



ACCELERATING THE GREEN DEAL

**through integrated smart
environmental technologies
and solutions**

**SUEZ presents its contribution articulated
around 3 priorities**

SUEZ's priorities contributing to the Green Deal's ambition



Green deal ambition

Water quality

- Reducing pollution emissions to water
- Tackling presence of pharmaceuticals in the environment
- Preserving and restoring ecosystems and biodiversity

Industrial water efficiency

- Reducing pollution emissions to water
- Maintaining European industry's global competitiveness

Air quality

- Reducing pollution emissions to air
- Preserving Europe's natural capital

Preserving & restoring the environment to protect our health and improve our quality of life



Water quality

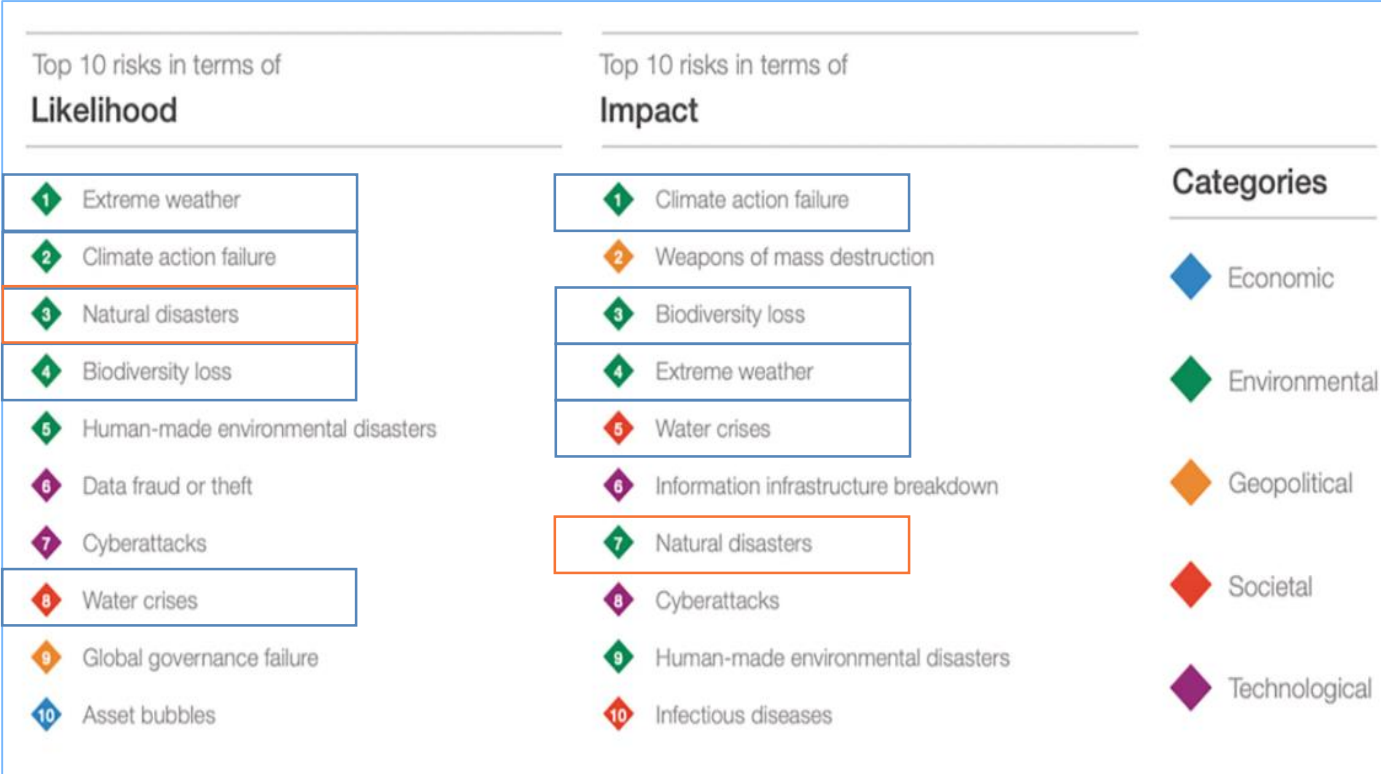


Water quality – state of play

- **40% of surface waters** (rivers, lakes and transitional and coastal waters) are in **good ecological status** or potential, and **only 38%** are in **good chemical status**¹
- In 2017, **60 % of water abstracted in Europe** was returned to the environment with a certain level of physical or chemical alteration²
- **14% total population of Europe** under water stress conditions during summer
- Overall, in Europe, **water reuse** represented **only 2.4% in 2015** of the total volume of treated effluents

