QEERI
معهد قطر لبحوث البيئة والطاقة
Qatar Environment & Energy Research Institute
جامعة حمد بن خليفة
HAMAD BIN KHALIFA UNIVERSITY

ICSEWEN23

INTERNATIONAL CONFERENCE ON
SUSTAINABLE ENERGY-WATER-ENVIRONMENT
NEXUS IN DESERT CLIMATE

استكشاف علاقة الترابط المستدامة بين الطاقة والماء والبيئة

يسرنا دعوتكم لحضور النسخة الثالثة من المؤتمر العالمي لعلاقة الترابط المستدامة بين الطاقة والمياه والبيئة في المناخ الصحراوي 2023، والذي يُعقد على مدار أربعة أيام في الدوحة في قطر في مركز قطر الوطني للمؤتمرات. في ضوء النجاح الذي حققته النسختين السابقتين من المؤتمر في عام 2019 وعام 2021، نتوقع استقبال ما يزيد عن 300 زائر ليشهدوا هذا الحدث المحوري. بُني محتوى المؤتمر على خمسةِ مواضيعٍ مركزية تدرس الابتكار، وصنع الحلول، والبحوث الرائدة في قطاعات الطاقة والماء والبيئة.

مؤتمرٌ بارزٌ ينظّمه معهد قطر لبحوث البيئة والطاقة

يُعقد هذا المؤتمر البارز بتنظيمٍ من معهد قطر لبحوث البيئة والطاقة بجامعة حمد بن خليفة مرّةً كل سنتين، ويقدم منصةً جوهريةً تجمع ما بين العلماء من الإقليم والعالم أجمع، لينظروا في التحديات الملحّة والتطورات الرائدة في بحوث الطاقة المستدامة، والمياه، والبيئة، بتركيزٍ خاص على المناخ الصحراوي.

كلمة الترحيب من الرؤساء

يشهد عالم اليوم تغيرًا متزايدًا، يصاحبه تحولاتٍ غير مسبوقةٍ في الأنماط المناخية الإقليمية والعالمية يُسببها الاحتباس الحراري. ويفاقم هذا حالة الانفجار السكاني العالمي وزيادة استهلاك الموارد، فضلًا عن ارتفاع مستويات سطح البحر، وارتفاع درجة حرارة الكوكب، وما نشهده من موجات جفافٍ وحرٍ حادّة متكررة. تفرض هذه التحولات البيئية تداعياتٍ صحية واجتماعية واقتصادية خطيرة على الحياة عامة، والتنوع الحيوي، والعمليات التجارية والحكومية. في ضوء هذا، أصبحت علاقة الترابط بن الطاقة والمياه والبيئة تحديًا عالميًا، خصوصًا في المناطق القاحلة.

برنامجًا يعني بعلاقة الترابط

يضّم المؤتمر الممتد على أربعة أيامٍ جلساتٍ نقاشية دولية ثلاثة، وعروضٍ علمية شفهية ومطبوعة على ملصقات، ومساحات عرض، وجلسات استراحة وتعارف، بالإضافة إلى جلساتٍ نقاشية متعددة التخصصات، يحضرها جهاتٍ مؤثرة محلية ودولية. سيكون هنالك فرصة لإدراج لملخصات البحثية المقبولة في أعدادٍ خاصة تُنشر بالتعاون مع مجلات علمية مرموقة.

NAVIGATING THE SUSTAINABLE ENERGY-WATER-ENVIRONMENT NEXUS

We are delighted to extend a warm welcome to you for **the third edition of the International Conference on Sustainable Energy-Water-Environment Nexus in Desert Climates (ICSEWEN'23),** taking place in Doha, Qatar at the Qatar National Convention Center (QNCC). Following the success of ICSEWEN'19 and ICSEWEN'21, we expect over 300 delegates to attend the four-day ICSEWEN'23, which promises to be a pivotal event, structured around five central themes that delve into innovations, solutions, and groundbreaking research at the intersection of energy, water, and the environment.

A Flagship Conference by QEERI

ICSEWEN is the flagship conference of the **Qatar Environment & Energy Research Institute (QEERI) at Hamad Bin Khalifa University (HBKU),** held biennially. This conference serves as an essential platform, bringing together scientists from the region and across the globe to discuss critical challenges and pioneering advancements in sustainable energy, water, and environmental research, with a particular focus on desert climates.

Greetings from the Chairs

The world around us is changing rapidly, with unprecedented shifts in global and regional climate patterns caused by global warming. This is compounded by pressure from a rising global population and increased consumption of natural resources. Among many other environmental threats, our sea levels are rising, the world temperature is increasing, and we are facing frequent, severe droughts and heat waves. These changes in global environmental patterns have critical health, social, and economic implications on life and biodiversity, as well as business and government operations. In this context, the energy-water-environment nexus represents a global challenge, even more so in arid regions.

A Nexus-Focused Program

ICSEWEN'23 spans four days, featuring three international plenary sessions, scientific oral and poster presentations, exhibition spaces, coffee and networking sessions, and multidisciplinary panel discussions involving national and international stakeholders. Selected abstracts will also have the opportunity to be included in conference special issues published in partnership with renowned journals.

المحاور الرئيسية

يغطي المؤتمر مجموعة من المواضيع التي تعالج التحديات الخطيرة وتقترح حلول مبتكرة:

تحول الطاقة: يبحث المؤتمر في اقتصاد وسياسات تحول الطاقة، وتقنيات الطاقة المستدامة، وإدارة وتكامل الطاقة. ينظر أيضًا في كيفية تحوُّل المجتمعات نحو مصادر طاقة أكثر نظافة واستدامة، وتداعيات هذه التحولات على الاقتصاد والسياسات.

موارد المياه وعملياتها وتطوراتها: نظرًا للقلق المتزايد بخصوص ندرة المياه، يعالج المؤتمر الإدارة واسعة النطاق للمياه، وتقنيات معالجة مياه الصرف الصحي المبتكرة، والتطورات التكنلوجية في قطاع المياه، وأساليب تحلية المياه. اعرف أكثر في طي المؤتمر عن الإنجازات الضخمة المتعلقة بتحقيق وفرة المياه وجودتها في المناطق الجافّة.

التلوث البيئي والتخفيف من وطأته: يُطلعك المؤتمر على التحديات المتعلقة بجودة الهواء في البيئات الجافّة، ويناقش استراتيجيات التكيف مع التغير المناخي، كما ويكشف عن مناهجٍ مبتكرة في الرصد البيئي وإدارة المخلّفات. نستكشف هنا كيف يمكننا تخفيف أثر التلوث ومعالجة التحديات المعقّدة التي يفرضها التغير المناخي.

حلول مبتكرة لقطاع الوقود والغاز: نظرًا للدور المحوري الذي يلعبه قطاع الوقود والغاز في العديد من المناطق الصحراوية، ينظر المؤتمر في حلول التآكل لحماية البنية التحتية بالغة الأهمية، وإدارة الهيدروجين وثاني أكسيد الكربون لتحقيق الاستدامة، والمواد الجديدة المطوَّرة التي تحسّن الأداء البيئي.

الاستدامة والحلول التقنية: في عالم اليوم التقني، يكشف المؤتمر عن إمكانيات الاستدامة التي تقدِّمها الحلول التقنية، ويبحث في مواضيع مرتبطة متعلقة بالأمن الغذائي في المناخ الصحراوي ومفهوم المدن الذكية، حيث يمكن للابتكارات والتكنلوجيا المبينة على البيانات معالجة تحديات حضرية وزراعية معقدة.

سحر الدوحة

ندعوكم إلى تجربة تتعدى المؤتمر تستكشفوا فيها روائع الدوحة بما فيها من مباني جذابّة، ومعالم ثقافية، ومتاحف بمستوى عالمي. ستسنح لك هذه التجربة معايشة النسيج الثقافي القطري الغني في الوقت الذي تساهم فيه في تشكيل مستقبل التنمية المستدام.

ندعوكم لنوحّد الجهود للتصدي للتحديات الملحّة المعاصرة وبناء مسارٍ مستدام للمستقبل. نتطلع إلى مشاركتكم ومساهماتكم.

مع أطيب التمنيات،
د. رامي الفرا، د. خالد محمود، والسيد محمد أيوب، رؤساء المؤتمر العالمي لعلاقة الترابط المستدامة بين الطاقة والمياه والبيئة 2023

Exploring the Key Themes
ICSEWEN'23's themes encompass a comprehensive range of topics, each addressing critical challenges and offering innovative solutions:

Energy Transition: Examine the economics and policy of energy transition, sustainable energy technologies, and energy management and integration. Explore how societies can shift towards cleaner, more sustainable energy sources and the economic and policy implications of such transitions.

Water Resources, Processes, and Advances: In a world where water scarcity is a growing concern, ICSEWEN'23 tackles the management of water resources on a large scale, innovative wastewater treatment techniques, desalination methods, and advancements in water sector technology. Learn about the latest breakthroughs in ensuring water availability and quality in arid regions.

Environmental Pollution and Mitigation: Navigate air quality challenges in arid environments, discuss strategies for climate change adaptation, and discover innovative approaches to environmental monitoring and waste management. Explore how we can mitigate the impact of pollution and address the complex challenges posed by climate change.

Innovative Solutions for the Oil and Gas Industry: The oil and gas industry plays a vital role in many desert regions. ICSEWEN23 explores corrosion solutions to protect critical infrastructure, examines hydrogen and CO2 management for sustainability, and highlights the development of novel materials to enhance environmental performance. Gain insights into how this industry can evolve towards greater sustainability.

