



RE071: Innovation & Sustainability in Power & Water Sectors

Training Description:

The **Innovation & Sustainability in Power & Water Sectors** training program is a comprehensive five-day course designed to equip professionals with the knowledge and practical skills required to drive innovation while achieving sustainability goals across the power generation, transmission, distribution, desalination and water utility sectors. As the global energy and water industries transition toward low-carbon operations, digital transformation, resource efficiency and circular economy practices, organizations must embrace innovative technologies and sustainable business strategies to remain competitive and compliant with evolving regulatory requirements.

This training course explores emerging trends, technological innovations, renewable energy integration, smart grids, digital water management, artificial intelligence, IoT applications, carbon reduction strategies, ESG frameworks, climate resilience and sustainable infrastructure development. Participants will gain practical insights into implementing innovative solutions that improve operational efficiency, reduce environmental impacts, optimize resource utilization and support long-term organizational sustainability.

The training course combines international best practices, real-world case studies, group discussions and practical workshops to help participants develop actionable strategies applicable to their organizations.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Understand global sustainability trends affecting the power and water industries
- ✓ Identify innovative technologies transforming utilities and infrastructure
- ✓ Integrate renewable energy into existing power systems
- ✓ Apply sustainability principles in power generation and water management
- ✓ Evaluate digital transformation opportunities using AI, IoT, Big Data and automation
- ✓ Develop carbon reduction and energy efficiency strategies
- ✓ Improve water conservation and resource optimization practices
- ✓ Understand ESG reporting and sustainability performance measurement
- ✓ Assess climate risks and develop resilient infrastructure strategies
- ✓ Create innovation roadmaps aligned with organizational sustainability objectives

Training Designed for:

This training course is intended for Utility Managers, Power Plant Managers, Water Treatment Plant Managers, Operations Managers, Engineering Managers, Electrical Engineers, Mechanical Engineers, Process Engineers, Water Engineers, Sustainability Managers, Environmental Managers, HSE Professionals, Asset Management Professionals, Maintenance Engineers, Project Managers, Energy Managers, Strategic Planning Professionals, Regulatory Compliance Officers, Technical Consultants and Government Utility Officials.

Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request."

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

SUSTAINABILITY TRANSFORMATION IN POWER & WATER INDUSTRIES

- ❖ **Module 1: Global Energy and Water Sustainability Challenges**
 - Climate change and utility resilience
 - Global energy transition
 - Water scarcity challenges
 - Net Zero commitments
 - Sustainable Development Goals (SDGs)
- ❖ **Module 2: Sustainability Principles for Utilities**
 - Triple Bottom Line approach
 - ESG fundamentals
 - Circular economy concepts
 - Sustainable utility management
 - Corporate sustainability strategies
- ❖ **Module 3: Regulatory Frameworks**
 - International environmental regulations
 - Carbon emission policies
 - Water governance
 - Energy efficiency standards
- ❖ **Environmental compliance**
- ❖ **Module 4: Innovation Culture**
 - Innovation management principles
 - Building innovative organizations
 - Leadership for sustainability
 - Organizational transformation
 - Change management
- ❖ **Exercises:**
 - Sustainability maturity assessment
 - Innovation readiness evaluation

DAY TWO:

EMERGING TECHNOLOGIES FOR SUSTAINABLE UTILITIES

- ❖ **Module 1: Renewable Energy Technologies**
 - Solar PV systems
 - Wind energy integration
 - Hydropower innovations
 - Green hydrogen
 - Battery Energy Storage Systems (BESS)
- ❖ **Module 2: Smart Power Systems**
 - Smart grids

- Digital substations
- Distributed Energy Resources (DER)
- Demand response systems
- Grid modernization

❖ **Module 3: Smart Water Management**

- Smart metering
- Leak detection technologies
- Digital water networks
- SCADA optimization
- Water quality monitoring

❖ **Module 4: Digital Technologies**

- Artificial Intelligence
- Machine Learning
- Internet of Things (IoT)
- Big Data Analytics
- Cloud computing
- Digital twins

❖ **Exercises:**

- Identifying digital transformation opportunities within participants' organizations

DAY THREE:

RESOURCE EFFICIENCY AND OPERATIONAL EXCELLENCE

❖ **Module 1: Energy Efficiency**

- Energy audits
- Efficiency improvement techniques
- Process optimization
- Waste heat recovery
- Demand-side management

❖ **Module 2: Water Efficiency**

- Water loss reduction
- Water reuse
- Wastewater recycling
- Desalination optimization
- Water conservation strategies

❖ **Module 3: Asset Sustainability**

- Sustainable asset lifecycle management
- Predictive maintenance
- Reliability improvement
- Risk-based maintenance
- Asset performance optimization

❖ **Module 4: Circular Economy Applications**

- Waste minimization
- Resource recovery
- Industrial symbiosis
- Sustainable procurement
- Green supply chains

❖ Exercises:

- Developing resource optimization improvement plans

DAY FOUR:

INNOVATION STRATEGY AND CLIMATE RESILIENCE

❖ **Module 1: Strategic Innovation Management**

- Innovation portfolio management
- Technology evaluation
- Investment prioritization
- Business case development
- Innovation governance

❖ **Module 2: Climate Risk Management**

- Climate adaptation
- Infrastructure resilience
- Disaster preparedness
- Risk assessment
- Business continuity

❖ **Module 3: ESG Integration**

- ESG reporting frameworks
- Sustainability KPIs
- Carbon accounting
- Stakeholder engagement
- Sustainability disclosure

❖ **Module 4: Financing Sustainable Projects**

- Green finance
- Climate finance
- Carbon markets
- Sustainable investment models
- Public-private partnerships

❖ Exercises:

- Building a climate resilience strategy for utility operations

DAY FIVE:

FUTURE UTILITY TRANSFORMATION AND ACTION PLANNING

❖ **Module 1: Future Trends**

- AI-driven utilities
- Autonomous operations
- Smart cities integration
- Digital utilities
- Decentralized energy systems

❖ **Module 2: Innovation Project Management**

- Project planning
- Change implementation
- Stakeholder management
- Performance monitoring
- Benefits realization

❖ **Module 3: Developing Organizational Sustainability Roadmaps**

- Strategic planning
- Prioritizing innovation initiatives
- Setting measurable targets
- Monitoring progress
- Continuous improvement
- ❖ **Module 4: International Best Practices**
 - Leading global utility case studies
 - Successful innovation programs
 - Lessons learned
 - Benchmarking methodologies
- ❖ **Final Exercises:**
 - Presentations of innovation and sustainability roadmaps
 - Personal action plans for implementation
- ❖ **Course Conclusion**
- ❖ **POST-ASSESSMENT and EVALUATION**

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

USD\$ TBA - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

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