resilience means in practice for the GCC;
- Examine the role of sustainable desalination in long-term water security;
- Identify opportunities to improve water efficiency, reuse and smart distribution;
- Strengthen understanding of the water-energy-climate-food nexus;
- Discuss infrastructure resilience, decentralised systems and risk management;
- Highlight European experience in integrated water governance and transboundary cooperation;
- Identify practical opportunities for enhanced EU-GCC cooperation.

The discussion was designed as an interactive policy dialogue rather than a technical presentation session. It combined a European Commission keynote, a live audience poll, a moderated expert panel and an audience Q&A.



04 SCENE-SETTING KEYNOTE

The European Water Resilience Strategy: acting in the EU and globally

Patrick Wegerdt · Directorate-General for Environment, European Commission

Patrick Wegerdt opened the webinar by presenting the European Water Resilience Strategy and situating it within the European Union's wider environmental, climate and global cooperation agenda. His keynote framed water resilience as a shared challenge requiring integrated governance, stronger implementation, investment, citizen engagement and international cooperation.

Restoring the water cycle and building a water-smart economy

Patrick Wegerdt explained that the European Water Resilience Strategy is built around three central objectives:

- **Restore and protect the water cycle** – the basis for sustainable water supply, covering both green water and blue water, and requiring protection of ecosystems, soils, wetlands, rivers, groundwater and marine environments.
- **Build a water-smart economy** – promoting water savings, efficiency, reuse and recycling across sectors, while supporting industrial competitiveness.
- **Secure clean and affordable water and sanitation** – particularly for vulnerable and marginalised groups, linking water resilience to public health, inclusion and access to basic services.

FIGURE 1. The three objectives of the European Water Resilience Strategy, as presented in the keynote.

A comprehensive European policy framework

The keynote highlighted the depth and breadth of the EU's water policy framework, which has developed over several decades. Key instruments include:

- Water Framework Directive
- Floods Directive
- Nitrates Directive
- Marine Strategy Framework Directive
- Bathing Water Directive
- Drinking Water Directive
- Urban Wastewater Treatment Directive
- Water Reuse Regulation

Together, these instruments demonstrate the EU's long-standing effort to coordinate water policy across member states, improve implementation, strengthen accountability and promote a more integrated approach to water management.

Patrick Wegerdt also emphasised that implementation and governance remain central challenges. Strong legislation is necessary, but not sufficient. Effective water resilience requires better enforcement, improved transboundary cooperation,

stronger involvement of citizens and stakeholders, accountable authorities and water-smart spatial planning to guide the green and digital transition.

Water resilience as a global challenge

The keynote then placed the EU strategy within the global water agenda, citing figures that underline why water security can no longer be taken for granted:

2.2 bn
people worldwide lack access to safe drinking water

> 50%
of the global population lacks access to safe sanitation

~80%
of the world's wastewater is discharged untreated

40 M
people displaced by water-related disasters in 2024

€480 bn
in damages caused by water-related disasters in 2024

$182–664 bn
estimated annual global water-sector financing gap

FIGURE 2. Towards global water resilience — the scale of the challenge, as presented in the keynote.

For Patrick Wegerdt, these figures demonstrate why water can no longer be taken for granted. Water resilience is increasingly linked to security, competitiveness, climate adaptation, biodiversity, combating desertification and sustainable urban development.

Acting globally: cooperation, SDG6 and transboundary water governance

The keynote underlined the importance of the global water agenda and Sustainable Development Goal 6 on clean water and sanitation. Patrick Wegerdt noted that progress remains uneven, particularly in relation to water quality, improved water management, ecosystems and cooperation.

He also highlighted the UN System-Wide Strategy on Water and Sanitation, launched in 2024, and its Implementation Plan for 2025-2028, which aims to improve coordination across the UN system and support member states more effectively. The appointment of the UN Special Water Envoy was presented as an important step in strengthening global water action.

A further focus was the UN Water Convention, to which the EU and most EU Member States are parties. Patrick Wegerdt described the Convention as a valuable framework for transboundary water cooperation, requiring parties to prevent and reduce transboundary impacts, use shared water resources in a reasonable and equitable way and ensure sustainable management.

IN HIS OWN WORDS

"Water resilience is both a European and a global challenge — and one where EU-GCC cooperation has real and growing relevance."