Sustainability and Digital Solutions: In an increasingly digital world, discover the potential of digital solutions for sustainability. Explore topics such as food security in desert climates and the concept of smart cities, where data-driven innovation and technology can help address complex urban and agricultural challenges.

Doha's Charms
Beyond the conference, we invite you to explore Doha's remarkable offerings, including stunning skylines, cultural landmarks and world-class museums. Experience the rich tapestry of Qatari culture while engaging in discussions that will shape the future of sustainable development.
As we gather at ICSEWEN23, let us collectively address the pressing challenges of our time and forge a sustainable path forward. We look forward to your participation and contributions at this pivotal event.

With warm regards,
Dr. M. Rami Alfarra, Dr. Khaled Mahmoud, and Mr. Mohammed Ayoub
Co-Chairs of ICSEWEN23

الرؤساء المشاركون للمؤتمر

محمد أيوب
مدير أول للبحوث
معهد قطر لبحوث البيئة والطاقة
جامعة حمد بن خليفة

د. خالد محمود
مدير برنامج البحوث
معهد قطر لبحوث البيئة والطاقة
جامعة حمد بن خليفة

د. رامي الفرا
عالم رئيسي
معهد قطر لبحوث البيئة والطاقة
جامعة حمد بن خليفة

CONFERENCE CO-CHAIRS

Dr. M. Rami Alfarra
Principal Scientist
Qatar Environment and Energy
Research Institute
Hamad Bin Khalifa University

Dr. Khaled Mahmoud
Research Programme Director
Qatar Environment and Energy
Research Institute
Hamad Bin Khalifa University

Mr. Mohammed A. Ayoub
Senior Research Director
Qatar Environment and Energy
Research Institute
Hamad Bin Khalifa University

انضموا إلينا في الدوحة في تجربة نصوغ فيها المستقبل

حول موقع المؤتمر
يتميز مركز قطر الوطني للمؤتمرات بعمارته اللافتة، ويشهد وجوده على التزام الدولة لاستضافة الفعاليات المرموقة واهتمامها بالابتكار والاستدامة. يتيح المركز مساحةً مميزةً للمؤتمرات، والمعارض، والتجمّعات المُعتبرة. وبفضل ما يقدمه من المساحات المتنوعة والمرافق الراقية، ولالتزامه بالاستدامة البيئية، أصبح مركز قطر الوطني للمؤتمرات وجهةً لاستضافة الفعاليات الدولية العريقة، حيث تجري النقاشات والتعاونيات وتبادل المعرفة في حيزٍ ملهم.

البرنامج الثقافي
انضموا لفعالية المؤتمر الثقافية وحفل الاستقبال المقرَّر عقده يوم الخميس 2 نوفمبر 2023 في مطعم ثلاثين (متحف قطر الوطني). برعاية إنبات القابضة، نستشرف أمسية مُثرية ثقافيًا واجتماعيًا. يرجى العلم أنه يلزمك التسجيل لتحجز مكانك في هذه الأمسية.

حفل العشاء
انضموا إلينا في حفل العشاء لهذا المؤتمر، حيث نحتفل ونتشارك الحديث، والذي سيكون يوم الأربعاء 1 نوفمبر 2023. تُعقد هذه الفعالية الحصرية في إكسبو 2023 الدوحة برعاية كهرماء. يرجى الانتباه أن التسجيل المُسبق مطلوب لهذا الحفل لأن المقاعد محدودة. نتطلع إلى حضوركم ومشاركتكم بأمسية عنوانها البهجة والتفاعل، فلا تفوتكم فرصة التواصل مع زملائكم من الزوار والحضور المميز.

المواصلات
لأجل ضمان راحة زوارنا عند التنقل، يسرّنا الإعلان عن تنظيمنا لحافلات كهربائية تعمل بالتزامن مع جدول المؤتمر. تم تصميم الحافلات الكهربائية ليتنقّل الزوار بين موقع المؤتمر ومواقع الفعاليات الأخرى بطريقة سلسلة وصديقة للبيئة.

Join us in Doha to Shape a Sustainable Future!

About the Conference Venue

The Qatar National Convention Center (QNCC) stands as a remarkable architectural venue. This facility is not only a testament to the nation's commitment to hosting world-class events but also a symbol of innovation and sustainability. QNCC provides an exceptional venue for conferences, exhibitions, and gatherings of global significance. Its versatile spaces, world-class amenities, and commitment to environmental sustainability make it a preferred choice for hosting prestigious international events, where participants can engage in discussions, collaboration, and knowledge exchange in a truly modern and inspiring setting.

Cultural Program

Join us at the ICSEWEN Cultural Event and Reception set to take place on Thursday, the 2nd of November at Thalatheen café (Qatar National Museum). This event is sponsored by Enbat Holdings, and we anticipate an evening filled with cultural enrichment and networking opportunities. To secure your spot at this remarkable event, registration is a prerequisite.

Gala Dinner

Join us for the ICSEWEN Gala Dinner, an evening of celebration and networking, taking place on Wednesday, the 1st of November. This exclusive event will be hosted at Expo 2023 Doha and sponsored by Kahramaa.

Please note that registration is required to attend this memorable Gala Dinner and that numbers are limited. We look forward to your presence and participation in what promises to be a delightful and engaging evening. Don't miss out on this opportunity to connect with fellow delegates and distinguished guests.

Transportation

To enhance the convenience and mobility of our delegates during ICSEWEN, we are pleased to announce that we have arranged electric buses that will operate in sync with the event schedule. These electric buses are designed to efficiently transport attendees between the conference venue and the cultural event and gala dinner locations, ensuring a seamless and eco-friendly transition.

SCIENTIFIC COMMITTEE

Theme 1: Energy Transition

Theme Co-Chairs

- Dr. Sertac Bayhan, HBKU-QEERI
- Dr. Haitham Abu-Rub, TAMUQ

Economics and Policy of Energy Transition

- Dr. Marcello Contestabile, HBKU-QEERI
- Dr. Muez Ali, Earthna, Qatar Foundation

Sustainable Energy Conversion Solutions

- Dr. Juan Lopez Garcia, HBKU-QEERI
- Dr. Rahul R. Bhosale, Qatar University

Energy Management and Integration

- Dr. Ameni Boumaiza, HBKU-QEERI
- Dr. Yusuf Bicer, HBKU-CSE

Energy Demand and Efficiency

- Dr. Dunia A. Bachour, HBKU-QEERI
- Eng. Rafah Alarrouqi, Sector Expert - Government Entity

Theme 2: Water Resources, Processes and Advances

Theme Co-Chairs

- Dr. Jenny Lawler, HBKU-QEERI
- Dr. Suhur Saeed, ExxonMobil Research Qatar

Water Resources and Large-Scale Water Management

- Dr. Jenny Lawler, HBKU-QEERI
- Dr. Waleed Hassan, UNFAO

Wastewater Treatment and Resource Recovery

- Dr. Oluwaseun Ogunbiyi, HBKU-QEERI
- Eng. Christian Pérez Hernández, Idrica

Desalination and Brine Management and Mining

- Dr. Dema Al-Masri, Earthna, Qatar Foundation
- Dr. Ahmed Abdallah, TAMUQ
- Dr. Mohammad Al Beldawi, MoECC

Water Sector Technology Advances - moving from research towards commercialization.

- Dr. Zhaoyang Liu, HBKU-QEERI
- Dr. Dong Suk Han, Qatar University

Theme 3: Environmental pollution and mitigation

Theme Co-Chairs

- Dr. Christos Fountoukis, HBKU-QEERI
- Dr. Tareq Al-Ansari, HBKU-CSE

Air Quality Challenges in Arid Regions

- Dr. M. Rami Alfarra, HBKU-QEERI
- Dr. Konstantinos Kakosimos, TAMUQ

Climate Change: Impacts and Adaptation in Arid Regions

- Dr. M. Rami Alfarra, HBKU-QEERI
- Dr. Christos Fountoukis, HBKU-QEERI

Environmental Monitoring and Waste Management

- Dr. Khaled Mahmoud, HBKU-QEERI
- Dr. Ahmed Abdel-Wahab, TAMUQ

Environmental Policy

- Dr. Sa'ad Shannak, HBKU-QEERI
- Dr. Esmat Zaidan, HBKU-CPP

Natural and anthropogenic hazards and risk

- Dr. Yehia Manawai, HBKU-QEERI
- Dr. Zlatan I. Tsvetanov, HBKU-QEERI

Theme 4: Innovative Solutions for the Oil and Gas Industry

Theme Co-Chairs

- Dr. Afrooz Barnoush, HBKU-QEERI
- Dr. Ahmed Reda, Curtin University

Corrosion Solutions

- Dr. Mariana Costa Folena, HBKU-QEERI
- Dr. Katherina Lepkova, Curtin University
- Eng. Yaser Elmorin, Qatar Energy

Hydrogen and CO2 Management

- Dr. Abdulkarem Amhamed, HBKU-QEERI
- Dr. Sabah Solim, Qatar Shell
- Dr. Dong Suk Han, Qatar University

Novel Materials & Sustainability

- Dr. Fadwa El-Mellouhi, HBKU-QEERI
- Dr. Bilal Mansour, TAMUQ
- Dr. Amin Esmaieli, UDST

