

Water Loss 2024

April 14-17, 2024

San Sebastián

FINAL PROGRAMME

Sunday, 14th April, 2024



	WORKSHOPS	DESCRIPTION
11:00 to 12:30	WORKSHOP 1 DEVELOPING A PATHWAY TO A DIGITAL FUTURE Cor Merks, Francisco Arregui De-La-Cruz, Thorkil Bartholdy Neergaard	Static water meters provide a large amount of useful data. The use of this meter data to its fullest extent allows water operators to develop and operate a digital value chain. Frontrunner operators worldwide did already create added value for the utility and their customers and stakeholders. Other water operators are at the start of their digitalization journey. These water operators might be inspired by successful residential static water meter implementation projects or are hesitant when considering an unknown impact on their organisation. The workshop will provide the participants the full range of insights gained in a variety of countries so far. The panelists together with the participants will examine the opportunities and challenges that are related with the value creation process that is part of the implementation of static meters and the use of water meter data.
13:30 to 15:00	WORKSHOP 2 COMPARING LEVELS OF WATER LOSS INTERNATIONALLY Stuart Trow, David Pearson, Alan Wyatt, Joerg Koelbl	The aim of the workshop is to discuss the level of water loss in water supply organisations around the world and the measures used to assess and compare those levels. The presenters have been meeting regularly for several months on an initiative to collect water loss data from around the world and to consider the various indicators for making comparisons. As interest in water loss management grows, and targets are being set in many countries often based on comparative KPIs, it is important that water suppliers, consultants, and especially regulators and governments understand the relative merits of each measure. It is also necessary to have a better assessment of water loss levels internationally at a time when there is increased focus on this precious resource.
15:30 to 17:00	WORKSHOP 3 UNLOCKING CLIMATE FINANCE FOR WATER LOSS REDUCTION David Ehrhardt, Steve Cavanaugh, Gregory Kpegli	Billions of dollars of climate finance are available. Water loss reduction mitigates greenhouse gas emissions while boosting resilience to climate change. How can water loss reduction projects benefit from climate finance? To answer that question, we will explore the centrality of robust measurement in making a credible case for climate finance and review the various types of climate finance on offer, providing you with practical information with which to craft strategies to finance your loss-reduction projects.
20:00	WELCOME COCKTAIL at KURSAAL	(www.waterloss2024.org/social-events.htm)