Patrick Wegerdt, European Commission (DG Environment)

An invitation to EU-GCC cooperation

The keynote concluded by connecting the European experience to opportunities for EU-GCC cooperation. Patrick Wegerdt highlighted the relevance of integrated water resource management, water efficiency, water reuse, transboundary cooperation, nature-based solutions and water investments.

While the GCC faces a very different water context from Europe, particularly because of its reliance on desalination and its extreme climatic conditions, the European experience offers useful lessons in governance, coordination, regulation, environmental protection and stakeholder engagement.

At the same time, the GCC brings its own significant experience in large-scale desalination, water infrastructure, adaptation to water scarcity and innovation under demanding conditions. This complementarity provides a strong basis for continued EU-GCC dialogue on water resilience.

Download Mr. Patrick Wegerdt's presentation here.

05 PANEL DISCUSSION HIGHLIGHTS

Perspectives from policy, research, utilities and innovation

Moderated by **Spyros Kouvelis**, Team Leader of the EU-GCC Cooperation on Green Transition Project, the panel brought together four complementary perspectives on water resilience.

Patrick Wegerdt contributed the European policy and global water governance perspective. **Prof. Mathaios Panteli** brought expertise in infrastructure resilience, energy systems and the water-energy nexus. **Nicolas Le Goff** provided a utility and industry perspective based on Veolia Oman's operational experience in desalination, wastewater treatment, water distribution and digital transformation. **Dr. Jauad El Kharraz** contributed regional and international expertise in desalination innovation, water-energy-climate systems and cooperation across the Middle East, North Africa and Europe.

The panel: Patrick Wegerdt, Dr. Jauad El Kharraz, Nicolas Le Goff, Prof. Mathaios Panteli and moderator Spyros Kouvelis.

Together, the discussion examined how resilient water systems can be designed, governed, financed and operated across the GCC.

◆ Defining water resilience in the GCC context

Opening the panel, **Spyros Kouvelis** invited the speakers to reflect on what water resilience means in practice for the GCC, following Patrick Wegerdt's presentation of the European Water Resilience Strategy.

Nicolas Le Goff began by grounding the discussion in the physical realities of the region. Compared with many European contexts, where annual rainfall is significantly higher and natural freshwater resources are more widely available, the GCC faces a very different water balance. In countries such as Oman, rainfall is limited and freshwater availability is highly constrained. This makes water supply a strategic issue and places desalination at the centre of national resilience.

From an operational perspective, Nicolas Le Goff emphasised that resilience means ensuring secure, affordable and sustainable water supply under increasing pressure from demand growth, climate change, water quality risks and cost constraints. He highlighted the importance of improving the efficiency of desalination, decarbonising water production, expanding wastewater reuse and using digital technologies, including artificial intelligence, to optimise operations and reduce costs.

Building on this, **Prof. Mathaios Panteli** widened the definition of water resilience to include the interdependence between water and energy systems. Drawing on Cyprus's experience, he recalled how a major power-system incident in 2011 affected the country's ability to produce desalinated water, requiring reductions in both electricity and water consumption. For Panteli, this illustrated a core lesson for the GCC: water cannot be treated as a standalone infrastructure system. It is deeply dependent on energy, and energy itself is exposed to climate, operational and geopolitical risks.

Prof. Panteli therefore proposed that water resilience should be understood through a water-energy-climate nexus lens. In regions where desalination is energy-intensive and water is essential for cooling, agriculture, households and industry, cascading risks across systems must be anticipated and planned for.

Dr. Jauad El Kharraz reinforced this systems perspective by arguing that water resilience requires an immediate shift from conventional supply planning to integrated water strategy. In his view, the GCC must plan across water, energy, food and climate systems at the same time. This means reducing overdependence on non-renewable groundwater, scaling non-conventional water resources, addressing seawater intrusion, making desalination more sustainable and using decentralised and modular infrastructure to reduce exposure to shocks.

Patrick Wegerdt added that this broader nexus approach is also increasingly central to European and Mediterranean cooperation. He noted that the water-energy-food-environment nexus provides a useful framework for connecting water policy with climate adaptation, food security, biodiversity, energy systems and economic resilience.

◆ Learning from Europe: adaptation, not transplantation

The panel then turned to the question of how European experience could inform water resilience in the GCC, while recognising that solutions cannot simply be copied from one region to another.

