Preservation of water resources and improvement of resilience against climate change
València, 7 April 2019
> 2280 employees

368 WWTPs

21 DWTPs
CIRCULAR ECONOMY

Raw materials and resources
- Reduction
- Optimization
CIRCULAR ECONOMY

Reuse treated wastewater.

Waste
- Reduction
- Reuse-Recycle
- Recovery
DRINKING WATER PRODUCTION

Pretreatment → Coagulation → Floculation → Sedimentation → Filtration → Chlorination

Agriculture → Sludge → Agriculture
OPTIMIZATION – LEAK DETECTION
OPTIMIZATION – LEAK DETECTION

Innovative ways of communicating with customers
Global Omnium
Drinking Water
Production

Advanced Network
Operation
Drought Emergency
Plans
Urban Drainage
NEXUS INTEGRA
Waste Water
Treatment
Environmental
monitoring
Awareness
Call to action

+ 780 severe leakages per month
+ 1.850 regular leakages per month
+ 330.000 M3/year saved for customers
5,2 hm$^3$/year
DROUGHT EMERGENCY PLANS

<table>
<thead>
<tr>
<th>Basin Drought Status</th>
<th>Objective</th>
<th>Type of Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Planning</td>
<td>Strategic</td>
</tr>
<tr>
<td>Pre-alert</td>
<td>Control-Information</td>
<td>Tactic</td>
</tr>
<tr>
<td>Alert</td>
<td>Conservation</td>
<td>Tactic</td>
</tr>
<tr>
<td>Emergency</td>
<td>Restriction</td>
<td>Emergency</td>
</tr>
</tbody>
</table>
INTEGRATED CATCHMENT MODELS FOR URBAN DRAINAGE INVESTMENT PLANNING

Global Omnium
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Drought Emergency
Plans

Urban Drainage
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Residential complex Torre en Conill, Bétera

Sustainable Urban Drainage Systems (SUDS)

MAXIMUM FLOOD LEVELS
T = 15 YEARS
Global Omnium
Drinking Water Production
Advanced Network Operation
Drought
Emergency Plans
Urban Drainage
NEXUS INTEGRA
Waste Water Treatment
Environmental monitoring
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Call to action
Sewer inspection and cleaning
Control of discharges: sampling campaigns and instrumentation
Control of discharges: sampling campaigns and instrumentation
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WASTEWATER TREATMENT

Pretreatment → Primary Treatment → Secondary Treatment → Tertiary Treatment → Disinfection

Sludge → Energy use Agronomic use

GO, Spain, 2018:
- P removal
- N removal
- 282 Hm³
- 2,68 millions i.e.

Global Omnium
Drinking Water Production
Advanced Network Operation
Drought Emergency Plans
Urban Drainage
NEXUS INTEGRA

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Drinking Water Production
Advanced Network Operation
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NEXUS INTEGRA Waste Water Treatment
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PORTABLECRAC
Portable solution for the electrochemical regeneration of activated carbon
LIFE ECODIGESTION
Automatic dosage of organic waste to maximase production of Biogas
TRUST 2030
Sustainable urban transition through metrics based on big data tools
LIFE BACTIWATER
An environmental cost-effective activation treatment for biological failures in WWTP
LIFE NEWEST

New urban wastewater treatment for the elimination of P based on natural coagulants
LIFE LIBERNITRATE
Responsible reduction of nitrates in the comprehensive water cycle
ANTIMICROBIANOS
Surface Functionalization for Biological Control in Water Resources Management Systems
CONSTRUCTED WETLANDS TO NATURALIZE WWTP EFFLUENTS
CONSTRUCTED WETLANDS TO NATURALIZE WWTP EFFLUENTS
- Research and transfer of results.

- Improves the academic training and specialization of the students.
Scholarships for the completion of master's degree projects:

Study of viable and effective alternatives for an environmental and integral recovery of the lower course of the Serpis River
Scholarships for the completion of master's degree projects:

Application of a heuristic optimization model for improving efficiency in water distribution networks
RECOVERY
Preservation (public-private) of natural heritage
Collaboration with NGO

Restoration of the Turia river
RECOVERY
Preservation (public-private) of natural heritage
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Restoration of the Turia river

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Reduce the presence of urban solid waste
RECOVERY
Preservation (public-private) of natural heritage
Collaboration with NGO

Restoration of the Turia river

Eliminate invasive species, such as sugarcane (Arundo donax)
RECOVERY
Preservation (public-private) of natural heritage
Collaboration with NGO

Restoration of the Turia river

Regenerate the primeval riverbank forest with protected species.
Restoration of the Turia river

Monitoring of chemical and biological quality parameters.
RECOVERY
Preservation (public-private) of natural heritage
Collaboration with NGO

Otter Project
(Lutra lutra)
RECOVERY
Preservation (public-private) of natural heritage
Collaboration with NGO

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Thank you for your attention
Diapositivas de reserva
WHO ARE WE?

María Pedro-Monzonís

Civil engineer:
- Master’s Degree in Hydraulic Engineering and Environment
- PhD in water and environmental engineering
- Expert in water resources management and planning
- R&D in Global Omnium within the area of drinking-water supply

María Peña García

Chemical engineer:
- Master’s Degree in Environment
- Expert in mitigation and adaptation strategies to climate change.
- R&D in Global Omnium with the area of waste water.
- Specialist in artificial wetlands.
Who are we?

Global Omnium

- 8.7 millions inhabitants (drinking water and wastewater)
- More than 685,000 smart meters in 36 municipalities
- 368 WWTP managed
- More than 17 million kWh cogenerated in 2018 from the digestion of WWTP sludge