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Monday, 15th April, 2024



8:00 REGISTRATION DESK OPEN									
SALA DE CÁMARA					DESCRIPTION				
08:30-09:15 OPENING CEREMONY									
IWA Water Loss Specialist - Stuart Hamilton, Chair IWA WLSG San Sebastian Council									
09:15-10:15 PLENARY SESSION NRW Climate Change Nexus									
<i>Description :</i> The plenary session will feature a panel discussion from industry experts who will share ideas, concepts, case studies, and the latest findings on how water loss reduction projects can effectively leverage climate finance and contribute to climate resilience and mitigation efforts <i>Moderator :</i> Stuart Hamilton - Climate Change Advocate, Chair IWA WLSG, Senior VP CWWA <i>Panelists :</i> Noam Komy - CEO Miya, over 1M tonnes of Global NRW Carbon savings on Projects executed David Ehrhardt - CEO and Owner of Castalia Gregory Koffi Kpegli - Water Supply and Sanitation Specialist, International Finance Corporation Steve Cavanaugh, P.E. - President/CEO Cavanaugh, Chair Leakage Emissions Initiative, IWA Water Loss Specialist Group									
10:15-10:50 Coffee Break									
SALA DE CAMARA			ROOM 1/2			ROOM 3			
10:50-12:20 NRW ASSESSMENT 1 <i>Chair: Dewi Rogers</i>			METER MANAGEMENT & APPARENT LOSSES 1 <i>Chair: Francisco Arregui</i>			FINANCING & ECONOMICS <i>Chair: Steve Cavanaugh</i>			
Presenter	Title	Country	Presenter	Title	Country	Presenter	Title	Country	
10:50-11:10 Dewi Rogers	Water Loss – what’s next?	ITALY	Mikal Willmott	Are metering inaccuracies likely to lead to wrong transmission zones being targeted for leakage detection?	UK	Gregory Kpegli	Collaborative development of an economic level of losses tool for optimal water loss reduction in a large utility	USA / BRAZIL	
11:10-11:30 David Maisonneuve	Veolia water loss management solution	FRANCE	Francisco Arregui	Study on the metrology of domestic solid-state meters under real operating conditions	SPAIN	Steve Cavanaugh	Outside investors paying for leakage, really?	USA	
11:30-11:50 Richard Taylor	Update of the New Zealand Water Loss Guidelines - Managing water losses in New Zealand	NEW ZEALAND	Tugba Akdeniz	Assessment of apparent water losses in Turkey	TURKEY	Alan Wyatt	Development and application of an economic level of losses model with a large Brazilian water and wastewater utility	USA / BRAZIL	
11:50-12:10 Fernando de la Calle	Harnessing the potential of digital transformation to drive non-revenue water reduction	SPAIN	Francesc J. Gavara	The water meter, key for non-registered water?	SPAIN	David Ehrhardt	Innovative financing of NRW through climate finance	USA	
12:10-12:20 Q&A			Q&A			Q&A			
12:20-13:30 Lunch									
13:30-15:00 NRW ASSESSMENT 2 <i>Chair: Marco Fantozzi</i>			METER MANAGEMENT & APPARENT LOSSES 2 <i>Chair: Gary Wyeth</i>			REGULATION <i>Chair: Reinhard Sturm</i>			
Presenter	Title	Country	Presenter	Title	Country	Presenter	Title	Country	
13:30-13:50 Johana Beltran	Good practices in non revenue water at Veolia Colombia	COLOMBIA	H. Pernille Hansen	A business case for implementation of smart metering	DENMARK	Reinhard Sturm	Level 1 water audit validation Guidance Manual, second edition (Water Research Foundation project 5057)	USA	
13:50-14:10 Annalisa Gaccione	The EU recovery plan - the opportunity to lead Italy to a full digitalization in the water industry and a NRW reduction	ITALY	Omar Valera	Reducing apparent losses: mechanical vs solid-state water meters	SPAIN	Will Jernigan	The North American Water Loss Report - 2024 Edition	USA	