Theme 5: Sustainability & Digital Solutions

Theme Co-Chairs

- Dr. M. Rami Alfarra, HBKU-QEERI
- Mr. Mohammed Ayoub, HBKU-QEERI

Food Security in Desert Climates

- Dr. Kashif Rasool, HBKU-QEERI
- Dr. Michel Velders, Ministry of Municipality

Digital Environment and Smart Solutions

- Dr. Antonio Sanfilippo, HBKU-QEERI

LOCAL ORGANIZING COMMITTEE

- Mr. Omar Seoud
- Ms. Abeer Al-Dosari
- Dr. Manal Alsalama
- Dr. Sara Ahmad
- Ms. Suhad Al Hour
- Ms. Hissa H. Al-Hajri
- Dr. Oluwaseun O. Ogunbiyi
- Dr. Shamjad Moosakutty
- Dr. Kenza Maher
- Dr. Mohammed Al-Azba
- Dr. Chong Chee Wen
- Mr. Ahmed Al Ajji
- Ms. Annie Mathew
- Ms. Camelia Adela Deac
- Dr. Muneera Al-Qahtani
- Dr. Rajeswari Jayarajan Roshini
- Dr. Odi Alrebei

CONFERENCE PARTNERS

Strategic Partner

KAHRAMAA
كهرماء
المؤسسة العامة القطرية للكهرباء والماء
Qatar General Electricity & Water Corporation

Knowledge Partner

THE ABDULLAH BIN HAMAD AL ATTIYAH FOUNDATION

Education Partner

مركز أجيال التربوي
Ajial Altarbwy Center
جيل واعد لوطن رائد

وزارة التربية والتعليم والتعليم العالي
Ministry of Education and Higher Education
State of Qatar • دولة قطر

Sustainability Partner

EXPO 2023 DOHA QATAR

Policy Partner

إرثنا
earthna
عضو في مؤسسة قطر
Member of Qatar Foundation

Wellness Partner

enbat

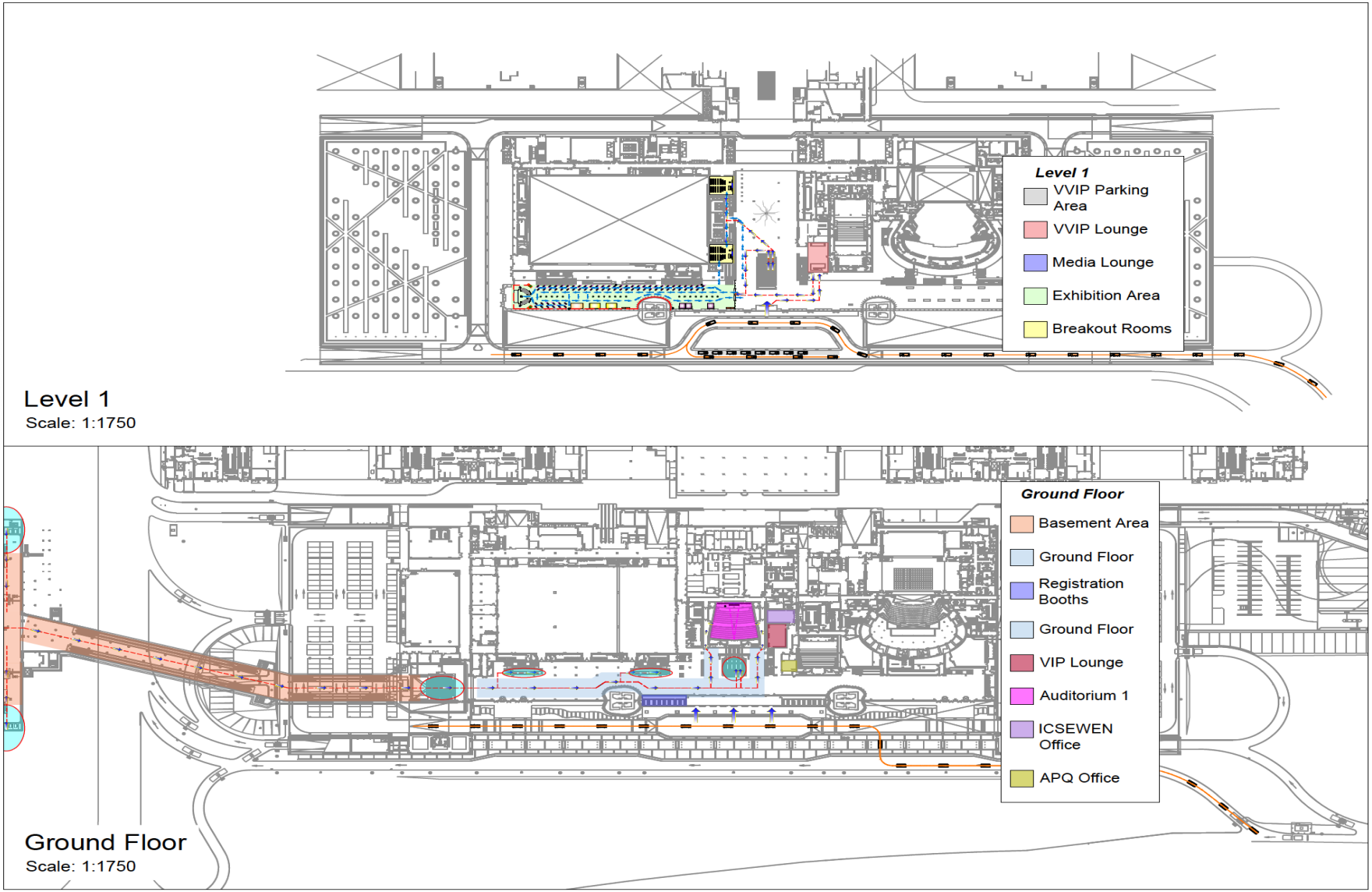
Community Partner

النادي العلمي القطري
Qatar Scientific Club
الدوحة ٢٩٨٧

Cultural Partner

متحف قطر الوطني
NATIONAL MUSEUM OF QATAR

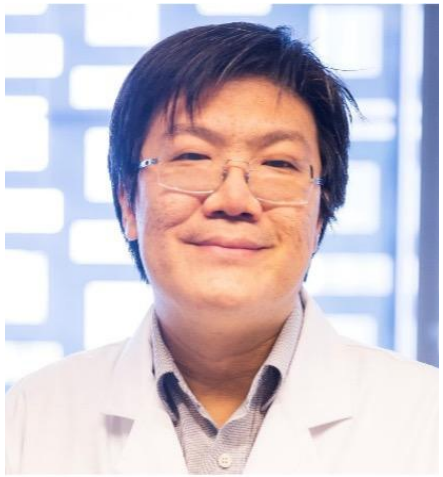
FLOOR PLAN


Level 1
VVIP Parking Area
VVIP Lounge
Media Lounge
Exhibition Area
Breakout Rooms
Level 1
Scale: 1:1750
Ground Floor
Basement Area
Ground Floor
Registration Booths
Ground Floor
VIP Lounge
Auditorium 1
ICSEWEN Office
APQ Office
Ground Floor
Scale: 1:1750

PLENARY SPEAKERS

Environment Plenary: Climate Change Impacts in the MENA and GCC Regions

Professor Jos Lelieveld
Managing Director, Max Planck Institute for Chemistry, Germany



Water Plenary: Water Desalination and Management

Professor Ho Kyong Shon
Head of Discipline, Environmental and Water Engineering
University of Technology Sydney, Australia

Energy Plenary: Energy Transition Towards Net Zero - Progress, Challenges and Outlook

Professor Alberto Troccoli
Co-founder and Managing Director
World Energy & Meteorology Council, United Kingdom

KEYNOTE SPEAKERS

Theme 1: Energy Transition

Professor Damilola S. Olawuyi, HBKU College of Law, Qatar
Economics and policy of energy transitions

Dr. Yusuf Bicer, HBKU College of Science and Engineering, Qatar
Sustainable Energy Conversion

Professor Dragan Boscovic, Arizona State University, USA
Energy Management and Integration

Professor Atif Iqbal, Qatar University, Qatar
Energy Demand and Efficiency

Theme 2: Water Resources, Processes and Advances

Dr. Amgad Elmahdi, Green Climate Fund, South Korea
Water Resources and Large-Scale Water Management

Dr. Peter Desmond, HBKU Colleague of Science and Engineering, Qatar
Wastewater Treatment and Resource Recovery

Professor Syed Javaid Zaidi, Qatar University, Qatar
Desalination and Brine Management and Mining

Dr. Sudhir Sharma, Green Boom, Qatar
Water Sector Technology Advances - moving from research towards commercialization

Theme 3: Environmental Pollution and Mitigation

Dr. Diana Francis, Khalifa University, UAE
Air Quality Challenges in Arid Regions

Dr. Krishna Kumar Kanikicharla, Qatar Metrology Department, Qatar
Climate Change: Impacts and Adaptation in Arid Regions

Professor Dionysios (Dion) D. Dionysiou, University of Cincinnati, USA
Environmental Monitoring and Waste Management

Professor Fares AlMomani, Qatar University, Qatar
Environmental Monitoring and Waste Management

Dr. Mohammad Al-Saidi, Qatar University, Qatar
Environmental Policy

Theme 4: Innovative Solutions for the Oil & Gas Industry

Professor Richard Barker, University of Leeds, UK
Corrosion Solutions

Professor Nimir Elbashir, Texas A&M University at Qatar
Hydrogen and CO2 Management

Theme 5: Sustainability and Digital Solutions

Dr. Delphine Acloque, Ministry of Municipality, Qatar
Food Security in Desert Climates

Mr. Santiago Bañales, Iberdrola Innovation Middle East, Qatar
Digital Environment & Smart Solutions

PROGRAM AT A GLANCE

Timing	Day 1 Monday 30 Oct 2023 (Auditorium 1)
09:00 - 10:30	**Breakfast & Registration**
10:30 - 11:30	**Opening Ceremony & Keynotes**
11:30 - 12:00	**Coffee Break**
12:00 - 13:00	**Panel Discussion 1:** Food Security & Sustainable Agriculture in Desert Climates
13:00 - 14:30	**Lunch and Networking Break**
14:30 - 15:30	**Panel Discussion 2:** Evidence-Based Policymaking: The Role of Region-Specific Research in Policy Development
15:30 - 17:30	**Reception Hosted by Enbat Holdings**