¹ European Environment Agency – water quality database

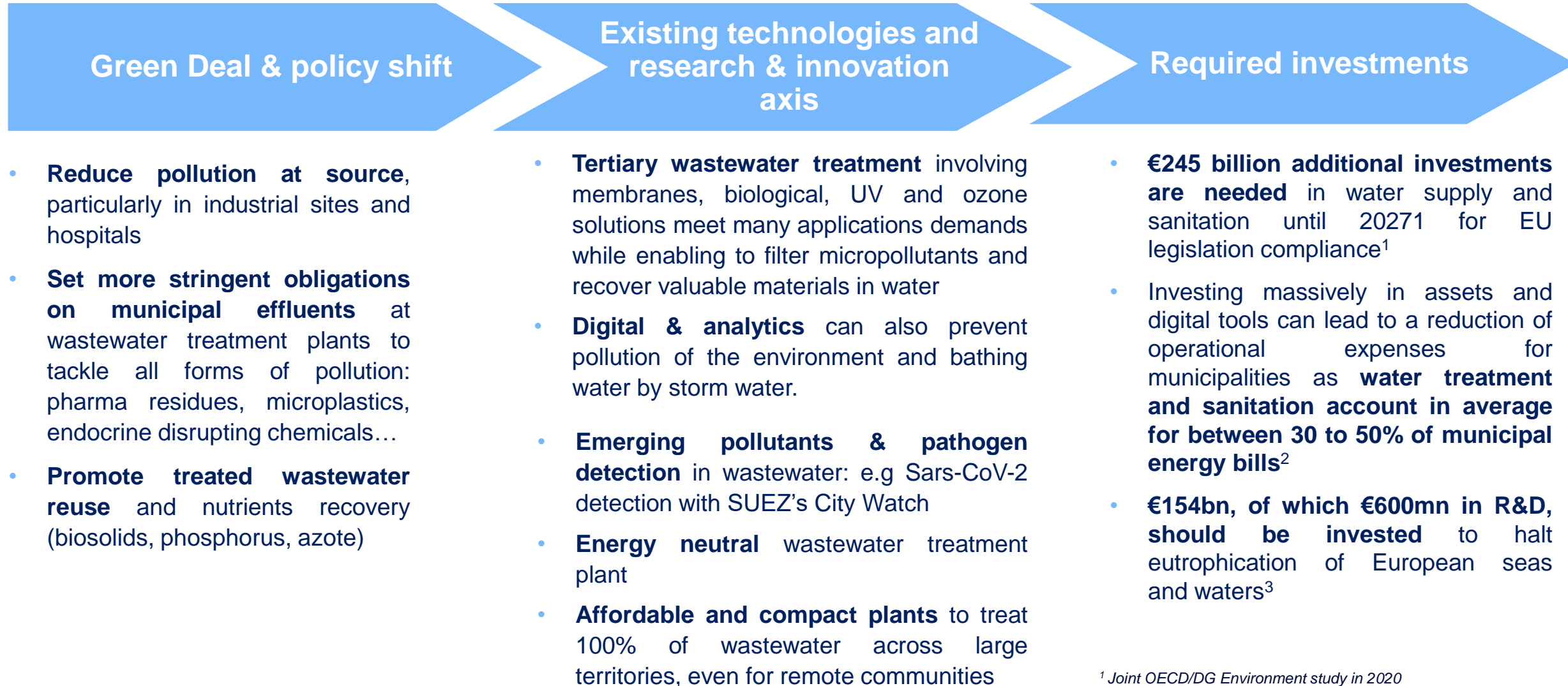
² European Environment Agency – water quality database



WEF annual report – Global risks 2020

Suez analysis: out of 10 key risks identified, half of them are very directly or directly linked to water availability or quality

Water quality – fighting pollution in the environment while tapping the potential of municipal water