14:10-14:30 V. Grizelj Simic	Preparation of a draft national water loss reduction action plan	CROATIA	Dionisio Pérez	Determination of consumption pattern through the use of smart water meters	COSTA RICA	Habib Muhammetoglu	A critical review of water losses control regulation in Turkey	TURKEY	
14:30-14:50 Zdenek Svitak	Tabor - a long-term complex approach to the water loss reduction	CZECH REPUBLIC	Pedro Rodrigues	Study on metering errors in domestic meters in the distribution network of Beja (Portugal)	PORTUGAL	Kian Burdett	The Power of Apprentices in Reducing Leakage – A Case Study	UK	
14:50-15:00 Q&A			Q&A			Q&A			
15:00-15:30 Coffee break									
15:30-17:00 WATER LOSS PERFORMANCE INDICATORS <i>Chair: Joerg Koelbl</i>			COMBINING TECHNOLOGY & DATA ANALYTICS <i>Chair: Joe Dalton</i>			NRW REDUCTION <i>Chair: Milene Aguiar</i>			
Presenter	Title	Country	Presenter	Title	Country	Presenter	Title	Country	
15:30-15:50 Daniel Zipperer	Challenges in applying the ILI as a water loss indicator to water utilities in Rhineland-Palatinate	GERMANY	Torben Østergård	Using Machine Learning to find Leaks utilizing Smart Meter Based Acoustic Noise Data	DENMARK	Reid Butler	Water loss knowledge hub development , NSW Australia	AUSTRALIA	
15:50-16:10 Joxemi Telleria	Indicators and work lines to improve performance in municipalities of the Consortium of A. de Gipuzkoa	SPAIN	Laura Agustina	Advantage of remote sensing data for the optimisation of supplies management	SPAIN	A. Bojko / F. Lupo	Physical water losses: How the city managed to stop the bleeding, Cali, Colombia 2019-2022	COLOMBIA	
16:10-16:30 Joerg Koelbl	Experience in the application of the Combined Real Loss Indicator (CRLI) in comparison to other Indicators	AUSTRIA	Pierre Bonardet	Leveraging remote meter reading and digital solutions for improved water utility management: Cases study in Béziers	FRANCE	Raisa Kyrönseppä	Evaluation of DMA sectorisation criteria: Case study in Helsinki metropolitan area	FINLAND	
16:30-16:50 Arturo Albaladejo	Alternatives to ILI for measuring network efficiency in small municipalities	SPAIN	Bruno Dura	Leakman: A holistic leakage management system for water efficiency	DENMARK	Jose Luis Badiola	Donostia-San Sebastian: Successful reduction of ANR and control of efficiency indicators	SPAIN	
16:50-17:00 Q&A			Q&A			Q&A			
17:00-17:10 Short Break									
17:10-17:50 EXPRESS SESSION - SUMMARY OF SUNDAY WORKSHOPS <i>Chair: David Pearson</i>			EXPRESS SESSION - DIGITALIZATION, AI AND ML APPLICATIONS <i>Chair: Gary Wyeth</i>			EXPRESS SESSION - SMART WATER NETWORKS <i>Chair: Ricardo Cobacho</i>			
Presenter	Title	Workshop	Presenter	Title	Country	Presenter	Title	Country	
17:10-17:20 Cor Merks	Developing a pathway to digital future	Workshop 1	Nicole Kinsman	Stainless steel service lines for best total cost of ownership	BELGIUM	Ignacio Moreno	Digital transformation of GO focused on the NRW: The Case of success of the city of Burjassot (Valencia)	SPAIN	
17:20-17:30 Stuart Trow	Comparing levels of Water Loss internationally	Workshop 2	Kibum Kim	Strategic leakage management in water distribution network using varying coefficient binary regression model	USA	Pablo Delgado	Acoustic leak detection using an in-line free-floating multi-sensor device	CANADA	
17:30-17:40 David Ehrhardt	Unlocking climate finance for water loss reduction	Workshop 3	Haekeum Park	Developed a machine learning-based model to predict the condition assessment grade of water pipes	KOREA	Robbert Lodewijks	Research-backed approach to enhancing burst detection accuracy in water pipes using multiple existing sensor data	HOLLAND	
17:40-17:50 WORKSHOPS - Q&A									

