

**5<sup>th</sup> International Conference  
on Water Economics, Statistics and Finance  
International Conference  
on Rethinking Treatment with Asset Management**

**22-24 SEPTEMBER 2021  
PORTO · PORTUGAL**



**22<sup>nd</sup> September**

**Parallel Sessions 1 A & 1 B**

**1 A - RTAM - Room H**

**Chair: Bénédicte Rulleau (INRAE, France)**

*Moving towards energy neutrality by optimizing the energy mix in the water sector: the INOVA case study - A. Reis (INESC Coimbra / Scubic, Portugal)*

*Condition assessment and risk analysis for decision support on rehabilitation investments. Application to AdDP water tanks - E. Vivas (H2OPT, Portugal)*

*Towards energy and costs efficiency: the analysis and control of discharge pumps in wastewater treatment plants - M. Alão (Scubic, Portugal)*

*A well-tested approach for water-energy diagnosis to improve efficiency in urban water systems - D. Loureiro (LNEC, Portugal)*

16:00 - 17:00 60 min.

**1 B - 5<sup>th</sup> WESF - Auditório Magno**

**Chair: Francesc Hernandez (Un. Valencia, Spain)**

*A GIS Tool for Assessing the Condition, Risk and Rehabilitation Costs of Sanitary Sewer Systems - L. Nicolau (Á. do Norte, Port.)*

*SIGAME - an application that allows dynamic and always up-to-date knowledge of water supply and sanitation assets - L. Nicolau (Águas do Norte, Port.)*

*On the use of machine learning algorithms to model and reduce energy costs of water supply systems - K. Bastos (Univ. Aveiro, Portugal)*

*Water quality prediction based on Naïve Bayes algorithm - M. Ilic (University of Novi Sad, Serbia)*

**Parallel Sessions 2 A & 2 B**

**2 A - RTAM - Room H**

**Chair: Alexandra Cunha (ERSAR, Portugal)**

*A panoramic view of values in the recent Brazil's sanitation framework - J. de Paula (IPEA, Brazil / IST - Un. Lisboa, Portugal)*

*The Water Safety Plan of the m. of Porto as a new framework for managing the utility's water supply operations and assets - S. Garcia (AEdPorto, Port.)*

*The Role of Policies, Institutions and Regulation in the Capverdean Water and Sanitation Sector - E. Fernandes (IST - Un. Lisboa, Portugal)*

*The challenges of energy optimization in Águas do Centro Litoral, SA - S. Jorge (Águas do Centro Litoral, Portugal)*

17:00 - 18:00 60 min.

**2 B - 5<sup>th</sup> WESF - Auditório Magno**

**Chair: João Simão Pires (PPA / UCL, Portugal)**

*Economic impacts of Rainfall-Derived Inflow/Infiltration in sewage networks - A Sousa (FEUP, Portugal)*

*The use of variable speed drives to reduce energy and costs in water supply systems - analysis, discussion, and validation - L. Lopes (U. Aveiro, Port.)*

*Efficiency of Water Sanitation Service Investments vis-à-vis Universal Access - W. Narzetti (State University of Santa Catarina, Brazil)*

*Efficiency benchmark of drinking water service providers in Portugal - A. Amaral (Inst. Sup. Eng. Coimbra, Portugal)*

## Parallel Sessions 3 A &amp; 3 B

## 3 A - RTAM - Room H

Chair: M<sup>a</sup> Céu Almeida (LNEC, Portugal)*Undue inflows approach for systems prioritizing* - **N. Medeiros** (EPAL, Portugal)*A Selection Method to Optimize Preventive Maintenance Tasks in Water Facilities* - **V. Hernandez** (Univ. Valencia, Spain)*Prioritization method based on risk in a Water Supply System* - **I. Cardoso** (FEUP / Águas do Douro e Paiva, Portugal)*Asset Management and Circular Economy: A Perfect Binomial* - **L. Castellet** (ILD Water - Univ. Valencia, Spain)*Rethink. sewer condition assess.: the importance of expert-based eval. and benefits of an action related approach* - **F. Kretschmer** (BOKU, Austria)*Infiltration and Inflow Reduction Master Plan – Small systems at Northwest Portugal Case Study* - **P. Cruz** (Águas do Alto Minho, Portugal)

11:00 - 12:30

90 min.

