

# Water Loss 2024

April 14-17, 2024 San Sebastián

(DRAFT PROGRAMME)

Sunday, 14<sup>th</sup> April, 2024



	ROOM 1	ROOM 2	ROOM 3
11:00 to 12:30	<b>WORKSHOP 1</b>  DEVELOPING A PATHWAY TO A DIGITAL FUTURE Cor Merks, Francisco Arregui		
13:30 to 15:00	<b>WORKSHOP 2</b>  COMPARING LEVELS OF WATER LOSS INTERNATIONALLY Stuart Trow		
15:30 to 17:00	<b>WORKSHOP 3</b>  UNLOCK CLIMATE & PRIVATE FINANCE FOR PBC NRW REDUCTION Ilan Adler, Tejas Pol, Noam Komy		
	<b>WELCOME COCKTAIL</b>		

	ROOM 1			ROOM 2			ROOM 3		
9:00 to 10:15	OPENING CEREMONY								
	Coffee break								
10:50 to 12:20	NRW ASSESSMENT 1 Chair:			METER MANAGEMENT & APPARENT LOSSES 1 Chair:			FINANCIAL ASPECTS & ECONOMICS Chair:		
	Author	Title	Country	Author	Title	Country	Author	Title	Country
	Dewi Rogers	Water Loss – what’s next?	ITALY	Mikal Willmott	Are Metering Inaccuracies Likely to Lead to Wrong Transmission Main Zones Being Targeted for Leakage Detec.?	UK	Gregory Koffi Kpegli	Collaborative Development of an ‘Economic Level of Losses’ Tool for Optimal Water Loss Reduction in a large Utility.	USA
	David Maisonneuve	Veolia Water Loss Management Solution	FRANCE	Francisco Arregui	Estudio sobre la metrología de los medidores de estado sólido domésticos en condiciones reales de funcionamiento	SPAIN	Steve Cavanaugh	Outside Investors Paying for Leakage, Really?	USA
	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
Fernando Garcia	Harnessing the potential of digital transformation to drive non-revenue water reduction	SPAIN	Francesc J. Gavara	El contador ¿Protagonista en el agua no registrada?	SPAIN	Ilan Adler	Innovative financing of NRW through climate finance	USA	
	Lunch			Lunch			Lunch		
13:30 to 15:00	NRW ASSESSMENT 2 Chair:			METER MANAGEMENT & APPARENT LOSSES 2 Chair:			REGULATION Chair:		
	Author	Title	Country	Author	Title	Country	Author	Title	Country
	J. Beltran Barajas	Good Practices in Non Revenue Water at Veolia Colombia	COLOMBIA	Klavs Høgh	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
	Mario Tavera	The EU recovery plan - the opportunity to led Italy to a full digitalization in the water industry and a NRW reduction.	ITALY	Pierre Bonardet	Leveraging Remote Meter Reading and Digital Solutions for Improved Water Utility Management: Case Study in Béziers	FRANCE	Itai Sagi	Regulation on water loss activities in Israel: a reality in the era of desalinated water	ISRAEL
	V. Grizelj Simic	Preparation of a draft National Loss Reduction Action Plan	CROATIA	Ariel Carlos Acevedo	Determinación del patrón de consumo mediante el uso de medidores de agua inteligentes	COSTA RICA	Will Jernigan	The North American Water Loss Report - 2024 Edition	USA
Zdenek Svitak	Tabor - a long-term complex approach to the Water Loss Reduction	CZECH REPUBLIC	Qiang Xu	A method to quantify metering and real losses based on water consumption modelling in DMAs	CHINA	Habib Muhammetoglu	A Critical Review of Water Losses Control Regulation in Turkey	TURKEY	
	Coffee break			Coffee break			Coffee break		