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Tuesday, 16th April, 2024



	SALA DE CAMARA			ROOM 1/2			ROOM 3		
	LEAK DETECTION 1 <i>Chair: Stuart Trow</i>			TECHNOLOGY & INNOVATION <i>Chair: Cor Merks</i>			TRAINING AND CAPACITY BUILDING <i>Chair: Mary Ann Dickinson</i>		
	Presenter	Title	Country	Presenter	Title	Country	Presenter	Title	Country
08:45-10:15									
08:45-09:05	Nele Philips	Utility De Watergroep investigates the use of alternative methods for leak detection	BELGIUM	Rudolf Ertl	Digital airvalve, the next part in the Smart Water Network	AUSTRIA	Tory Wagoner	The Florida Water Loss Program: Continuing the Trend of Voluntary WL Training and Technical Assistance Programs	USA
09:05-09:25	Kelvin Siew	Pressure transient monitoring and leak detection system on trunk mains	MALAYSIA	Daniel Mediano	New developments for big-diameter water networks management	SPAIN	Marco Fantozzi	The Italian Association of Non-Destructive Testing (AIpND) and the certification of personnel engaged in Leak Detection	ITALY
09:25-09:45	Joseph Butterfield	Application of ML to improve leak detection and localisation using acoustic sensing in high noise environments	UK	Edmund Riehle	How Distributed Fiber Sensing complements existing leak detection technologies	GERMANY	Ayse Muhammetoglu	Capacity Building of the Turkish Municipalities for Water Losses Management	TURKEY
09:45-10:05	Stuart Trow	Background leakage - What is it?	UK	Mark Nicol	High-Speed Transient Detection and Analysis to reduce Burst Rates and Extend Asset Life	SINGAPORE	Jamie Peterson	Capacity Building on Non-Revenue Water Reduction Projects: Challenges and Opportunities	UK
10:05-10:15	Q&A			Q&A			Q&A		
10:15-10:45	Coffee break								
10:45-12:15	LEAK DETECTION 2 <i>Chair: Jamie Paterson</i>			DIGITALIZATION, AI & ML APPLICATIONS 1 <i>Chair: Raul Navas Martinez</i>			PERFORMANCE-BASED CONTRACTS & WATER LOSS <i>Chair: Fabio Garzon-Contreras</i>		
	Presenter	Title	Country	Presenter	Title	Country	Presenter	Title	Country
10:45-11:05	Martin Duff	A multimethod leak detection strategy to reduce the global water loss	UK	Ricardo Guimarães	WONE App – Active leak control in your hands; a Digital Tool for Asset Management	PORTUGAL	Fabio Garzon-Contreras	Risk allocation in NRW performance-based contracts	COLOMBIA
11:05-11:25	Jonathan Jacobi	Drought Resiliency: Securing Drinking Water Supply in Northern Italy with Satellite Leak Detection	ISRAEL	Raul Navas	Practical view of digital twins in water networks: use cases and real experiences	SPAIN	Pedro Ramalho	AGS's journey through the implementation of a Performance Based Agreement in Romania to reduce non-revenue water	PORTUGAL
11:25-11:45	Moinak Bnaerjee	Robotic Leak Detection Technology For Water Distribution Pipelines	INDIA	Sofia Mendaza	360 NRW Management: analysis, priority and monitoring of optimization plans for more sustainable and resilient services	SPAIN	K. Ashok Natarajan	Planning the Transformation of Chennai Metro water towards Reduction in NRW and increase in cost recovery through Smart Metering and services	INDIA
11:45-12:05	Thijs Lanckriet	Fiber optic sensing: leak detection method, asset management tool, digital connectivity solution, all of them?	BELGIUM	F. Perez A. Martínez	Strategic and operational decision-making for the digitalisation of the supply network in Donostia-S.S.	SPAIN	Juan Escobar	Towards a comprehensive definition of water loss reduction targets	COLOMBIA