Prof. Mathaios Panteli highlighted Europe's experience in critical infrastructure stress testing. He explained that resilience planning increasingly involves pushing infrastructure systems to their limits, identifying bottlenecks and quantifying risks before crises occur. This approach allows regulators, operators and investors to understand vulnerabilities and prioritise investment more effectively.

For Prof. Panteli, this type of risk-based planning is particularly relevant for the GCC. However, he cautioned against generic or “hazard-agnostic” resilience models. Infrastructure resilience must be tailored to local risks, climatic conditions, demand patterns and system characteristics. In the GCC, this means planning for extreme heat, rising water demand, seawater intake risks, power-system dependencies, cyber risks and the operational realities of desalination-heavy water systems.

From a utility perspective, **Nicolas Le Goff** identified several areas where European operational experience can be adapted to the GCC. One priority is reducing non-revenue water through leak detection, network monitoring and smarter distribution. He noted that water network efficiency varies significantly worldwide, and that improving efficiency can generate major resilience gains without requiring new water production capacity.

Nicolas Le Goff also described how artificial intelligence and digital tools are being used to optimise desalination plants, monitor operations, support predictive maintenance and anticipate risks before they materialise. He referred to tools that can help operators assess potential risks to seawater intake, including pollution events or changes in marine conditions. These types of digital capabilities are increasingly important in a region where water security depends on the continuous operation of large desalination assets.

Dr. Jauad El Kharraz argued that the GCC can learn from Europe's structured approach to integrated water resources management, demand management, wastewater reclamation and environmental impact assessment. At the same time, he stressed that the GCC must develop its own distinctive technological path. European water systems do not face the same combination of extreme seawater salinity, high temperatures, biofouling risks and harmful algal bloom challenges that characterise parts of the Arabian Gulf and Red Sea.

This, he argued, makes technology localisation essential. Rather than relying only on imported solutions, the GCC should continue developing local research capacity, centres of excellence and customised membrane and pre-treatment technologies adapted to regional marine conditions. He pointed to existing innovation capacity in the region, including research institutions in Saudi Arabia and the United Arab Emirates, as a foundation for this localisation agenda.

Patrick Wegerdt complemented these reflections by noting that desalination, while important, is not viewed in the EU as a panacea. In Europe, water reuse, reduction of infrastructure losses and improved water efficiency are often considered lower-hanging fruit because they can reduce pressure on resources without the same level of energy demand or capital intensity. This European perspective is relevant to the GCC not because it replaces desalination, but because it reinforces the importance of building a more diversified water-resilience portfolio.

◆ Sustainable desalination: necessary, but not sufficient

Given the GCC's dependence on desalination, the panel devoted significant attention to how desalination can expand while becoming more efficient, sustainable and resilient.

Nicolas Le Goff underlined that desalination is already central to the region's water security. The GCC accounts for a major share of global desalination capacity, and companies such as Veolia have been deeply involved in the development and operation of large-scale desalination assets across the region.

He stressed that significant progress has already been made in reducing the energy intensity of desalination. In Oman, he noted that specific power consumption has been reduced substantially over recent years, reflecting improvements in technology, operations and efficiency. However, he also argued that there remains room for further optimisation through advanced membranes, energy recovery systems, smarter plant operations and digital control tools.

For Nicolas Le Goff, sustainable desalination must also address environmental impacts. Brine management is a growing priority, not only as an environmental challenge but also as a potential opportunity. The minerals contained in brine may create future value if commercially viable offtake pathways can be developed. In parallel, careful monitoring of marine ecosystems around intake and outfall points is essential to ensure that desalination expansion does not undermine coastal and marine resilience.

Prof. Mathaios Panteli connected desalination directly to the electricity system. New desalination capacity should be planned alongside the energy infrastructure needed to power it. This includes renewable energy integration, electricity storage, flexible operation and digital monitoring.

Prof. Panteli highlighted the potential for desalination units to operate more flexibly, adjusting production to the availability of renewable electricity or stored energy. This would help reduce pressure on the power system, lower costs and support higher shares of renewable energy. He also emphasised the importance of data: performance indicators, operational data and digital monitoring are essential for governance, investment planning and long-term optimisation.