15:30 to 17:00	WATER LOSS PERFORMANCE INDICATORS Chair:			METER MANAGEMENT & APPARENT LOSSES 3 Chair:			INTERNATIONAL CASE STUDIES 1 Chair:		
	Author	Title	Country	Author	Title	Country	Author	Title	Country
	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
	Joxemi Telleria	Indicadores y Líneas de Trabajo para mejora del Rendimiento en municipios del Consorcio de A. de Gipuzkoa	SPAIN	L. Agustina Bazan	Explotación de datos de telelectura para la optimización de la gestión de los abastecimientos	SPAIN	Anna Bojko	Physical Water Losses: How the city managed to stop the bleeding, Cali, Colombia 2019-2022	COTE D’IVOIRE
	Joerg Koelbl	Experience in the application of the Combined Real Loss Indicator (CRLI) in comparison to other Indicators	AUSTRIA	Pedro Rodrigues	Estudio sobre errores de medición en contadores domésticos en la red de distribución de Beja (Portugal)	PORTUGAL	Raisa Kyrönseppä	Evaluation of DMA Sectorisation Criteria, Case Study in Helsinki Metropolitan Area	FINLAND
Arturo Albaladejo	Alternativas al IFE (ILI) para medir la eficiencia de las redes en municipios pequeños	SPAIN	Omar Valera Talavera	Reducing apparent losses: mechanical vs solid-state water meters	SPAIN	Jose Luis Badiola	Donostia-San Sebastian: Éxito en la reducción del ANR y control de indicadores de eficiencia	SPAIN	
	Break			Break			Break		
17:10 to 17:40	EXPRESS SESSION - WATER LOSSES IN UTILITY MANGAMENT Chair:			EXPRESS SESSION - DIGITALIZATION, AI AND ML APPLICATIONS Chair:			EXPRESS SESSION - SMART WATER NETWORKS Chair:		
	Author	Title	Country	Author	Title	Country	Author	Title	Country
	Simon Fetcher	Europe is finally deploying the necessary funds to act on high water loss rates	GERMANY	Robbert Lodewijks	Research-backed Approach to Enhancing Burst Detection Accuracy in Water Pipes using Multiple Existing Sensor Data	HOLLAND	Parisa Azari	Designing an Automatic Water Stopping Valve to Prevent Water Outflow upon Reconnection of Distribution Systems	IRAN
	Hana Al Maskati	Capacity Building for NRW: Problems and Potential Solutions	BAHRAIN	Kibum Kim	Strategic leakage management in water distribution network using varying coefficient binary regression model	USA	Ángela Alcaide	Networks 2.0: sensorization, advanced pressure regulation and energy efficiency in the city of Valencia	SPAIN
	Benoit Van Hecke	Stainless steel service lines for best total cost of ownership	BELGIUM	Haekeum Park	Developed a machine learning-based model to predict the condition assessment grade of water pipes	KOREA	I. Moreno Arguedas	Digital transformation of GO focused on the NRW: The Case of success of the city of Burjassot (Valencia)	SPAIN
German Gonzalez	Modelo técnico, comercial y financiero del programa ADE control pérdidas en 4 capitales de colombia	COLOMBIA	Carlos Calatayud	Active management of drinking water supply systems through multi-agen systems (MAS)	SPAIN	Jonathan Herrera	Optimizing Water Distribution Networks through Smart Water Solutions	SPAIN	