12:05-12:15	Q&A			Q&A			Q&A		
12:15-13:30	Lunch								
13:30-15:00	ASSET MANAGEMENT 1 <i>Chair: Jo Parker</i>			DIGITALIZATION, AI & ML APPLICATIONS 2 <i>Chair: Igor Dundovic</i>			INTERNATIONAL CASE STUDIES 1 <i>Chair: Sofia Kanellopoulou</i>		
	Presenter	Title	Country	0	Title	Country	Presenter	Title	Country
13:30-13:50	Jo Parker	The hole truth	UK	Yoojin Oh	Evaluating sampling techniques for developing a failure prediction model in water pipeline networks	KOREA	S. Kanellopoulou / S. Marco Msambazi	Obtaining sustainable key results for NRW reduction projects: A practical experience from Dar Es Salam, Tanzania	FRANCE / TANZANIA
13:50-14:10	Dooil Kim	Residual life assessment using 3D profiles and structural analysis	KOREA	Carlos Marco	Improving leak detection by using digital twin (ArcGIS)	SPAIN	François Figueres	Achievements on NRW reduction: 2 detailed use cases	FRANCE
14:10-14:30	Gerald Gangl	Multi utility risk-based asset management	GERMANY	Igor Dundovic	Hydraulic modelling and machine learning for pressure management process	CROATIA	Victor Pelin	How can AI DMAs, fiber optics, pressure management and smart hydrants help us reach ILI=2 by 2028?	SWEDEN
14:30-14:50	Andreu Fargas	Asset management of large pipes with a Digital Twin	SPAIN	Xavier Torret	Giswater, an open source tool to design dma and operational zoning to improve the NWR efficiency	SPAIN	Jorge Helmbrecht	How a British utility improved network management by integrating data from 6,000 sensors into a single platform	SPAIN
14:50-15:00	Q&A			Q&A			Q&A		
15:00-15:30	Coffee break								
15:30-17:00	ASSET MANAGEMENT 2 <i>Chair: Cor Merks</i>			DIGITALIZATION, AI & ML APPLICATIONS 3 <i>Chair: Francisco Arregui</i>			INTERNATIONAL CASE STUDIES 2 <i>Chair: Aurélie Chazerain</i>		
	Presenter	Title	Country	Presenter	Title	Country	Presenter	Title	Country
15:30-15:50	Ken Goraya	Service connections: The weakest link in the water distribution network	AUSTRALIA	Aisha Mamade	Digital twins: Democratizing network analysis with continuously updated models in a utility environment	PORTUGAL	Carmen Navarro	Transforming IWS supply for equitable and efficient service in Chihuahua	MEXICO
15:50-16:10	Filip Vancoillie	How De Watergroep's people in the field prioritize pipeline replacement	BELGIUM	Diego Naranjo	Monitoring and artificial intelligence in the water cycle-aWA	SPAIN	Aurélie Chazerain	Achieving High Performance in Water Networks: Case studies of AQUAVESC Network and Nuove Acque Network	FRANCE
16:10-16:30	Sara Cunha	Porto's Three-Step Campaign – An integrate strategy to reduce non-revenue water	PORTUGAL	Funda Kisacik	Digital ear for leak characterization with machine learning	FRANCE	Elisa Henning	Spatial characterization of the occurrence of fraud in the public water supply system in Joinville, Southern Brazil	BRAZIL
16:30-16:50	Taehyeon Kim	A proactive asset management approach through optimizing the diagnosis decision-making of water pipe networks	KOREA	David J. Vicente	An innovative approach to pre-locate leaks based on numerical modelling, machine learning and graph theory	SPAIN	Panagiotis Dimas	Estimating water losses and designing reduction strategies in large water supply systems: The case of Athens	GREECE
16:50-17:00	Q&A			Q&A			Q&A		
17:15-18:00	OPEN MEETING of the IWA WATER LOSS SPECIALIST GROUP Activities, initiatives, discussions: Non-IWA WLSG members are MOST WELCOME								