Timing	Day 2 Tuesday 31 Oct 2023		
07:30 - 08:30	**Breakfast**		
08:30 - 09:30	**Plenary 1:** Water Desalination and Management (Prof Ho Kyon Shon, University of Technology Sydney, Australia) (Auditorium 1)		
09:30 - 10:30	**Panel Discussion 3:** Circular Economy & Sustainable Water Management in Arid Regions (Auditorium 1)		
10:30 - 11:00	**Coffee Break**		
11:00 - 12:30	Desalination and BMM (Auditorium 1)	Environmental Policy (Rooom 101)	Energy Management and Integration (Room 102)
12:30 - 14:00	**Lunch & Networking Break**		
14:00 - 15:30	Environmental monitoring and waste management (Auditorium 1)	Hydrogen and CO2 management (Room 101)	Sustainability: Food Security in Arid Regions (Room 102)
15:30 - 16:00	**Coffee Break**		
16:00 - 17:30	Water Resources and Large-Scale Water Management (Auditorium 1)	Corrosion solutions (Room 101)	Environmental monitoring and waste management (Room 102)
17:30 - 18:30	Poster Session 1		
18:30-18:45	Free Evening with Optional Bus Transfers to Souq Waqif		

Timing	Day 3 Wednesday 01 Nov 2023		
07:30 - 08:30	Breakfast		
08:30 - 09:30	**Plenary 2:** Energy Transition Towards Net Zero: Progress, Challenges and Outlook (Prof. Alberto Troccoli, World Energy & Meteorology Council, UK) (Auditorium 1)		
09:30 - 10:30	**Panel Discussion 4:** Energy Transition: Towards Net Zero (Auditorium 1)		
10:30 - 11:00	Coffee Break		
11:00 - 12:30	Economics and Policy of Energy Transition (Auditorium 1)	Wastewater Treatment and Resource Recovery (Room 101)	Digital Environment and Smart Solutions (Room 102)
12:30 - 14:00	Lunch & Networking Break		
14:00 - 15:30	Sustainable Energy Conversion Solutions (Auditorium 1)	Wastewater Treatment and Resource Recovery (Room 101)	Air Quality Challenges in Arid Regions (Room 102)
15:30 - 16:00	Coffee Break		
16:00 - 17:30	Sustainable Energy Conversion Solutions (Auditorium 1)	Water Sector Technology Advances - moving from research towards commercialization (Room 101)	Environmental monitoring and waste management (Room 102)
17:30 - 18:30	Poster Session 2		
19:30 - 21:30	Conference Gala Dinner hosted at EXPO 2023 Doha & Sponsored by KAHRAMAA (Registration Required)		

Timing	Day 4 Thursday 02 Nov 2023		
07:30 - 08:30	Breakfast		
08:30 - 09:30	**Plenary 3:** Climate Change Impacts in the MENA and the GCC regions (Prof. Jos Lelieveld, Max Planck Institute for Chemistry, Germany) (Auditorium 1)		
09:30 - 10:30	**Panel Discussion 5:** Climate change and Environmental Pollution: Adaptation, Mitigation and Health Impacts (Auditorium 1)		
10:30 - 11:00	Coffee Break		
11:00 - 12:30	Climate Change: Impacts and Adaptation in Arid Regions (Auditorium 1)	Energy Demand and Efficiency (Room 101)	Novel materials & Sustainability (Room 102)
12:30 - 14:00	Lunch & Networking Break		
14:00 - 15:00	**Panel Discussion 6:** The Energy-Water-Environment Nexus in National Development Strategies -including an Introduction of the Arid City Network initiative (Auditorium 1)		
15:00 - 16:00	**Awards & Closing Ceromony (Auditorium 1)**		
17:00 - 20:00	Cultural Event and Reception at the Qatar National Meusum - Sponosored by Enbat Holdings (Registration Required)		

CONFERENCE PROGRAM

Day 1
Monday 30 Oct 2023 (Auditorium 1)

Time	Content
09:00 – 10:30	Breakfast & Registration
10:30 – 11:30	**Opening Ceremony and Keynotes**
11:30 – 12:00	Coffee Break
12:00 – 13:00	**Panel Discussion 1:** Food Security & Sustainable Agriculture in Desert Climates
13:00 - 14:30	Lunch and Networking Break
14:30 - 15:30	**Panel Discussion 2:** Evidence-Based Policymaking: The Role of Region-Specific Research in Policy Development
15:30 - 17:30	Reception Hosted by Enbat Holdings

Day 2
Tuesday 31 Oct 2023

Time	Content
07:30 – 08:30	Breakfast
08:30 – 09:30	**Plenary 1:** Water Desalination and Management (Auditorium 1) **Professor Ho Kyon Shon** Head of Discipline, Environmental and Water Engineering University of Technology Sydney, Australia
09:30 - 10:30	**Panel Discussion 3:** Circular Economy & Sustainable Water Management in Arid Regions (Auditorium 1)
10:30 - 11:00	Coffee Break
11:00 - 12:30	Parallel Technical Sessions
Desalination and Brine Management & Mining (Auditorium 1) Chairs: Dr. Dema Al-Masri, (Earthna, Qatar Foundation) Dr. Ahmed Abdallah, (TAMUQ), and Dr. Mohammad Al Beldawi, (MoECC)	
11:00 – 11:30	**Keynote: Professor Syed Javaid Zaidi, Qatar University, Qatar** *Progress In Desalination Research in Qatar*
11:30 – 11:45	An integrated direct-contact membrane distillation and electrochemical switched ion exchange system for efficient lithium recovery from simulated brine. *Mona Gulied, Sifani Zavahir, Tasneem Elmakki, Guillermo Hijós Gago and Dong Suk Han (Qatar University, Qatar)*
11:45 – 12:00	Develop a novel material for lithium ions recovery from seawater reverse osmosis brine (SWRO): optimizations and mechanism insights. *Rana Al Absi, Mohammad H. Abu-Dieyeh and Mohammad A. Al-Ghouti (Qatar University, Qatar)*
12:00 – 12:15	Nanofiber membrane development for desalination and water treatment. *Haleema Saleem, Asif Saud and Syed Javaid Zaidi (Qatar University, Qatar)*
12:15 – 12:30	CFD Simulation of Advanced Vapor Compressor for Seawater Desalination Plants. *Jasir Jawad and Abdel Nasser Mabrouk (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar)*

Environmental Policy (Room 101) Chairs: Dr. Sa'ad Shannak, (HBKU-QEERI) and Dr. Esmat Zaidan, (HBKU-CPP)	
11:00 – 11:30	**Keynote: Dr. Mohammad Al-Saidi, Qatar University, Qatar** *Policy Practices for Integration within the Water-Energy-Food Nexus in Arid Regions.*
11:30 – 11:50	The Making of Environmental Policies: Frustrations and Opportunities in Meeting Targets and Optimal Policy Outcomes. *Aziza Zemrani and George Atisa (University of Albany, USA)*
11:50 – 12:10	Mapping Sustainable Development in Qatar's Environmental Policy Discourse. *S. Duygu Sever Mehmetoglu (Hamad Bin Khalifa University, Qatar)*
12:10 – 12:30	FIFA World Cup 2022 as a catalyst for circularity in Qatar. *Lakshmi Suryan, Orjan Lundberg, Talar Sahsuvaroglu and Bodour Al Meer (Supreme Committee for Delivery and Legacy, Qatar)*
Energy Management and Integration (Room 102) Chairs: Dr. Ameni Boumaiza (HBKU-QEERI) and Dr. Yusuf Bicer (HBKU-CSE)	
11:00 – 11:30	**Keynote: Professor Dragan Boscovic, Arizona State University, USA** *Energy App for Increased Efficiency and Sustainability Through Orchestrated Consumer Participation and Integration of Heterogeneous Digital Assets.*
11:30 – 11:45	Overcoming Obstacles: Integrating Energy Storage Systems and Electric Vehicles in Hot Desert Regions. *Kenza Maher, Yahya Zakaria and Noora S. Al-Jaidah (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar)*
11:45 – 12:00	Novel Electrochemical System for Selective Lithium Recovery from Liquid Resources and Circular Economy Integration Using Spent Li-Ion Batteries. *Tasneem Elmakki, Sifani Zavahir, M.S. Sajna, Abdul Shakoor, Guillermo Hijós Gago and Dong Suk Han (Qatar University, Qatar)*
12:00 – 12:15	An Evaluation on the Role of Ammonia in the Energy-Water-Environment Nexus in Hot Arid Climate: A Review with Case Studies. *Dindha Andriani, Dr. Yusuf Bicer and Dr. Tareq Alansari (Hamad Bin Khalifa University, Qatar)*
12:15 – 12:30	Electrification of Temporary Power at the FIFA World Cup. *Lakshmi Suryan, Orjan Lundberg, Maksim Karmokov and Bodour Al Meer (Supreme Committee for Delivery and Legacy, Qatar)*
12:30 - 14:00	Lunch & Networking Break