3 B - 5<sup>th</sup> WESF - Auditório Magno

Chair: Lledó Castellet (Univ. Valencia, Spain)

*Project risks influence on water supply and sanitation sectors' financing: a case-study on the World Bank database* - **I. Machete** (IST - U. Lisboa, Port.)*Assuring Long-term Sustainability via Asset Management for the EU Financed Infrastructure – The Romanian Case* - **A. Boer** (BDO, Romania)*How to replace ineffic. assets with no inv. efforts. Now water comp. don't have to take the risk. They just have to make a RISCA* - **P. Bastos** (AdN, P.)*From a Millennium to a Sustainable water and sanitation development: Were we there already?* - **M. Pereira** (IST - Un. Lisboa, Portugal)*Internal and integrated workforce for the water supply and wastewater treatment tariff: AdP – Águas de Portugal case* - **D. Mendes** (AdP Valor, Port.)

## Parallel Sessions 4 A &amp; 4 B

## 4 A - RTAM - Room H

Chair: Rui Cunha Marques (IST, Portugal)

*Water infrastructure cybersecurity resiliency* - **R. Braga** (Águas de Portugal, Portugal)*Asset management platform and decision support "OTIMA"* - **L. Nicolau** (Águas do Norte, Portugal)*CAN - Alerts and Notifications Center: a disruptive approach for water utilities* - **D. Silva** (Águas do Norte, Portugal)*Improving the Investment Planning in a Water Supply System* - **L. Ramos** (FEUP / Águas do Douro e Paiva, Portugal)

16:00 - 17:00

60 min.

4 B - 5<sup>th</sup> WESF - Auditório Magno

Chair: Francisco Lopes (Águas do Norte, Portugal)

*Water distribution costs optimization with Smart Digital Twins: a Case study* - **B. Abreu** (SCUBIC, Portugal)*The i-SMART Management Model* - **P. Perdigão** (Indaqua, Portugal)*H2Porto – from unstructured data to real time decision making central tool* - **P. Vieira** (Águas e Energia do Porto, Portugal)*Increasing the Competitiveness of Sanitation Services with Intelligence Process* - **E. Santos** (Sabesp, Brazil)

## Parallel Sessions 5 A & 5 B

### 5 A - RTAM - Room H

**Chair: Cristina Santos (FEUP, Portugal)**

*Optimizing Water Infrastructure Replacement: an Approach from the Circular Economy* - **L. Castellet** (ILD Water - Univ. Valencia, Spain)

*Retrofitting of the Montemor-o-Velho WWTP: an Integrated Solution in the Circular Economy* - **H. Sabino** (CTGA, Portugal)

*Porto WWTP as resource factories, from a circular economy perspective* - **F. Fernandes** (Águas e Energia do Porto, Portugal)

*Use of Recycled Water in the City of Lisbon* - **F. Ferrerira** (IST - Un. Lisboa, Portugal)

17:00 - 18:00 60 min.

### 5 B - 5<sup>th</sup> WESF - Auditório Magno

**Chair: Teodor Popa (Comp. Apa Brasov, Romania)**

*Circular econ. in water manag.: facing the problem of nitrates pollution in groundwater bodies* - **F. Hernandez-Sancho** (ILD Water - U. Valencia, Spain)

*Water reuse for vine irrigation – from research to full-scale implementation* - **Y. Poussade** (Veolia, France)

*Alignment between the Urban Water Sector Mission and the SDGs: the Management Model Effect in Portugal* - **D. Arezes** (EEG - Un. Minho, Portugal)

*Implementing a Circular Economy Model in the Water Sector at Local Level* - **L. Castellet** (ILD Water - Univ. Valencia, Spain)

24<sup>nd</sup> September

Parallel Sessions 6 A & 6 B

**6 A - RTAM - Room H**

**Chair: João Vilaça (AdDP, Portugal)**

*Roadmap of the renovation of Vila Real WWTP towards energy neutrality* - **M. Campos** (Águas do Norte, Portugal)

*Assessing unacceptable intermittent saline inflows in urban water systems* - **R. Brito** (LNEC, Portugal)

*Cost-benefit analysis of enhancing the control of pharmaceutical compounds in conventional wastewater treatment plants* - **R. Ribeiro** (LNEC, Portugal)

*Excess inflow in wastewater treatment plants: environmental and economic aspects* - **C. Santos** (FEUP, Portugal)

*Reliability and energy performance assessment of two urban wastewater treatment plants* - **J. Cassidy** (AGS, Portugal)

*Nitrogen treatment optimization and associated energy consumption reduction* - **M. Inizan** (Hach, France)

11:00 - 12:30  
90 min.