¹ Joint OECD/DG Environment study in 2020

² IEA World Energy Outlook 2016

³ Target 8 of Mission Starfish 2030 report – September 2020)



100% water reuse, 100% circular... with the Biofactory

SPAIN – THE 21ST CENTURY WASTEWATER TREATMENT PLANT TO ADDRESS NEW CHALLENGES AND PRODUCE RESOURCES



- The Biofactory plant of Granada reuses **100%** of the treated wastewater by transforming it into **new resources**, such as biogas to generate electricity and heat, or sludge into fertilizers for local farmers
- The treated wastewater is also **reused for different usages**, hence offering alternative water to freshwater abstraction, for local needs (agri, urban, industry).

Innovation in progress...

Coordinated by SUEZ, LIFE NIMBUS project aims at demonstrating a biological biogas methanation process to produce biomethane in an urban WWTP with the sufficient quality to be used as biofuel. **€1M funded by EU LIFE program for a project duration of 3 years (2020-2023).**



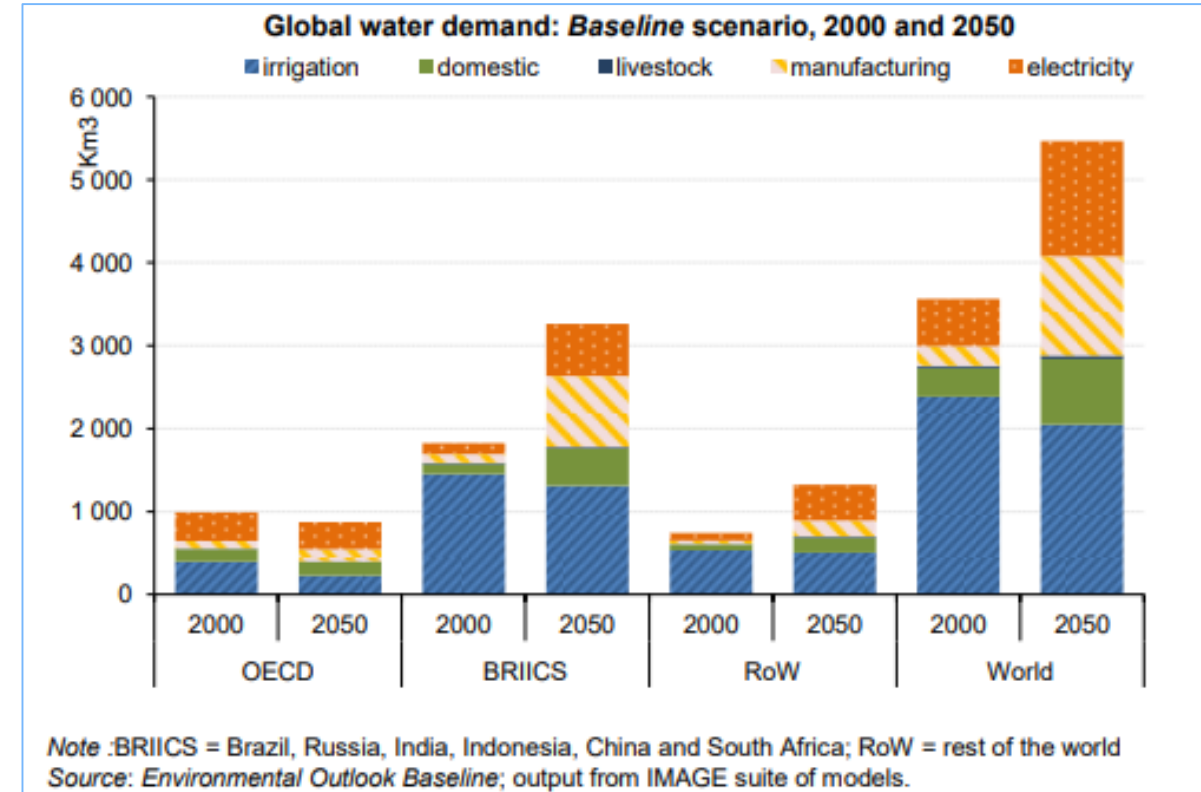
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Industrial water quality

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Industrial water efficiency – state of play