14:00 - 15:30	Parallel Technical Sessions
Environmental Monitoring and Waste Management: Monitoring (Auditorium 1) Chair: Dr. Khaled Mahmoud (HBKU-QEERI) and Dr. Ahmed Abdel-Wahab (TAMUQ)	
14:00 – 14:30	**Keynote: Professor Dion D. Dionysiou, University of Cincinnati, USA** *Advances and challenges for the removal of contaminants of emerging concern in wastewater treatment.*
14:30 – 14:50	Atmospheric Dust Deposition Impact on Primary Productivity in the Arabian Gulf and Sea of Oman. *Kaltham Ismail and Maryam Alshehhi (Khalifa University, UAE)*
14:50 – 15:10	Approaching Environmental Water Problems using Nonlinear Optical Spectroscopy. *Ahmed Abdelmonem, Johannes Lützenkirchen and Björn Braunschweig. (Institute of Meteorology and Climate Research, Karlsruhe Institute of Technology (KIT), Germany)*
15.10 - 15.30	Monitoring of Illicit Drugs in Qatar during FIFA World Cup Qatar 2022 using a Wastewater-Based Epidemiology (WBE) Approach. *Dr. Mohammad Wasim Aktar, Arun Kizhakkethil Krishnankutty Achari, Tricia Anne Alcantara Gomez, Dr. Jayaprakash Saththasivam, Dr. Jenny Lawler and Dr. Khaled Ahmed Mahmoud. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar)*
Hydrogen and CO2 management (Room 101) Chairs: Dr. Abdulkarem Amhamed (HBKU-QEERI), Dr. Sabah Solim (Qatar Shell) and Dr. Dong Suk Han (Qatar University)	
14:00 – 14:30	**Keynote: Professor Nimir Elbashir, Texas A&M University, Qatar** *Decarbonizing Natural Gas Processing for Negative-Carbon Hydrogen Production.*
14:30 – 14:50	Effect of Hydrogen Charging on Additively Manufactured Stainless Steel. *Prince Baranwal, Sumia Manzoor, Jan Džugan, Hanan Farhat, and Afrooz Barnoush. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
14:50 – 15:10	Electrochemical conversion of CO2 into formic acid by using metal-based catalyst: A case study. *Muhammad Arsalan, Dina Ewis, Muneer M. Ba-Abbada, Mazen Khaled and Muftah H El-Naas. (Qatar University, Qatar).*
15:10 – 15:30	Polymeric Organic Conjugated Semiconductors for Photocatalytic H2 Generation. *Mohammed Al Hashimi. (Texas A&M University, Qatar).*

Food Security in Arid Regions (Room 102) Chairs: Dr. Kashif Rasool (HBKU-QEERI) and Dr. Michel Velders (Ministry of Municipality)	
14:00 – 14:30	**Keynote: Dr. Delphine Acloque, Ministry of Municipality, Qatar** *Ensuring food security in arid countries: challenges and solutions to cope with resource scarcity Some insights from Qatar.*
14:30 – 15:00	Tribiotics and its application towards food security and a sustainable future. *Dr. Noormazlinah Binti Ahmad (University of Malaysia Pahang)*
15:00 – 15:15	Feasibility of Controlled Environment Agriculture for Qatar's National Goals of Self-Reliance, Sustainability, and Food Security. *Farhat Abbas, Awni Al-Otoom and Salem Al-Naemi. (University of Doha for Science and Technology, Qatar).*
15:15 – 15:30	Upcycling agriculture food waste mixture into microbial protein using yeast. *Kashif Rasool, Hafiz Shazad, Khadeeja Abdul Jabbar, Tricia Gomez and Khaled Mahmoud. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
15:30 - 16:00	Coffee Break
16:00 – 17:30	Parallel Technical Sessions
Water Resources and Large-Scale Water Management (Auditorium 1) Chairs: Dr. Jenny Lawler (HBKU-QEERI) and Dr. Waleed Hassan (UNFAO)	
16:00 – 16:30	**Keynote: Dr. Amgad Elmahdi, Green Climate Fund, South Korea** *The Role of Climate Finance for Water Asset Transition: GCF's Insight*
16:30 – 16:45	Groundwater dynamics in fossil fractured carbonate aquifers in Eastern Arabian Peninsula. *Essam Heggy et al. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar)*
16:45 – 17:00	Identifying suitable zones for integrated aquifer recharge and flood control using GIS-based multi-criteria decision-making: A Qatar case study. *Sarra Aloui, Adel Zghibi, Adel Elomri and Annamaria Mazzoni. (College of Science and Engineering, Hamad Bin Khalifa University, Qatar Foundation, Qatar).*
17:00 – 17:15	Comparative Study of Green Building Rating Tools: BREEAM, LEED and QSAS (Qatar Sustainability Assessment System) The precious water as a case study. *Ayman Alhanouti and Peter Farrell. (University of Bolton, UK).*

17:15 – 17:30	Mineral of carbonation of desalination reject brine: A kinetics study. *Nafis Mahmud, Daniela V. Fraga Alvarez, Ahmed Khodary, Daniel V. Esposito and Muftah H. El-Naas. (Qatar University, Qatar).*
Corrosion Solutions (Room 101) Chairs: Dr. Mariana Costa Folena (HBKU-QEERI), Dr. Katherina Lepkova (Curtin University) and Eng. Yaser Elmorin, (Qatar Energy)	
16:00 – 16:30	**Keynote: Professor Richard Barker, University of Leeds, UK** *Demystifying corrosion inhibition in energy systems for a sustainable future*
16:30 – 16:50	Corrosion Response of Additively Manufactured 316L Stainless Steel. *Adnan Khan and Bilal Mansoor. (Texas A&M University at Qatar)*
16:50 – 17:10	Repassivation behavior of 316L in aqueous ammonium chloride environments with low dissolved oxygen. *Jonas Da Silva De Sa, Alexander Saul, Monir Aljaradli and Hanan Alshareef Farha.* (*Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar*).
17:10 – 17:30	Role of acetic acid on the mechanism of carbon steel dissolution under CO2 top of line corrosion. *Mariana Folena, José Antônio Ponciano, Anne Neville, Richard Barker (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar)*
Environmental Monitoring and Waste Management: Waste Management (Room 102) Chairs: Dr. Khaled Mahmoud (HBKU-QEERI) and Dr. Ahmed Abdel-Wahab (TAMUQ)	
16:00 – 16:30	**Keynote: Professor Fares AlMomani, Qatar University, Qatar** *Promoting Sustainable Environmental Solutions through Biowaste Valorization*
16:30 – 16:50	Monitoring the spread of COVID-19 during FIFA 2022 in Qatar using Wastewater-based Epidemiology: Implications for Public Health Surveillance. *Shimaa El-Malah, Jayaprakash Saththasivam, Khadeeja A Jabbar, Tricia A Gomez, Arun K K, Jenny Lawler and Khaled A Mahmoud. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
16:50 – 17:10	Healthcare and Environmental Sustainability. Primum non Nocere! *Sohel Ahmed, Yasser Hammad and Mohamad Hilani. (Hamad Medical Corporation, Qatar).*
17:10 – 17:30	Toxicity assessment of produced water from gas fields using Qatari native species and zebrafish embryo assay. *Mohammad Yousaf Ashfaq, Linso Varghese, Suhur Saeed, Enas Al Absi, Fatiha Benslimane, Huseyin Yalcin, Viktor Kochkodan and Jenny Lawler. (ExxonMobil Research Qatar (EMRQ), Doha-Qatar).*
17:30 – 18:30	**Poster Session 1**

18:30 – 18:45	Free Evening with Optional Bus Transfers to Souq Waqif

Day 3

Wednesday 01 Nov 2023

Time	Content
07:30 – 08:30	Breakfast
08:30 – 09:30	**Plenary 2:** Energy Transition Towards Net Zero: Progress, Challenges and Outlook (Auditorium 1) **Professor Alberto Troccoli** Managing Director at World Energy & Meteorology Council, UK
09:30 - 10:30	**Panel Discussion 4: Energy Transition: Towards Net Zero** (Auditorium 1)
10:30 - 11:00	Coffee Break
11:00 - 12:30	Parallel Technical Sessions
Economics and Policy of Energy Transition (Auditorium 1) Chairs: Dr. Marcello Contestabile (HBKU-QEERI) and Dr. Sertac Bayhan (HBKU-QEERI)	
11:00 – 11:30	**Keynote: Professor Damilola Olawuyi, College of Law, Hamad Bin Khalifa University, Qatar** *Law and Economic Aspects of the Energy Transition*
11:30 – 11:50	Analysis of Opportunity Costs of Energy Transitions from Fossil Fuels to Alternative Energy Sources. *George Atisa, Cecilio Ortiz-Garcia, Andreea Stoian Karadeli, and Sharon McIntyre. (*University of Texas Rio Grande Valley*, USA).*
11:50 – 12:10	Perspectives on Energy Transition in Oil and Gas Exporting Countries: The Case of Qatar. *S. Duygu Sever Mehmetoglu. (Hamad Bin Khalifa University, Qatar).*
12:10 – 12:30	Analyzing Qatar's Hydrogen Industry Perspectives: Potential, Investment Costs, and Alternatives. *Carlos Mendez and Marcello Contestabile. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar)*