Dr. Jauad El Kharraz provided a detailed innovation perspective. He noted that seawater reverse osmosis now dominates the desalination market and has seen major improvements in energy performance over recent decades. Energy consumption has fallen sharply compared with earlier generations of technology, supported by energy recovery devices, improved membranes and more efficient high-pressure pumps.

Looking ahead, Dr. El Kharraz identified several priorities for sustainable desalination in the GCC. These include further reductions in energy intensity, renewable-powered desalination, semi-batch and hybrid systems, brine mining, zero liquid discharge approaches and the extraction of valuable minerals from brine streams. He also pointed to the possibility of integrating desalination with agriculture, industry and hydrogen production, provided that planning is done through an integrated water-energy-food lens.

Patrick Wegerdt added an environmental governance perspective, emphasising that desalination planning should also consider cumulative regional impacts. In semi-enclosed marine environments, multiple desalination facilities can have combined effects on ecosystems, salinity and water quality. This creates a strong case for regional monitoring, environmental assessment and cooperation.

◆ Water reuse, demand management and the value of wastewater

A recurring theme throughout the discussion was that water resilience cannot be achieved by increasing supply alone. Reducing demand, improving efficiency and reusing water are equally important.

Nicolas Le Goff described wastewater as a resource rather than a waste product. Treated wastewater can support agriculture, municipal uses, landscaping and industrial applications, reducing the pressure on desalinated water and groundwater. He argued that every alternative source should be considered where appropriate, particularly in a region where producing water is energy-intensive and costly.

The discussion also highlighted the social and behavioural dimension of reuse. Le Goff referred to international examples where treated wastewater has become an important component of urban water supply, while acknowledging that social acceptance remains a challenge. Trust in alternative water sources, public awareness and confidence in treatment standards are essential if reuse is to scale.

This theme was strongly echoed in the audience discussion. Participants raised questions about end-user awareness, water-intensive practices, agriculture, subsidies and readiness for alternative water management. The panel's response reinforced that technology alone is not enough. Policy incentives, public communication, pricing structures, standards and education all shape whether reuse and efficiency measures are adopted at scale.

Dr. Jauad El Kharraz brought the agriculture dimension into focus. Drawing on experience in northern Oman, he described how groundwater salinisation and seawater intrusion are already affecting farmers in some areas. Brackish-water desalination powered by solar energy can help in such contexts, but it also creates brine-management challenges. If brine is poorly disposed of or reinjected into aquifers, it can worsen salinisation and undermine long-term resilience.

This example demonstrated the importance of pairing decentralised solutions with proper regulation, training and environmental safeguards. It also showed why water resilience in the GCC must address the full chain of water production, use, reuse and disposal.

◆ Digitalisation, AI and infrastructure resilience

Digitalisation emerged as one of the most important enablers of water resilience.

Nicolas Le Goff explained how digital systems are increasingly being integrated into desalination and water operations. By combining design information, process data, operational measurements and SCADA systems, artificial intelligence tools can support operators, identify anomalies, optimise maintenance and improve performance. In a region where water systems must operate continuously under challenging conditions, predictive capabilities are increasingly valuable.

Prof. Mathaios Panteli highlighted the role of digital twins in resilience planning. He described work in Cyprus to develop a national-level digital twin combining data from critical infrastructure systems, including electricity and water. Such tools allow operators and regulators to run “what if” scenarios, assess climate and emergency risks, identify interdependencies and improve preparedness.

For the GCC, digital twins and stress-testing tools could support more integrated planning across water, electricity, transport, health and other essential services. This is particularly relevant as water infrastructure becomes more complex, interconnected and dependent on digital control systems.

The panel also underlined that data is not only a technical issue. Reliable data enables better governance, investment decisions, financing, accountability and public trust. Without robust data, it is difficult to identify leakage, measure efficiency, assess risks, verify project performance or justify investment.

◆ Decentralised systems and resilience by design

Audience questions brought particular attention to decentralised desalination and smaller-scale systems, including units in the range of 1,000 to 10,000 cubic metres per day.

Prof. Mathaios Panteli explained that decentralised systems can reduce dependence on large, centralised assets and bring water and energy production closer to demand. In both electricity and water systems, decentralisation can reduce infrastructure losses, improve local resilience and make risk management more manageable. This does not mean replacing large-scale infrastructure but rather complementing it with distributed solutions where they are appropriate.