- Global trends forecast **55% worldwide growth in water use by 2050**, due to growing demands from manufacturing, thermal electricity generation, agriculture and domestic use¹
- “[...] **nearly 80% of the jobs constituting the global workforce are dependent upon having access to an adequate supply of water and water-related services, including sanitation**”. Irina Bokova, Director-General of Unesco*
- In Europe, **energy production accounts for 18% of total water use and 11 % for manufacturing industries**. The forecast indicates a growth until 2050

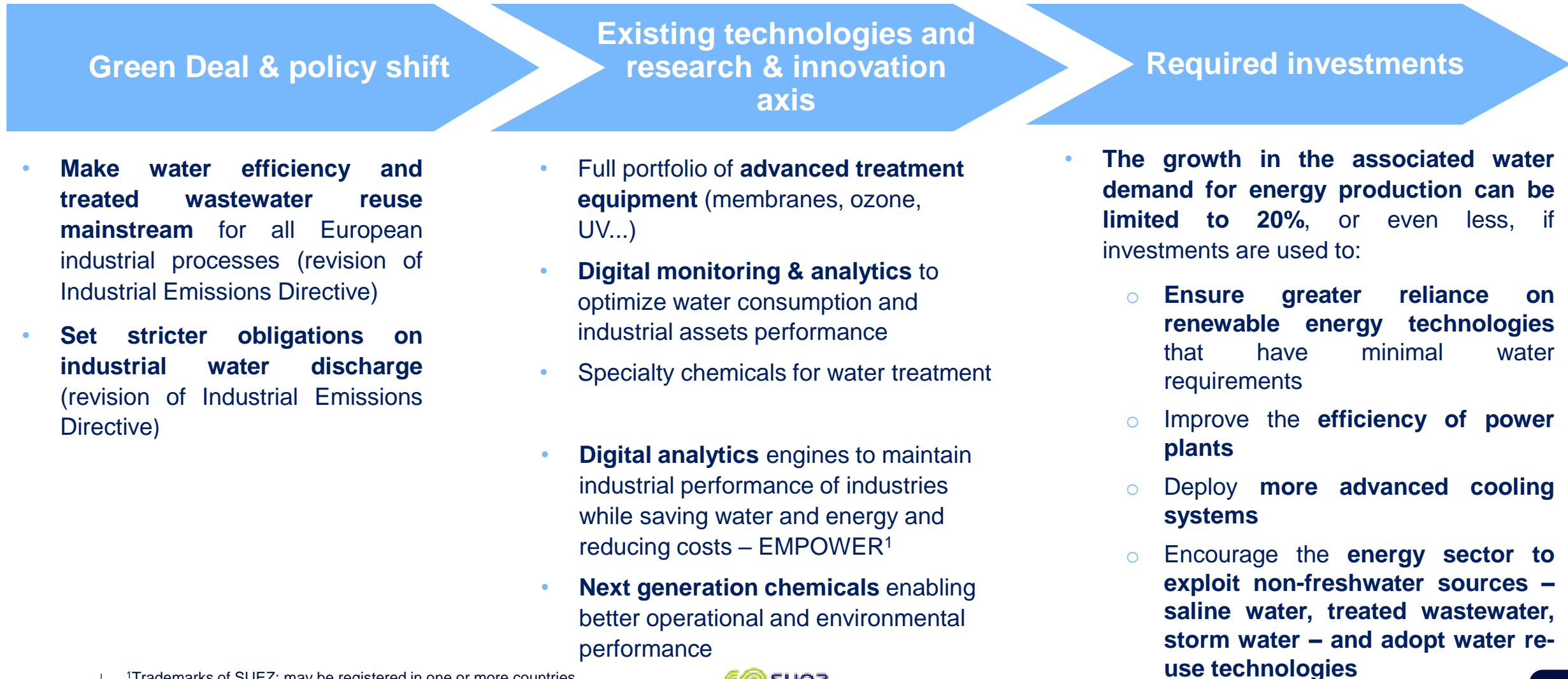


¹ The OECD Environmental Outlook to 2050 (OECD, 2012)

² UN Water report 2016: Water and Jobs.