Wastewater Treatment and Resource Recovery (1) (Room 101) Chairs: Dr. Oluwaseun Ogunbiyi (HBKU-QEERI) and Eng. Christian Pérez Hernández (Idrica)	
11:00 – 11:30	**Keynote: Dr. Peter Desmond, College of Science and Engineering, Hamad Bin Khalifa University, Qatar** *Closing the Loop: Process Intensification for Wastewater Recycling and Reuse*
11:30 – 11:50	A Novel Magnatic Mxene/ Chitosan-lignosulfonate nanocomposite for Cr (VI) Removal from Wastewater. *Haya Alyasi, Khaled Mahmoud and Sara Mohiddin Wahib. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
11:50 – 12:10	Metal release from industrial biosludge in agriculture applications on non-arable land. *Jill A.R. Soedarso, Gabriel Sigmund, Ali M. Al-Sharshani, Hans Meeussen, Nora B. Sutton, Darrell Tang, Georg Stockinger and Huub H. M. Rijnaarts. (Wageningen University & Research, Netherlands)*
12:10 – 12:30	Biodegradation of oil and gas wastewater organic contaminants using highly adapted bacterial species isolated from Qatari environment. *Sara Al-Marri, Mohammad Yousaf Ashfaq, Suhur Saeed and Linso Varghese. (ExxonMobil Research Qatar, Qatar)*
Digital Environment and Smart Solutions (Room 102) Chairs: Dr. Antonio Sanfilippo (HBKU-QEERI)	
11:00 – 11:30	**Keynote: Mr. Santiago Bañales, Iberdrola Innovation Middle East, Qatar** *Digitalization as a Key Enabler of the Energy Transition*
11:30 – 11:45	Energy Efficiency in Indoor Farming in Hot Desert Climates. *Abdellah Kafi. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
11:45 – 12:00	Advances and Solutions for the Management and Control of Indoor Environments. *Dr. Abdlmonem H. Beitelmal. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
12:00 – 12:15	Deep Learning-based digital twin implementation for low-cost microcontrollers in power electronics applications. *Naheel Kamal (Texas A&M University at Qatar)*
12:15 – 12:30	Qatar Solar Atlas Web Application. *Nassma Mohands, (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*

12:30 - 14:00	Lunch & Networking Break
14:00 - 15:30	Parallel Technical Sessions
Sustainable Energy Conversion Solutions (1) (Auditorium 1) Chairs: Dr. Juan Lopez Garcia (HBKU-QEERI) and Dr. Rahul R. Bhosale (Qatar University)	
14:00 – 14:30	**Keynote: Dr. Yusuf Bicer, Hamad Bin Khalifa University, Qatar** *Clean Integrated Energy Systems with Hydrogen Carriers.*
14:30 – 14:50	A new PV array design to facilitate inverter-friendly maximum power point tracking in grid-connected PV systems. *Dhanup Somasekharan Pillai, J Prasanth Ram, Juan Lopez Garcia and Young-Jin Kim. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
14:50 – 15:10	Novel Charge and Spin Tailored Materials for Electrochemical Renewable Energy Applications. *Sreeprasad T Sreenivasan. (The University of Texas at El Paso, USA)*
15:10 – 15:30	Efficient Hydrogen Production at Neutral pH Using Surface Heterointerfaced Ni-based Oxide/Nitride Catalysts. *Ahmed Badreldin, Anuj Prakash, Sabah Solim and Ahmed Abdel-Wahab. (Texas A&M University at Qatar)*
Air Quality Challenges in Arid Regions (Room 102) Chairs: Dr. M. Rami Alfarra (HBKU-QEERI) and Dr. Konstantinos Kakosimos (TAMUQ)	
14:00 – 14:30	**Keynote: Dr. Diana Francis, Khalifa University, UAE** *Air Quality Challenges in Arid Regions under a Changing Climate.*
14:30 – 14:50	Identification of air pollution sources in an urbanized arid environment: First real-time chemical and elemental observations in Doha, Qatar. *Shamjad Moosakutty, Mohammed Ayoub and M. Rami Alfarra. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
14:50 – 15:10	Fine particles exposure and cardiopulmonary morbidity in Jeddah: A time-series analysis. *Haider Khwaja, Shedrack Nayebarea, Omar Aburizaiza, Abdullah Aburiziza, Arden Pope, Azhar Siddique and David Carpenter. (University at Albany, USA)* Assessment of Concentration, Antibiotic Resistance, and Community Composition of Ambient Bioaerosols by Size Fraction during Autumn and Winter in Qatar. *Bilal Sajjad, Kashif Rasool, Azhar Siddique, Khadeeja Abdul Jabbar, Shimaa El-Malaha, Muhammad Umar Sohail and Fares Almomani. (Hamad Bin Khalifa University, Qatar)*

15:10 – 15:30	
Wastewater Treatment and Resource Recovery (2) (Room 101) Chairs: Dr. Oluwaseun Ogunbiyi (HBKU-QEERI) and Eng. Christian Pérez Hernández (Idrica)	
14:00 – 14:20	Fixed-Bed Column Evaluation of Polymeric Adsorbents for Emulsified Oil Removal from Industrial Wastewater. *Mashael Almaas, Joel Minier-Matar, Igor Krupa, Mariam Al Ali Al-Maadeed and Samer Adham. (ConocoPhillips, Qatar).*
14:20 – 14:40	A new insight into the treatment of volatile petroleum hydrocarbons (VPHs) from wastewater using zeolite imidazole framework. *Haneen Eldos, Mariam Khan, Nabil Zouari, Suhur Saeed and Mohammad Al-Ghouti. (Qatar University, Qatar)*
14:40 – 15:00	Fabrication and performance evaluation of a halloysite nano-clay based ceramic membrane as a relatively low-cost ceramic membrane. *Dema Almasri, Jenny Lawler and Viktor Kochkodan. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
15:00 – 15:20	Produced water from gas field as a non-conventional water resource: screening of water treatment methods. *Saeed Al Marri, Simjo Simpson, Rashad Al-Gaashani, Dema Al Masri, Jayaprakash Saththasivam, Oluwaseun O. Ogunbiyi, Suhur Saeed, Jenny Lawler and Viktor Kochkodan. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
15:20 – 15:30	Discussion and wrap-up
15:30 - 16:00	Coffee Break
16:00 – 17:30	Parallel Technical Sessions
Sustainable Energy Conversion Solutions (2) (Auditorium 1) Chairs: Dr. Juan Lopez Garcia (HBKU-QEERI) and Dr. Rahul R. Bhosale (Qatar University)	
16:00 – 16:20	Thermoeconomic assessment of sustainable integrated greenhouse systems in hot arid regions. *Omer Abedrabboh, Muammer Koç and Yusuf Biçer. (Hamad bin Khalifa University, Qatar)*
16:20 – 16:40	Experimental and numerical evaluation on PCM composite based on paraffin/recycled Tetra Pak/expanded graphite for photothermal conversion and thermal energy storage. *Safna Nishad and Igor Krupa. (Qatar University, Qatar).*

16:40 – 17:00	Insight into the Charge Transfer Character of a Novel Organic Dye for Solar Cell Applications: Synthesis, Photophysics, and Electrochemical Study. *Balqees Al-Saadi. (Sultan Qaboos University, Oman)*
17:00 – 17:20	Wastepaper as potential pyrolysis feedstock for biochar production- A Qatar case study. *Prakash Parthasarathy, Mohammad Alherbawi, Muhammad Shahbaz, Tareq Al-Ansari and Gordon McKay. (Hamad Bin Khalifa University, Qatar)*
17:20 – 17:30	Discussion and wrap-up
Environmental Monitoring and Waste Management: Environment and Health (Room 102) Chairs: Dr. Khaled Mahmoud (HBKU-QEERI) and Dr. Ahmed Abdel-Wahab (TAMUQ)	
16:00 – 16:20	Corrosion behavior of AA60661 and AA2014 aluminum alloys in saline environment. *Abdulwahab Ibrahim. (UDST (CNQ), Qatar)*
16:20 – 16:40	Development and evaluation of efficient Ni-based catalysts for the dry reformation of CH4. *Sardar Ali, Muftah El-Naas and Kartick Mondal. (Qatar University, Qatar)*
16:40 – 17:00	Engineering options for management of waste from Enugu timber market: focus on recycling, resource recovery and energy generation potentials. *Obianuju Anwara, Uzor Onyia and Nzoputa Madueme. (University of Nigeria Nsukka, Nigeria).*
17:00 – 17:20	Screening of Acidic Deep Eutectic Solvents for Valuable Metals Extraction from Wasted Lithium-ion Batteries. *Hussein Amusa and Enas Nashef. (Khalifa University, UAE)*
17:20 – 17:30	Discussion and wrap-up
Water Sector Technology Advances: Moving from Research Towards Commercialization (Room 101) Chairs: Dr. Zhaoyang Liu (HBKU-QEERI) and Dr. Dong Suk Han (Qatar University)	
16:00 – 16:30	Keynote: **Dr. Sudhir Sharma, Green Boom, Qatar** *Commercialization of Nascent Technologies*
16:30 – 16:50	Advanced Membrane Technologies to Enable Circular Water Economy in the Oil & Gas Industry. *Gennaro Dicataldo, Samer Adham and Joel Minier Matar. (ConocoPhillips, Qatar)*
16:50 – 17:10	An Innovative Approach to Desalination and Cooling Using Forward Osmosis with Thermal Recovery and Vapor Absorption Cycle. *Hassan Abdulrahim and Mansour Ahmed. (Kuwait Institute for Scientific Research, Kuwait)*

17:10 – 17:30	Biological treatment of Gas-to-liquid (GTL) process water using Nano-biocatalyst. *Riham Surkatti, Muftah El-Naas and Mark C.M. van Loosdrecht. (HBKU, Qatar)*
17:30 – 18:30	**Poster Session 2**
19:30 – 21:30	Conference Gala Dinner (Hosted at EXPO2023 & Sponsored by KAHRAMAA) – *Registration is required.*