Dr. Jauad El Kharraz supported this view, noting that decentralised desalination has already been successfully demonstrated in remote communities and small villages, including systems powered by renewable energy. He argued that, in the current regional security context, decentralised solutions can also reduce reliance on single large assets that may be exposed to disruption.

The discussion therefore pointed towards a more diversified infrastructure model: large-scale desalination for major urban and industrial demand, complemented by decentralised systems for remote communities, agriculture, emergency supply and specific local needs.

◆ Governance, finance and the role of regulation

The panel repeatedly returned to governance as a decisive factor in water resilience.

Patrick Wegerdt underlined that financing for water is a major global challenge, with an annual gap measured in hundreds of billions of dollars. From the EU perspective, more integrated planning and better use of existing financing instruments are essential. He also highlighted the role of international financial institutions, including the European Investment Bank, and the importance of aligning water investments with wider regional cooperation frameworks, including in the Mediterranean.

The discussion made clear that financing is not only about the availability of capital. It also depends on coherent regulation, bankable project structures, reliable data, environmental safeguards, long-term planning and clear institutional responsibilities.

Audience questions asked whether standardised policy systems could work across the GCC or whether each country would need to develop its own legislative framework. While the panel did not suggest a one-size-fits-all approach, it highlighted the value of harmonised principles, shared standards, regional cooperation and exchange of best practices.

Prof. Mathaios Panteli added that regulators themselves must collaborate more closely. Water regulators and electricity regulators often work in silos, even though the systems they oversee are increasingly interconnected. Stronger cross-regulatory coordination will be essential to manage the water-energy nexus.

Dr. Jauad El Kharraz also linked regulation to future competitiveness. As climate-related trade and sustainability requirements become more important globally, the GCC may benefit from verified green-label frameworks for water-intensive agricultural and industrial products, particularly where production is powered by renewable energy or supported by low-carbon water systems.

◆ Regional cooperation and future-ready water systems

The final part of the discussion focused on cooperation within the GCC and between the GCC, Europe and neighbouring regions.

Nicolas Le Goff explained that resilience is already being strengthened through the interconnection of desalination plants and water transmission systems within countries. In Oman, for example, water production assets and transmission loops allow water to be moved across different parts of the system when specific plants face operational or water-quality issues. Similar interconnections are developing in other GCC countries.

While cross-border water interconnections are not yet comparable to energy interconnections, the discussion suggested that future regional cooperation could become increasingly important. Shared monitoring systems, emergency planning, common standards and coordinated environmental assessment can all support collective resilience.

Dr. Jauad El Kharraz drew a parallel with the GCC electricity interconnection, arguing that similar thinking could gradually be explored for water systems. He also highlighted previous cooperation on harmful algal bloom monitoring, noting that marine risks do not stop at national borders. Regional early-warning systems, shared data and coordinated response mechanisms could strengthen resilience across the Gulf.

Patrick Wegerdt closed the panel by returning to the environmental dimension of transboundary cooperation. From a DG Environment perspective, he emphasised that regional cooperation is especially important for assessing cumulative environmental impacts, including those associated with desalination. Europe's experience with transboundary environmental governance offers relevant lessons, while the GCC's specific context requires tailored solutions.