**6 B - 5<sup>th</sup> WESF - Auditório Magno**

**Chair: Ana Camanho (FEUP, Portugal)**

*Public-private partnerships – a risk approach in the water sector* - **S. Lima** (ISCTE - IUL, Portugal)

*Guidelines to enhance infrastructural asset management in water utilities: the Portuguese regulator's perspective* - **A. Sebastião** (ERSAR, Portugal)

*Benchmarking: a multi-stakeholder tool to continuously improve water services* - **P. Dane** (EBC Foundation, The Netherlands)

*Optimal number and location of pressure sensors in water distrib. networks using a multi-objective optimization methodology* - **B. Ferreira** (IPS, Port.)

*Incentives for the development of water supply and sanitation systems for poor families* - **D. Narzetti** (IST - Un. Lisboa, Portugal)

*Procurement Model Selection for Water Public-Private Partnership Projects in China* - **W. Pu** (IST - Un. Lisboa, Portugal)

Parallel Sessions 7 A & 7 B	
14:00 - 15:00	60 min.
	<b>7 A - RTAM - Room H</b> <span style="float: right;"><b>Chair: Ana Cláudia Tomás (AdDP, Portugal)</b></span>
	<i>Cost and Benef. of Green Stormwater Cont. Meas.: taking into account the multifunct. and the multi-actors maintenance</i> - <b>B. Rulleau</b> (INRAE, Fr.)
	<i>Linking safe water supply to catchments' risk ass. and water treatment – a case study based on AdDP asset management</i> - <b>L. Ramos</b> (ISEP / AdDP, P.)
	<i>Probabilistic short-term water demand forecasting with application in water storage optimization</i> - <b>J. Kley-Holsteg</b> (U. Duisburg-Essen, Germany)
	<i>Probabilistic Intraday Wastewater Treat. Plant Inflow Forecast Utilizing Rain Forecast D. and Extern. Flow Measurements</i> - <b>B. Sonnenschein</b> (UDE, Ger.)
	<b>7 B - 5<sup>th</sup> WESF - Auditório Magno</b> <span style="float: right;"><b>Chair: Lígia Costa Pinto (Un. Minho, Portugal)</b></span>
	<i>Discussing improvements to an indicator-based approach for the capital investment planning of infrastructure assets</i> - <b>P. Costa</b> (FEUP / AdDP, Portugal)
	<i>Digital transformation in water and energy utilities – Porto Case</i> - <b>P. Vieira</b> (Águas e Energia do Porto, Portugal)
	<i>Customer satisfaction in Portuguese drinking water services</i> - <b>D. Ferreira</b> (IST - Un. Lisboa, Portugal)
	<i>Water data management: a fit-for-purpose approach</i> - <b>J. Ferreira</b> (DouroECI, Portugal)
Parallel Sessions 8 A & 8 B	
15:00 - 16:30	90 min.
	<b>8 A - RTAM - Room H</b> <span style="float: right;"><b>Chair: Cristina Delerue (ISEP, Portugal)</b></span>
	<i>Non-Thermal Plasma Treatment for Pharmaceuticals Removal from Municipal Wastewater</i> - <b>E. Surra</b> (Requimte / ISEP, Portugal)
	<i>Biochar as a sustainable particulate electrode in a 3D electrochemical process to remove carbamazepine from aqueous sol.</i> - <b>S. Figueiredo</b> (ISEP, P.)
	<i>Extracellular polymeric substances recovered from aerobic granular sludge - a natural mat. for different applications</i> - <b>C. Amorim</b> (CBQF - UCP, Port.)
	<i>Microalgae-bacterial granular systems able to treat marine aquaculture water streams</i> - <b>C. Amorim</b> (CBQF - UCP, Portugal)
	<i>Microalgae for Paper Industry Effluents Remediation</i> - <b>I. Silva</b> (FEUP, Portugal)
	<b>8 B - 5<sup>th</sup> WESF - Auditório Magno</b> <span style="float: right;"><b>Chair: Rita S. Brito (LNEC, Portugal)</b></span>
	<i>Performance assessment of water services in Brazilian municipalities: an integrated view of efficiency and access</i> - <b>A. Camanho</b> (FEUP, Portugal)
	<i>Combining data clustering and stratified sampling for selecting customer's location for smart meter installation</i> - <b>D. Loureiro</b> (IST - U. Lisboa, Port.)
	<i>Valuing urban drainage assets – aligning financial and technical procedures</i> - <b>M. Almeida</b> (LNEC, Portugal)
	<i>A logistic network approach for optimizing sludge management under a circular economy perspective</i> - <b>A. Henriques</b> (INESC TEC - FEUP, Portugal)
	<i>Energy efficiency of drinking water treatment process and its drivers using the StoNED approach</i> - <b>M. Molinos-Senante</b> (Pont. Un. Catolica / Chile)