Day 4

Thursday 02 Nov 2023

Time	Content
07:30 – 08:30	Breakfast
08:30 – 09:30	**Plenary 3:** Climate Change Impacts in the MENA and the GCC regions (Auditorium 1) **Professor Jos Lelieveld** Managing Director, Max Planck Institute for Chemistry, Germany
09:30 - 10:30	**Panel Discussion 5: Climate Change and Environmental Pollution: Adaptation, Mitigation and Health Impacts in Arid Regions** (Auditorium 1)
10:30 - 11:00	Coffee Break
11:00 - 12:30	Parallel Technical Sessions
Climate Change: Impacts and Adaptation in Arid Regions (Auditorium 1) Chairs: Dr. M. Rami Alfarra (HBKU-QEERI) and Dr. Christos Fountoukis (HBKU-QEERI)	
11:00 – 11:30	**Keynote: Dr. Krishna Kumar Kanikicharla, Qatar Metrology Department, Qatar** *Implications of Climate Change for the Middle East and GCC Regions.*
11:30 – 11:50	Providing Energy and Environmental Assessment Services to Businesses in the Desert Southwest of the USA to Combat Climate Change. *Jalal Rastegary, Patricia Sullivan and Claire Debroux. (New Mexico State University, USA).*

11:50 – 12:10	Climate Extremes and Drivers of Impacts Across the Arabian Peninsula during the 1980 – 2022 Period. *Hatim Geli, Abdulrahman Alazba, Amr Mossad, Ahmed El-Shafei, Farid Radwan, Nasser Alradyan, Marcelo Biudes, Nadja Machado and Luiz dos Santos. (New Mexico State University, USA)*
12:10 – 12:30	Climate Change Adaptation in the Build Environment of Arid Regions. *Alex Amato. (Earthna, Qatar)*
Energy Demand and Efficiency (Room 101) Chairs: Dr. Dunia A. Bachour (HBKU-QEERI) and Eng. Rafah Alarrouqi (Sector Expert - Government Entity)	
11:00 – 11:30	**Keynote: Professor Atif Iqbal, Qatar University, Qatar** *Energy transition for net-zero: The interplay of Demand Response and Energy Efficiency.*
11:30 – 11:45	Effect of seasonal variations on the electricity generation under harsh environments of Algerian desert. *Mohammed Younes, Nabil Kahoul, Djamel Labed, Ammar Neçaibia, Hocine Cheghib, Belhadj Chekal Affari and Zoubida Kherici. (Laboratoire de Génie Électrique Constantine, University of Constantine 1, Algeria)*
11:45 – 12:00	Long-term changes in wind power densities over Yemen: a sustainable energy study. *Hussein Gadain and Brigadier Libanda. (UNFAO, Yemen)*
12:00 – 12:15	Solar resource metrics for PV suitability in Qatar. *Daniel Perez-Astudillo, Dunia Bachour and Hissa Al-Hajri. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
12:15 – 12:30	Peer-to-Peer Energy Trading. *Sandra Mansour. (Texas A&M University at Qatar)*
Novel Materials & Sustainability (Room 102) Chairs: Dr. Fadwa El-Mellouhi (HBKU-QEERI), Dr. Bilal Mansour (TAMUQ) and Dr. Amin Esmaieli (UDST)	
11:00 – 11:15	Empowering Sustainable Energy-Water-Environment Nexus: Green Promoters for Rapid Methane Hydrate Formation. *Ahmed Omran, Nikolay Nesterenko and Valentin Valtchev. (CNRS, University of Caen Normandy, France)*
11:15 – 11:30	Atomistic understanding of sulfur effect on Carbonyls corrosion formation on iron surfaces. *El Tayeb Bentria, Taha Kubbar, Prathamesh Shenai, Stefano Sanvito, Laurent Karim Beland, Nicholas Laycock and Fedwa El-Mellouhi. (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
11:30 – 11:45	Grading 316L Stainless Steel to NiCoCr MEA: a computational study. *Thaer Syam, Richard Malak and Bilal Mansoor. (Texas A&M, USA)*
11:45 – 12:00	Towards Zero Oilfield Chemical Discharge - Synthesis and Application of Polyaspartate-coated Magnetic Nanoparticles as Green Recyclable Scale Inhibitor. *Mohamed Mady, Abdelrahman Abdelaal and Malcolm Kelland. (Qatar University, Qatar)*

12:00 – 12:15	Removal of Emulsified Oil Droplets in Treated Produced Water Using Solar-powered Flow-through Double-bedded Electrochemical Filtration System. *Muhammad Widad Hassan, Sifani Zavahir, Deepalekshmi Ponnamma, Ahmed Elzatahry and Dong Suk Han. (Qatar University, Qatar)*
12:15 – 12:30	Sirotions of Metal (Loids) from Aqueous Solution Using Aerogel Composite from Date Palm Leaves and Mxene. *Hugues PREUD'HOMME, (Universite de Pau, France.)*
12:30 - 14:00	Lunch & Networking Break
14:00 - 15:00	**Panel Discussion 6: The Energy-Water-Environment Nexus in National Development Strategies - including an introduction of the Arid City Network initiative** (Auditorium 1)
15:00 - 16:00	Awards & Closing Ceremony (Auditorium 1)
17:00 – 20:00	Cultural Visit and Reception at Qatar National Museum (Hosted by QNM & Enbat Holdings) – *Registration is required.*

LIST OF POSTERS

Theme 1: Energy Transition

Poster ID	Content
ENE_002	Designing of heat absorbers from recycled Tetra Pak waste and paraffin wax. *Taghreed Al-Gunaid, Igor Krupa and Patrik Sobolciak (Qatar University, Qatar)*
ENE_045	Green Hydrogen for Carbon Sink Energy. *Muhaimin Iqbal and Ismail Umar (Advanced Renewable Energy Organization, Indonesia)*
ENE_056	Finite Control Set Model Predictive Control Method for Universal Battery Charger. *Naki Guler and Sertac Bayhan (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_057	Renewable Energy Trading Blockchain-enabled Marketplace. *Ameni Boumaiza and Antonio Sanfilippo (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_058	Understanding the Thermal Characteristics of 18650 LiFePO4 Lithium-Ion Battery Cells: A Thorough Analysis of Heat Generation Mechanisms. *Kenza Maher, Yahya Zakaria and Noora S. Al-Jaidah (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_063	Harmonic Mitigation in Islanded AC Microgrids Based Active Filtering Method. *Abdelbasset Krama (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_064	Nucleate boiling enhancement on bubble-induced assembly of graphene oxide/carbon black hybrid networks. *Nurettin Sezer (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_066	The Role of Clean Technology in Diversifying the Economy An Empirical Study of Qatar's Innovation System. *Maroua Benlahrech and Marcello Contestabile (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_080	Investigation of Preferable Feedstock Blends for Enhanced Yield of Biomethane. *Saima Shahzad Mirza, Saira Abdul Aziz, Arjumand Shah Bano, Athar Mahmood and Muhamad Umar Ijaz (University of Education, Pakistan)*

ENE_085	Solar Cadaster Development to Boost PV Penetration at Urban Scale in Qatar. *Dunia Bachour, Daniel Perez-Astudillo, Hissa Alhajri and Antonio Sanfilippo (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_098	Surface-Enhanced Raman Scattering in a Randomly Distributed Single-Walled Carbon Nanotube Networks and Gold Nanoparticles for Improved Surface Plasmon Application. *Brahim Aissa and Alessandro Sinopoli (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_100	Fabrication of plasmonics Au nanostructures on the surfaces of metal oxides thin films by a solid state thermal dewetting for solar cells applications. *Brahim Aissa, Mohammad Hossain, Yahya Zakaria and Alessandro Sinopoli (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_101	Development of an optimized silica coating for the quantification and mitigation of the PV-Soiling in bifacial modules configuration. *Brahim Aissa, Mohammad Hossain and Juan Lopez-Garcia (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_129	Real-world experimental insights into building transactive energy trading platform. *Abdullah Abdul Jabbar, Dr. Ameni Aboumaiza, Dr. Mohd Zamri and Dr. Sertac Bayhan (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_139	Modelling energy transition scenarios for the State of Qatar. *Pankaj Kumar, Carlos Mendez, Pooya Hoseinpoori, Ariane Millot, Marcello Contestabile and Adam Hawkes (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_152	System archetypes and circular economy methods for improving water management in the water-energy-food nexus. *Ehsan Mousavi and Omid Tavakoli (University of Tehran, Iran)*
ENE_162	Assessing the Environmental Impact and Economic Viability of Membrane-Based Air Cooling Systems: A Life-Cycle Approach. *Ahmed Mohamed, Ahmed Abdala and Dhabia Al-Mohannadi (Texas A&M University at Qatar)*
ENE_226	Circular Plastic Economy for Downstream Petrochemical Industry. *Muhammad Anwar and Sarim Dastgir (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_227	Urban Mining: Circular Economy Prospects for the Catalyst Development. *Sarim Dastgir and Muhammad Anwar (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENE_249	Molecular Rectenna Solar Cells. *Manal Alsalama, Golibjon Berdiyorov, Atif Zekri ,Tong Yongfeng, Hicham Hamoudi (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*

ENE_250	2D Printed Hierarchical Structures with Self-Patterned Metallic Nano-Fractal Electrodes for Energy Conversion Applications. *Sara I. Ahmad, A. Zekri, G. R. Berdiyorov, Y. Tong, M. Alsalama, S. Mansour, Hicham Hamoudi (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*