³ The European Environment – state and outlook 2020 (EEA, 2019)

Industrial water efficiency – improving industrial water footprint for long-term competitiveness



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Manufacturing efficient water treatment technologies... in Europe

HUNGARY – EXPANDING PRODUCTION CAPACITY TO MEET DEMAND FOR PERFORMING WATER TREATMENT SOLUTIONS

- SUEZ is investing 30 million euros to expand capabilities in its flagship Hungarian plant in Oroszlany producing ultrafiltration membranes
- 850 employees working in the plant
- The production is sold in Europe and worldwide to better meet stringent wastewater discharge regulations, and to conserve freshwater supplies through water reuse

Innovation in progress...

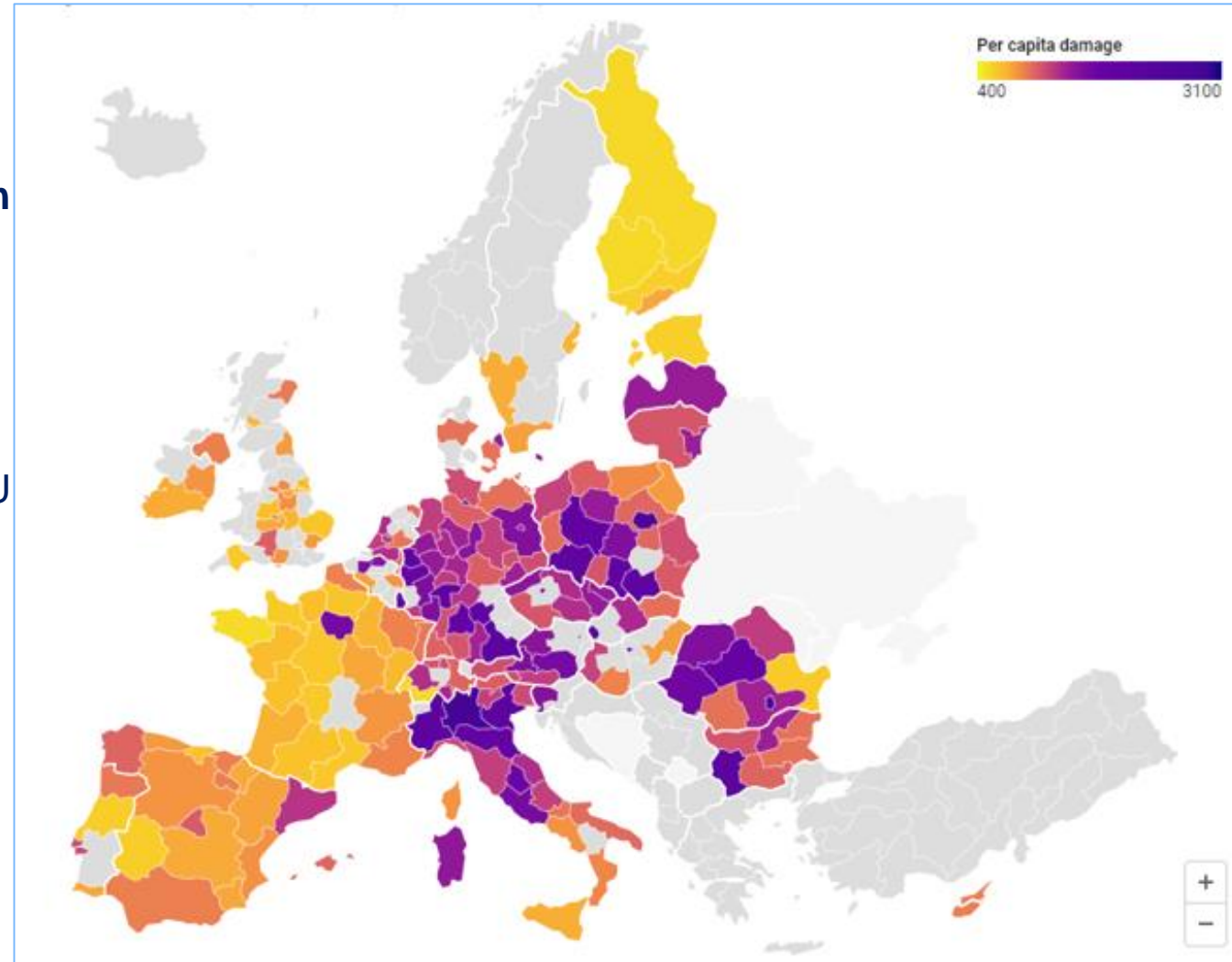
SUEZ is part of the H2020 Ultimate project promoting “Water Smart Industrial Symbiosis”. Deployed on 9 large-scale demonstrations across Europe (agri-food, beverages, heavy chemical/petrochemical, biotech industries). The objective is to reuse wastewater, exploit energy and recover materials. **The total project is worth €13.4M and runs over 3 years (2020-2023).**