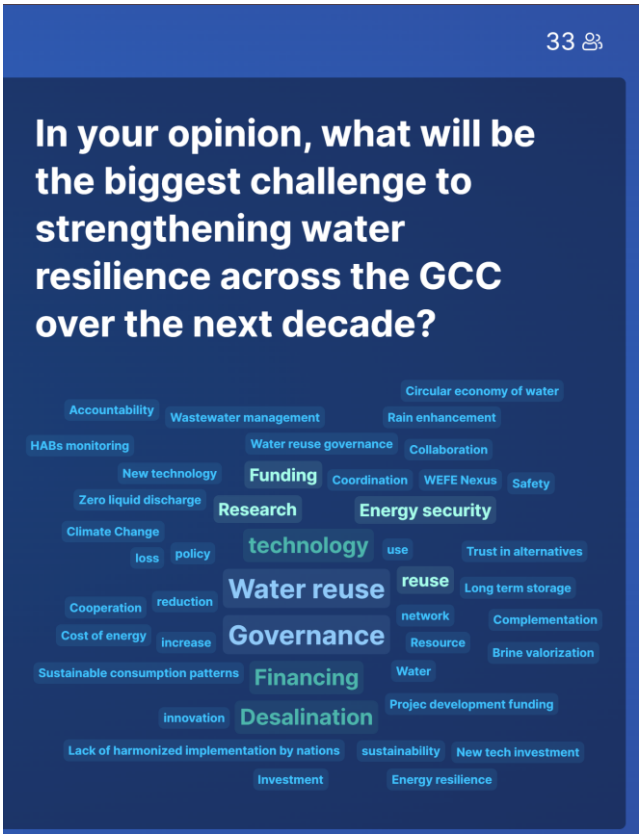
> *Across the discussion, a common message emerged:* ***water resilience cannot be built by individual technologies or institutions acting alone. It requires systems thinking, cooperation across sectors, cooperation across borders and sustained dialogue between governments, utilities, researchers, industry and international partners.***

What the audience told us

The webinar generated strong audience engagement through the live Slido poll, Webex chat and Q&A. Participants used the discussion not only to ask technical questions, but also to raise broader policy and strategic issues linked to water security, governance, investment, agriculture, decentralised systems and regional cooperation.

◆ Slido word cloud · Biggest challenge to strengthening water resilience across the GCC

The audience was asked: ***"In your opinion, what will be the biggest challenge to strengthening water resilience across the GCC over the next decade?"***



Live Slido word cloud — 33 poll participants.

The most prominent responses were **water reuse**, **governance**, **financing**, **desalination** and **technology**. Other recurring terms included **funding**, **research**, **energy security**, **wastewater management**, **zero liquid discharge**, **brine valorisation**, **collaboration**, **coordination**, **WEFE nexus**, **accountability**, **policy**, **trust in alternatives**, **sustainable consumption patterns**, **long-term storage**, **new technology investment** and **rain enhancement**.

The word cloud reflected the central themes of the panel discussion. Participants clearly recognised that water resilience is not only a supply issue. It also depends on governance, financing, technology deployment, water reuse, public trust, regional collaboration and the management of environmental impacts.

The prominence of water reuse was particularly significant. It confirmed strong audience interest in moving beyond a desalination-only model towards a more diversified water portfolio that includes recycling, wastewater treatment, demand management and alternative sources.

At the same time, the visibility of governance and financing in the word cloud showed that participants understand the implementation challenge. Technologies exist, but deployment at scale requires coherent policy frameworks, bankable investment models, standards, data and public acceptance.

◆ Question & Answer session

The Q&A demonstrated that participants were looking beyond high-level strategy towards practical implementation.

Several questions focused on **regional cooperation**, including how far GCC collaboration on water resilience could go and whether the lessons shared could inform proactive approaches to climate-transition risks in other water-stressed regions. This reinforced the broader international relevance of the GCC experience.

Questions on **policy harmonisation** asked whether a standardised GCC-wide policy system could work, or whether each country would need tailored legislation based on its own agricultural structure, water demand and infrastructure conditions. The panel's discussion suggested that while national circumstances differ, shared standards, data exchange and regional cooperation can strengthen resilience.

A number of questions addressed **decentralised desalination**, including the role of smaller systems for remote communities and the agriculture sector. Panellists highlighted decentralisation as a useful complement to large-scale infrastructure, particularly where it reduces losses, improves local resilience or supports remote users. However, they also stressed that brine management, training and regulation are essential.

The audience also raised questions about **agriculture and alternative water management**, including subsidy-related resistance, readiness for reuse and the need to reconsider water-intensive practices in regions facing long-term water stress. These questions underscored the importance of linking water resilience to food security, public awareness and demand-side behaviour.

Other questions focused on **geopolitical risk**, including whether recent regional tensions and damage to water infrastructure could affect the way Gulf governments invest in desalination resilience. This reflected a wider concern that water systems must be prepared not only for climate pressures, but also for security, operational and infrastructure risks.

Participants also asked what the EU can offer the GCC on the **water-energy nexus**. The panel highlighted several areas of cooperation, including integrated planning, regulatory experience, digital tools, infrastructure stress testing, renewable-powered desalination, water reuse, nature-based solutions and research partnerships.