	ROOM 1			ROOM 2			ROOM 3		
8:45 to 10:15	<b>LEAK DETECTION 1</b> Chair:			<b>INNOVATION IN WATER LOSS MANAGEMENT</b> Chair:			<b>TRAINING AND CAPACITY BUILDING 1</b> Chair:		
	Author	Title	Country	Author	Title	Country	Author	Title	Country
	Marleen Spiliers	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	Dalia Loureiro	Integrating the water loss management process in utilities' strategies: the approach and results	PORTUGAL
	Kelvin Siew	Pressure transient monitoring and leak detection system on trunk mains	MALAYSIA	Isabel Alonso	New developments for big-diameter water networks management	SPAIN	Melissa Salas-Goldberg	La estrategia de aula invertida para el desarrollo de capacidades en la gestión de las pérdidas de agua	COSTA RICA
	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	Gianluca Vitali	The Italian Association of Non-Destructive Testing (AIPnD) and the certification of personnel engaged in Leak Detection	ITALY
Roy Elkayam	Enhancing Non-Revenue Water Management: A Data-Driven Approach Using Pressure Zone Water Balance Analysis	ISRAEL	Mark Nicol	High-Speed Transient Detection and Analysis to reduce Burst Rates and Extend Asset Life	SINGAPORE	Ayse Muhammetoglu	Capacity Building of the Turkish Municipalities for Water Losses Management	TURKEY	
	<b>Coffee break</b>			<b>Coffee break</b>			<b>Coffee break</b>		
10:50 to 12:20	<b>LEAK DETECTION 2</b> Chair:			<b>DIGITALIZATION, AI &amp; ML APPLICATIONS 1</b> Chair:			<b>TRAINING AND CAPACITY BUILDING 2</b> Chair:		
	Author	Title	Country	Author	Title	Country	Author	Title	Country
	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	Drew Blackwell	The Florida Water Loss Program: Continuing the Trend of Voluntary WL Training and Technical Assistance Programs	USA
	Andreas Reason Dahl	Integrated radar and ultrasonic pipe scanner for condition assessment of water and wastewater pipes	NORWAY	Raul Navas Martinez	Visión práctica de los gemelo digitales en redes de agua: casos de uso y experiencias reales.	SPAIN	Fabio Garzon-Contreras	Risk allocation in NRW performance-based contracts	COLOMBIA
	Moinak Bnaerjee	Robotic Leak Detection Technology For Water Distribution Pipelines	INDIA	Azim Farghadan	A Coarse-Grained Parallel Paradigm Based on Cellular Automata to Expedite the Hyd. Analysis of Water Networks	IRAN	Joana Cassidy	AGS's journey through the implementation of a Performance Based Agreement in Romania to reduce non-revenue water	PORTUGAL
Thijs Lanckriet	Fiber optic sensing: leak detection method, asset management tool, digital connectivity solution, all of them?	BELGIUM	Fernando Pérez	Strategic and Operational Decision-Making thought the Digitalization of the Water Supply Network in Donostia-S.S.	SPAIN	Juan Escobar Morales	Hacia la definición integral de las metas de reducción de pérdidas de agua	COLOMBIA	
	<b>Lunch</b>			<b>Lunch</b>			<b>Lunch</b>		
13:30 to 15:00	<b>ASSET MANAGEMENT 1</b> Chair:			<b>DIGITALIZATION, AI &amp; ML APPLICATIONS 2</b> Chair:			<b>INTERNATIONAL CASE STUDIES 2</b> Chair:		
	Author	Title	Country	Author	Title	Country	Author	Title	Country
	Jo Parker	The Hole Truth	UK	Yoojin Oh	Evaluating Sampling Techniques for Developing a Failure Prediction Model in Water Pipeline Networks	KOREA	François Figueres	Achievements on NRW reduction: 2 detailed use cases	FRANCE
	Dooil Kim	Residual life assessment using 3D profiles and structural analysis	KOREA	Carlos Marco	Improving leak detection by using digital twin (ArcGIS)	SPAIN	Mehdi B. Arani	Impact of Intelligent Monitoring of the Network System's Effective Parameters' on Leakage and NRW Reduction	IRAN
	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 ILLI=2 by 2028?	SWEDEN
Andreu F. Marquès	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	Antonio Torrecillas	How a British utility improved network management by integrating data from 6,000 sensors into a single platform	SPAIN	
	<b>Coffee break</b>			<b>Coffee break</b>			<b>Coffee break</b>		
15:30 to 17:00	<b>ASSET MANAGEMENT 2</b> Chair:			<b>DIGITALIZATION, AI &amp; ML APPLICATIONS 3</b> Chair:			<b>INTERNATIONAL CASE STUDIES 3</b> Chair:		
	Author	Title	Country	Author	Title	Country	Author	Title	Country
	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
	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
	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
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	Andres Ortega	Control valves for NRW reduction and hydraulic network protection	SPAIN	
17:00 to 18:00	<b>OPEN MEETING of the IWA WATER LOSS SPECIALIST GROUP</b> Activities, initiatives, discussions <i>Non-IWA WLSG members are MOST WELCOME</i>								