Air quality

Air quality – state of play

- **400,000 premature deaths per year due to air pollution across the continent¹**
- **93% of Children (< 15y) breathe a polluted air in the world²**
- **Almost 20 % of the EU's urban population lives in areas with concentrations of air pollutants above at least one EU air quality standard³**
- **77 % of the EU-28 urban population is exposed to PM2.5 concentrations above the WHO Air Quality Guidelines value**
- Reductions in air pollution explain up to **15%** of recent GDP growth in Europe⁴



**Cost per capita of air pollution in European cities –
CE Delft report for EPHA – October 2020**

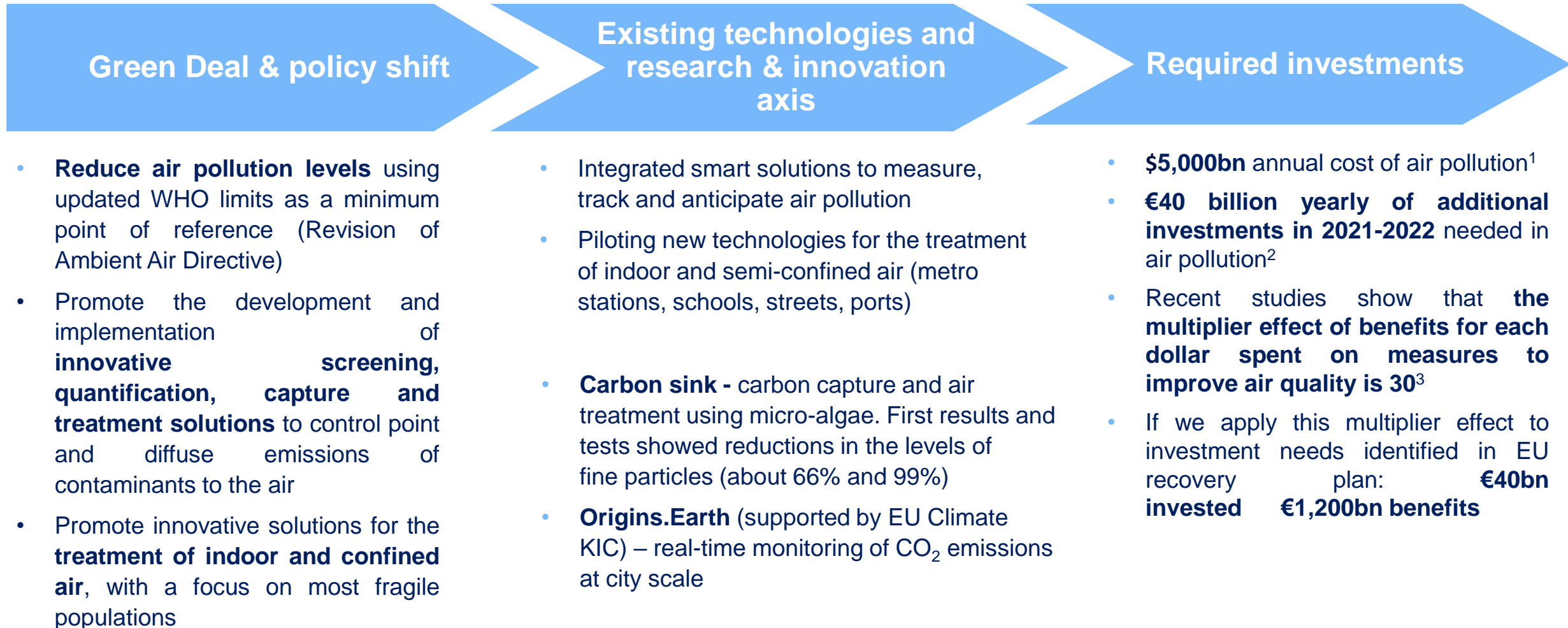
¹ European Environment Agency – Air quality in Europe report 2020