◆ Threads from a busy chat

Beyond the formal Q&A, the Webex chat highlighted several additional issues that are likely to inform future dialogue under the webinar series.

Key discussion threads included:

- **Collaboration beyond the GCC** – participants from outside the region highlighted the relevance of GCC water-resilience lessons for other water-stressed regions.
- **Trust in alternative water sources** – questions and poll responses showed that public confidence, awareness and standards will be essential for scaling water reuse.
- **Decentralised desalination** – participants expressed interest in smaller, modular systems that can support remote areas, agriculture and emergency preparedness.
- **Agriculture and water-intensive practices** – several questions pointed to the need to align food security with realistic water availability, sustainable irrigation and alternative water sources.
- **Geopolitical resilience** – participants raised concerns about how regional tensions could influence future investment in desalination protection, redundancy and infrastructure design.
- **EU-GCC learning in both directions** – the discussion showed that Europe can share experience in governance, regulation and integrated water management, while the GCC can offer practical lessons from operating water systems under extreme scarcity.

> **VOICES FROM THE WEBEX CHAT**
>
> *"Some of us might need to use the lessons shared to work out transition climate risks associated with water resilience proactively." — participant, Uganda*
>
> *"We can't rely on excessive desalination, and groundwater isn't renewable — so we need to focus on recycling water, capturing rainwater and investing in promising new technologies."*

The breadth and quality of the audience questions confirmed strong demand for continued EU-GCC dialogue on practical water-resilience solutions.

07 KEY MESSAGES

Ten strategic takeaways

Distilled from the keynote, panel discussion and audience exchange.

1 **Water resilience is a strategic priority for the GCC.**
Water resilience is directly linked to climate adaptation, energy security, food security, public health, economic competitiveness and infrastructure continuity.

2 **Desalination will remain central, but it cannot stand alone.**
The GCC's future water security will continue to rely on desalination, but long-term resilience requires a wider portfolio that includes reuse, efficiency, leakage reduction, groundwater protection and demand management.

3 **The water-energy-food-environment nexus must guide planning.**
Water systems are energy-dependent, energy systems are water-dependent, and both are exposed to climate and environmental risks. Planning must move beyond sectoral silos.

4 **Sustainable desalination requires efficiency, renewable energy and brine management.**
The next phase of desalination must focus on lower energy intensity, renewable-powered production, advanced membranes, energy recovery, brine valorisation and marine ecosystem protection.

5 **Water reuse is a major untapped resilience opportunity.**
Wastewater should increasingly be treated as a resource. Scaling reuse will require technical standards, public trust, policy incentives and stronger communication with end users.

6 **Digitalisation turns resilience into operational capability.**
AI, smart monitoring, SCADA integration, predictive maintenance and digital twins can help operators anticipate risks, optimise performance and strengthen system preparedness.

7 **Infrastructure must be stress-tested against cascading risks.**
Water infrastructure should be assessed against climate extremes, power disruptions, seawater quality risks, cyber risks, geopolitical disruptions and cascading failures across interconnected systems.

8 **Governance and regulation are as important as technology.**
Implementation depends on clear institutional responsibilities, reliable data, enforceable standards, coordinated regulation, environmental safeguards and bankable investment frameworks.

9 **Regional cooperation can strengthen collective resilience.**
Shared monitoring, early-warning systems, harmonised principles, interconnections, environmental assessment and knowledge exchange can help GCC countries manage risks that cross borders.

10 **EU-GCC cooperation offers strong mutual value.**
Europe brings experience in integrated water governance, transboundary cooperation, water reuse, environmental legislation and nature-based solutions. The GCC brings experience in large-scale desalination, innovation, investment and water management under extreme scarcity. Together, both regions can advance practical cooperation for resilient water systems.

08 CONCLUSIONS

From water scarcity to water resilience

The second webinar confirmed that water resilience is central to the GCC's sustainable future. The region has already demonstrated remarkable capacity to secure water supply under some of the world's most challenging climatic conditions. However, the next decade will require a shift from expanding supply alone towards integrated, efficient, low-carbon and environmentally responsible water systems.

Across the keynote, panel discussion and audience exchange, a consistent message emerged: desalination will remain essential, but resilience depends on much more than desalination capacity. It requires smarter systems, cleaner energy, stronger governance, better data, wider reuse, reduced losses, resilient infrastructure, public trust and regional cooperation.