ROOM 1			ROOM 2			ROOM 3						
<b>DMA DESIGN &amp; MANAGEMENT</b> Chair:			<b>SMART WATER NETWORKS 1</b> Chair:			<b>INTERNATIONAL CASE STUDIES 4</b> Chair:						
Author	Title	Country	Author	Title	Country	Author	Title	Country				
8:45 to 10:15	Kim Belmans Smart DMA-design with sub-dividing plan : Case Study	BELGIUM	Nigel Lim PUB's Smart Water Analytics Platform – Enhancing Operational Efficiency via Reliable Digital Twin & Advanced Analytics	SINGAPORE	Panagiotis Dimas Estimating water losses and designing reduction strategies in large water supply systems: The case of Athens	GREECE	Cecilia S. Chantada Evolution of Management by DMA – Slow but convinced – From the Pilot to the Strategic Plan	ARGENTINA	Clay Clifton Identifying and Correcting Supply Meter Inaccuracy in Annual Water Loss Audits	USA		
	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	Luiz R. Gravina Pladevall Improving the operational management of water supply systems through GIS integrated with hydraulic modeling	BRAZIL						
	Eyad Sahawneh Operational Challenges of Networks Isolation and DMAs: Establishment under IWS. Case in Jordan	JORDAN	Ramon Dolz NRW control and DMA management through AMI/AMR integration with SCADA	SPAIN	Jaume Roquet Sanchez Balance of 15 years on the annual study of the hydraulic efficiency of the water transport network of ATL	SPAIN						
Coffee break			Coffee break			Coffee break						
<b>PRESSURE MANAGEMENT 1</b> Chair:			<b>SMART WATER NETWORKS 2</b> Chair:			<b>INTERNATIONAL CASE STUDIES 5</b> Chair:						
Author	Title	Country	Author	Title	Country	Author	Title	Country				
10:50 to 12:20	Kate Stanton-Davies The Power of N1	UK	Yaron Geller AMR and water Utilities - technology leads change in management	ISRAEL	Anna Klobut Water balance calculation in HSY (Finland) – lessons learned through a new calculation method	FINLAND	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	Yonatan Rabinovitch Drought Resiliency: Securing Drinking Water Supply in Northern Italy with Satellite Leak Detection	ISRAEL
	D. H. Sánchez-Navarro Optimizing Pressure Management in Intermittent Water Supply Systems	MEXICO	A. Roger Monzonís La inteligencia de negocios como impulsor de la transformación digital para la reducción de ANC	COSTA RICA	Marcelo Depexe Success of a Corporative Program in Water Loss Management in a Large Water and Sanitation Company	BRAZIL						
	Eva Martinez Pressure transient management: Global trends, business case and introduction to a new global partnership program	SPAIN	G. de la Hoz Puentes Valencia Case Study: advanced water efficiency management through technology.	SPAIN	Zhou Sha Feature study of leak-induced vibration	CHINA						
Lunch			Lunch			Lunch						
<b>PRESSURE MANAGEMENT 2</b> Chair:			<b>SMART WATER NETWORKS 3</b> Chair:			<b>INTERNATIONAL CASE STUDIES 6</b> Chair:						
Author	Title	Country	Author	Title	Country	Author	Title	Country				
13:30 to 15:00	Silvio Campolongo Evaluating the best pressure efficiency point	BRAZIL	Jinseok Hyung Development of optimal WDNs design method using genetic algorithm and reliability analysis	KOREA	Ambrose Muhu Thorough assessment of NRW for an effective, data driven campaign against water losses	KENYA	Giuliano Ceseri An innovative approach for quick leakage detection and real-time adaptive pressure control in a PMZ	ITALY	Reza Moasheri Detection of Leaky Areas in a Water Distribution Network Using an Optimization-Based Method	IRAN	Isao Endo Mainstreaming nature into infrastructure: An approach to integrating nature-based solutions in infrastructure design	PHILIPPINES
	Adolfo Cuesta Efficiency in the water cycle through Asset management systems	SPAIN	M. Clemente Lloscos GO Smart Meter Networks Evolution Since 2006	SPAIN	Ricardo Cobacho NRRL: Practical aspects and influencing factors	SPAIN						
Coffee break												
15:30 to 16:30	<b>CLOSING CEREMONY</b>											
<b>WATERLOSS 2024 CONFERENCE GALA DINNER</b>												