Theme 2: Water Resources, Processes and Advances

Poster ID	Content
WAT_008	Cyanobacterial and Gemfibrozil Removal from Treated Sewage Effluent: An Investigation of Ozone and Advanced Oxidation Processes. *Jayaprakash Saththasivam (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
WAT_013	Removal of Micro-organic Pollutants from TSE using Modified activated carbon filters by direct filtration method. *Rashad Al-Gaashani, Jayaprakash Saththasivam, Viktor Kochkodan and Jenny Lawler (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
WAT_030	Treatment of AC condensate water for beneficial reuse - a sustainable solution. *Radee Alrewaily and Zhaoyang Liu (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
WAT_036	Reuse of medical waste for oil spill cleanup- a sustainable solution. *Oluwaseun Ogunbiyi and Zhaoyang Liu (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
WAT_047	Addressing Water Management in Qatar through Social Network Analysis (SNA). *Iman Abdel-Hadi, Annamaria Mazzoni, Gordon Mckay and Adel Elomri (Hamad Bin Khalifa University, Qatar).*
WAT_050	Water Resource Management and Stakeholder Engagement using Causal Loop Diagram: Qatar Case Study for Sustainable Development. *Khawar Naeem, Adel Elomri and Adel Zghibi (Hamad Bin Khalifa University, Qatar).*
WAT_069	The Use of Biochar from Acacia Tree Waste as a Sorbent for the Removal of Phosphate from Treated Sewage Effluents. *Yehia Manawi, Viktor Kochkodan, Rashad Al-Gaashani and Simjo Simson (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
WAT_075	Carbonate plasterboard: development of locally sourced and carbon-negative construction material. *Aiste Zukaityte, Aya Alhashimi, Roneta Chaliulina and Yousef Alhorr (Gulf Organisation for Research and Development, Qatar)*
WAT_077	Efficient Removal of Murexide Dye using Activated Carbon Derived from Prickly Pear Seed Cake. *Rimene Dhahri and Mokhtar Guizani (University of Gafsa, Tunisia)*
WAT_132	Case Study of Sustainable Water Management: Integrated National Water Resources Database (INWRD) in State of Qatar. *Maha Al Matwi (Kahramaa, Qatar)*

WAT_133	Transforming CO2 and Brine Wastes into Valuable Gypsum Board Alternatives: Optimized Approaches for a Scalable Continuous Process. *Aya Alhashimi, Aiste Zukaityte, Roneta Chaliulina and Yousef Alhorr (Gulf Organisation for Research and Development, Qatar)*
WAT_141	PHOTOCATALYTIC HYDROGEN GENERATION FROM SEAWATER USING HIGH PERFORMANCE POLYMERIC MATERIALS. *Noora Al-Subaiei and Ghalya Abdulla (Texas A&M University at Qatar)*
WAT_185	Desalination of brackish groundwater in Al-Batinah Region on cationic, chelating and anionic exchangers based on graphene Oxide for irrigation purposes. *Mahmood Al-Azwani and El-Said Elshafey (Sultan Qaboos University, Oman)*
WAT_208	Fabrication of environmental-antibacterial activated carbon from clove seeds. *Aisha Al Musharrafi, Sharifa Al Shaqsi and Elsaid Al Shafey (Sultan Qaboos University, Oman)*
WAT_239	Feasibility study of the possibility of exploiting geothermal energy resources in Waddan city (south of Libya) to generate electricity and obtain cooling and freezing effect. *Nesreen El Raeid (University of Benghazi, Libya*
WAT_248	Microcystin-LR Removal by Ozone (O3) and Vacuum-UV (VUV): The Effect of Chloride Ions. Fatima AlAfifi, Saad Jasim, Madjid Mohseni (University of British Columbia, Canada)

Theme 3: Environmental Pollution and mitigation

Poster ID	**Content**
ENV_059	Screening Porous Solids for Direct Air Capture Applications. Fadwa El-Mellouhi, *Satyanarayana Bonakala and Elumalai Palani (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENV_071	Enhancing Low-Pressure CO2 Uptake: Post-Functionalized Copper MOFs for Carbon Dioxide Capture. *Elumalai Palani, Sebastien Vaesen, Satyanarayana Bonakala, Wolfgang Schmitt, Stefano Sanvito and Fedwa El Mellouhi (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENV_084	New ecological materials for the treatment of olive mill wastewater. *Rabia Benaddi, Ahmed Osmane, Khadija Zidan, Khalifa El Harfi and Naaila Ouazzani (Cadi Ayyad University, Morroco)*
ENV_088	Qatar's Agroforestry and its Contribution to the National Goals of Net-Zero Emission and Climate Change Mitigation. *Salem Al-Naemi and Farhat Abbas (University of Doha for Science and Technology, Qatar)*

ENV_091	Climate transformation of desert farms and its sequences of production improvement and emission reduction. *Lolwa Al-Maadid (Qatar Computing Research Institute, Hamad Bin Khalifa University, Qatar).*
ENV_099	Study of the efficiency of natural lagoons for the treatment of urban domestic wastewater in arid climates (Morocco. *Ahmed Osmane, Khadija Zidan, Rabia Benaddi, Imane Sebah, Nadia Elmouraille and Moustapha Belm*ouden *(University Ibn Zohr, Morroco)*
ENV_110	Novel approach to improve membrane fouling resistance: reverse osmosis membrane fabrication via different composite materials. *Dana Da'Na, Mohammad Alghouti and Mohammad Ashfaq (Qatar University, Qatar)*
ENV_117	Adaption strategies in forestry under global climate change impact: The ASFORCLIC project. *Kyriaki Giagli and Petr Čermák (Mendel University in Brno, Czech Republic)*
ENV_120	Spatial and temporal variability of NO2 and SO2 tropospheric columns over Qatar and the GCC regions from 2018 to 2022: A view from Space. *Yasir Mohieldeen and M. Rami Alfarra (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENV_136	Experimental Study and Modeling of Direct Air Capture of Qatar's Fluctuating Atmosphere. *Yasser Abdellatif, Ahmed Sodiq, Riham Abubakr, Odi Alrebei and Abdulkarem Amhamed (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENV_177	IMPACT OF URBANIZATION ON LOCAL WEATHER AND MESOSCALE FLOW PATTERN OVER A COASTAL REGION. *Rajeswari J R and Christos Fountoukis (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
ENV_190	Demospongiae: Silent Microbial Communicators in Seawater Analysis. *Fatiha Benslimane, Sonia Boughattas and Albandari Al-Khater (Qatar University, Qatar)*
ENV_191	Life Cycle Assessment of Recycled Coarse Aggregates from Construction and Demolition Waste: Environmental Impacts and Sustainability Potential in Kuwait. *Hanan Alazemi and Seyed Hamidreza Ghaffar (Brunel University London, Kuwait)*
ENV_194	The Disconnect Between Theory and Practice: Finding Sustainability in Energy, Water, and Environmental Consumption Behaviours in Higher Education. *Shaikha Al-Nuaimi (Hamad Bin Khalifa University, Qatar).*

Theme 4: Innovative Solutions for the Oil and Gas Industry

Poster ID	Content
IOG_017	Deep Eutectic Solvents for Electrocatalytic Applications. *Mustafa Essa, Osman Rashid, Tauqeer Chowdhury, Yusuf Siddiqui, Rajender Boddula, Ahmad Bahgat and Dr. Noora Al-Qahtani (Qatar University, Qatar)*
IOG_018	Intelligent Smart Coatings for Enhanced Corrosion Protection in Carbon Steel. *Ala Alardah, Hadir Ibrahim, Marwa Alani, Amal Mahgoub, Noora Aboumattar, Muddasir Nawaz, R. A. Shakoor, Ahmad Bahgat and Noora Al-Qahtani (Qatar University, Qatar)*
IOG_033	Recent Developments in Bifunctional Catalysts for Direct Synthesis of Olefins from Syngas. *Ana'Am Abunahia, Besan Alja'Oni, Noura Faragalla, Rajender Boddula, Ahmad Bahgat and Dr. Noora Al-Qahtani (Qatar University, Qatar)*
IOG_086	Integrating Helical Heat Exchanger in Ammonia Production Plants. *Odi Alrebei, Yasser Abdellatif, Ahmed Sodiq, Riham Abubakr and Abdulkarem I. Amhamed (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
IOG_087	Electrochemical formate production as a path to net zero-carbon hydrogen economy. *Izza Fatima, Sifani Zavahir, Sajna M.S., Arti Mishra, Muthumeenal Sundarapandian and Dong Suk Han (Qatar University, Qatar)*

Theme 5: Sustainability & Digital Solutions

Poster ID	Content
SUT_121	Sustainable Solutions for Agriculture Waste Valorization in Gulf Countries. *Nur Fathin Ruslan, Noormazlinah Ahmad and Antonio Sanfilippo (University Malaysia Pahang, Malaysia)*
SUT_122	Energy Disaggregation for Air Conditioning in Qatar. *Usman Zafar and Sertac Bayhan (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
SUT_131	Smart Cities: A Holistic Approach for Environmental, Social, and Economic Well-being. *Sana Zarrar (Qatar)*

SUT_146	Development of a simulation platform for greenhouse-based tomato production in Qatar. *Abdellah Islam Kafi, Antonio Sanfilippo, Raka Jovanovic, Mohd Zamri Che Wanik and Sa'D Abdel-Halim Shannak (Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Qatar).*
SUT_216	An Investigation of the Effectiveness of Passive Cooling Strategies in Enhancing Energy Performance for Shops Building in Hot Climates. *Reema A. Tobeishat and Hanan Taleb (*British University in Dubai*, UAE)*
SUT_231	Enhancing Locational FDIA Detection in Smart Grids: A Hyperparameter Optimization Analysis. *Rawan Ibraheem, Maymouna Ez Eddin, Mohamed Massaoudi and Haitham Abu-Rub (Texas A&M University, USA)*
SUT_247	How Artificial Intelligence Tools Provide the Efficient Waste Management through Water - Energy - Environment Nexus. Sara Seyed Mahmoud Baraghani, Seyed Amirali Mard and Omid Tavakoli (University of Tehran, Iran)

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NEXUS IN DESERT CLIMATE