The discussion also showed that the water-energy nexus is no longer a theoretical concept. In the GCC, water security depends heavily on energy systems, while energy systems are themselves exposed to climate, infrastructure and security risks. Planning these systems separately risks creating hidden vulnerabilities. Planning them together creates opportunities for efficiency, flexibility and resilience.

The webinar highlighted that the technologies needed to strengthen water resilience are advancing rapidly. Reverse osmosis, energy recovery, renewable-powered desalination, brine valorisation, digital twins, smart networks, decentralised systems and wastewater reuse all offer important pathways. Yet technology must be matched by governance, financing, environmental safeguards and institutional coordination.

EU-GCC cooperation can play a valuable role in this process. The European Union's experience in integrated water management, regulation, water reuse, environmental protection, nature-based solutions and transboundary cooperation offers useful lessons. At the same time, the GCC's operational experience in desalination, infrastructure deployment, water scarcity management and innovation under extreme conditions provides important insights for Europe and the wider global water agenda.

The webinar reinforced the importance of continued dialogue between policymakers, utilities, researchers, industry and international partners. By combining complementary strengths, the EU and the GCC are well positioned to advance a practical water-resilience agenda that supports sustainable development, climate adaptation and long-term regional stability.

09 LOOKING AHEAD

Sustaining the momentum

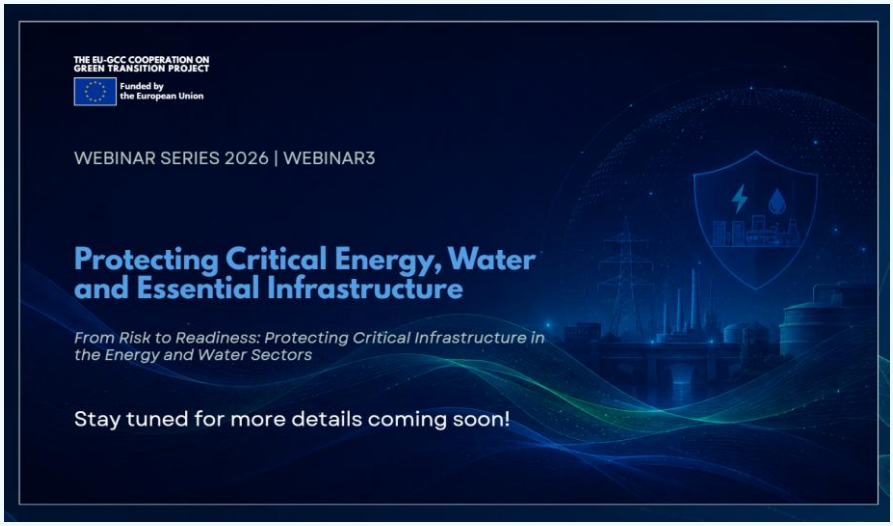
This summary report and the keynote slides will be circulated to registered participants, partner institutions and stakeholder networks, and shared through the project's channels to extend the discussion further.

WEBINAR 3 · September 2026

Protecting Critical Energy, Water and Essential Infrastructure

Resilience, Cyber Risk, Continuity and Emergency Preparedness

Building on the first two webinars, the next session will examine the resilience of critical infrastructure systems that underpin the green transition. It will explore how energy, water and essential services can be protected against climate impacts, cyber risks, operational disruptions and emergency situations.



The discussion will continue the series' integrated approach to resilience, moving from energy and water systems towards the broader infrastructure networks that support economic continuity, public welfare and sustainable development.

◆ Upcoming sessions in the Resilient Green Transition Webinar Series 2026 *(Dates to be confirmed)*

September 2026	Critical Infrastructure – resilience, cyber risk, continuity and emergency preparedness
September / October 2026	Environmental Resilience – air quality, climate adaptation and urban resilience
October / November 2026	Green Infrastructure Investment – frameworks, PPPs, de-risking and the GCC/MENA pipeline
December 2026	Conclusions & Roadmap – recommendations and the way forward for EU-GCC green transition

EU-GCC Cooperation on Green Transition
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This publication was prepared by the EU-GCC Cooperation on Green Transition Project to support knowledge exchange and continued EU-GCC dialogue on the green transition.