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Wednesday, 17th April, 2024



SALA DE CAMARA			ROOM 1/2			ROOM 3			
DMA DESIGN & MANAGEMENT <i>Chair: David Pearson</i>			SMART WATER NETWORKS 1 <i>Chair: Richard Taylor</i>			WATER LOSS MANAGEMENT 1 <i>Chair: Ricardo Cobacho</i>			
08:45-10:15	Presenter	Title	Country	Presenter	Title	Country	Presenter	Title	Country
08:45-09:05	Kim Belmans	Smart DMA-design with sub-dividing plan : Case Study	BELGIUM	Lai Kah Cheong	PUB's Smart Water Analytics Platform – Enhancing Operational Efficiency via Reliable Digital Twin & Advanced Analytics	SINGAPORE	Anna Klobut	Water balance calculation in HSY (Finland) – lessons learned through a new calculation method	FINLAND
09:05-09:25	Cecilia S. Chantada	Evolution of Management by DMA – Slow but convinced – From the Pilot to the Strategic Plan	ARGENTINA	Mutahar Ali Abdullah	Implementing a WN Management System to Support Shifting from Empirical Operation to Data-Driven Decision-Making	DENMARK	Jaume Roquet	Balance of 15 years on the annual study of the hydraulic efficiency of the water transport network of ATL	SPAIN
09:25-09:45	Tomislav Vitovski	Virtual DMA – implementation and leak detection in it	CROATIA	Jan Van Cappellen	Permanent non-DMA based leak localization in WDN, using integrated sensors in smart watermeters	BELGIUM	Marcelo Depexe	Success of a Corporate Program in Water Loss Management in a Large Water and Sanitation Company	BRAZIL
09:45-10:05	Carlos Calatayud	Active management of drinking water supply systems through multi-agen systems (MAS)	SPAIN	Ramon Dolz	NRW control and DMA management through AMI/AMR integration with SCADA	SPAIN	Ricardo Cobacho	NRRL: Practical aspects and possibilities. Case study	SPAIN
10:05-10:15	Q&A			Q&A			Q&A		
10:15-10:50	Coffee break								
PRESSURE MANAGEMENT 1 <i>Chair: Kate Stanton-Davies</i>			SMART WATER NETWORKS 2 <i>Chair: Mikal Willmott</i>			WATER LOSS MANAGEMENT 2 <i>Chair: Joseph Butterfield</i>			
10:50-12:20	Presenter	Title	Country	Presenter	Title	Country	Presenter	Title	Country
10:50-11:10	Kate Stanton-Davies	The Power of N1	UK	Yaron Geller	AMR and water Utilities - technology leads change in management	ISRAEL	Adolfo Cuesta	Efficiency in the water cycle through Asset management systems	SPAIN
11:10-11:30	Alexandru Aldea	A case study of pressure management in over-pressured supply system – evolution of performance indicators	ROMANIA	Ruben M. Pereña	Reduction of NRW with smart metering in Canal de Isabel II	SPAIN	Andres Ortega	Control valves for NRW reduction and hydraulic network protection	SPAIN
11:30-11:50	David Sánchez	Optimizing Pressure Management in Intermittent Water Supply Systems	MEXICO	José Delgado	Business intelligence as a driver of digital transformation for ANC reduction	COSTA RICA	Zhou Sha	Feature study of leak-induced vibration	CHINA
11:50-12:10	Eva Martinez	Pressure transient management: Global trends, business case and introduction to a new global partnership program	SPAIN	Andross Pérez	Valencia Case Study: advanced water efficiency management through technology.	SPAIN	Ambrose Muhu	Thorough assessment of NRW for an effective, data driven campaign against water losses	KENYA
12:10-12:20	Q&A			Q&A			Q&A		
12:20-13:30	Lunch								
PRESSURE MANAGEMENT 2 <i>Chair: Stuart Stapely</i>			SMART WATER NETWORKS 3 <i>Chair: Milene Aguiar</i>			LEAKAGE MANAGEMENT <i>Chair: Andy Blackhall</i>			
13:30-15:00	Presenter	Title	Country	Presenter	Title	Country	Presenter	Title	Country
13:30-13:50	Stuart Stapely	The Difficulties of Pressure Management and How to Overcome Them	AUSTRALIA	Jinseok Hyung	Development of optimal WDNs design method using genetic algorithm and reliability analysis	KOREA	Andy Blackhall	Towards an Ethical Level of Leakage	UK
13:50-14:10	Eduardo Bulhoes	Evaluating the best pressure efficiency point	BRAZIL	Arsenio Mate	Experience in reducing commercial losses in the water supply system of Maputo Metropolitan regions	MOZAMBIQUE	José Antonio Iglesias	Digitisation of water leakage detection: Success stories from Spain and UK	SPAIN
14:10-14:30	Giuliano Ceseri	An innovative approach for quick leakage detection and real-time adaptive pressure control in a PMZ	ITALY	M. Clemente Lloscos	GO Smart Meter Networks Evolution Since 2006	SPAIN	Olgierd Wargowski	How the technology is helping to improve leak detection process	POLAND
14:30-14:50	Carmen Sánchez	Networks 2.0: sensorization, advanced pressure regulation and energy efficiency in the city of Valencia	SPAIN	Luiz R. Gravina	Improving the operational management of water supply systems through GIS integrated with hydraulic modeling	BRAZIL	Uri Gutermann	Europe is finally deploying the necessary funds to act on high water loss rates	GERMANY
14:50-15:00	Q&A			Q&A			Q&A		
15:00-15:30	Coffee break								
15:30-16:30	CLOSING CEREMONY <i>Stuart Hamilton & Gary Wyeth</i>								
20:00	ROLAND LIEMBERGER GALA DINNER AND AWARDS at PALACIO MIRAMAR			(www.waterloss2024.org/social-events.htm)					