² World Health Organization – Air pollution and child health: prescribing clean air, 2018

³ European Environment Agency – Air quality in Europe report 2020

⁴ European Environment Agency – Economic cost of air pollution 2019

Air quality – improving ambient air to positively impact quality of life



¹ The cost of air pollution : strengthening the economic case for action, World Bank, 2016

² EU recovery proposal May 2020 ³ European Environment Agency – Air quality in Europe report 2019

⁴ Air quality: a breath of fresh air, Barclays, 2020



Improving air quality where our children spend most of their time... school

FRANCE – IMPROVING AIR QUALITY IN SCHOOL PLAYGROUNDS

- Our innovation Combin'air captures a large range of air pollutants such as the **fine particles**, **nitrogen dioxide**, the volatile organic compounds to purify the air in the most sensitive areas such as schoolyards
- Ongoing deployment in various schools in France

Innovation in progress...

As part of the Green Deal calls (January 2021), **SUEZ** submitted as leader the **Air4Health** project promoting innovative air quality monitoring networks and tools for better health in urban areas. The project is worth €8.4M.



SUEZ's innovation trends








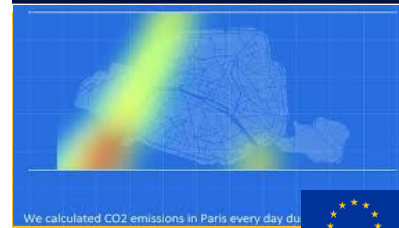



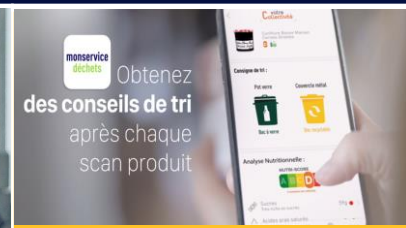


Innovation – Part of SUEZ's DNA and the Green Deal backbone

SUEZ'S INNOVATION TRACK-RECORD

- During 2019 campaign, SUEZ, with various partners, submitted 33 projects to different funding schemes: Horizon2020, EIT Raw Materials and LIFE Programme. **15 of those projects have been selected for a total budget of €110M:** 11 in water, 4 in waste in partnership with some of the most relevant European Universities and Research and Technology Organisations (RTOs).
- In January 2021, **SUEZ submitted 22 projects to the EU Green Deal Calls.**

Overview of some SUEZ's R&I projects & customer innovative solutions

<h2>Emerging pollutants & pathogens</h2>  <p>Covid City Watch Wastewater-based epidemiology - SARS-CoV2 monitoring in sewage network</p> <p>collaboration with the Joint Research Center</p>	<h2>PathoCERT</h2>  <p>Rapid detection methods for pathogens in water</p> <p>On-going H2020 funding</p>	<h2>Project ReLieVe</h2>  <p>Electric vehicles Li-ion batteries recycling technologies</p> <p>Ongoing, EIT Raw Materials funding</p>	<h2>Valomag</h2>  <p>Permanent Magnet dismantling and recycling</p> <p>Ongoing, EIT Raw Materials funding</p>	<h2>AfterBiochem</h2>  <p>Anaerobic fermentation of biomass to produce chemicals (pharma, make-up)</p> <p>On-going BioBased Industries</p>	<h2>Sludge Advanced</h2>  <p>Blockchain technology applied to biosolids traceability</p>
<h2>Green energy</h2>  <p>NIMBUS (ongoing, LIFE) Biological methanation pilot plant</p> <p>On-going LIFE funding</p>	<h2>Origins</h2>  <p>Real-time monitoring of CO2 emissions at city scale</p> <p>Supported by Climate KIC</p>	<h2>Carbon sink</h2>  <p>Carbon capture and utilisation using micro-algae</p>	<h2>Calm Network</h2>  <p>Reducing burst water mains thanks to AI combined with high frequency pressure sensors</p>	<h2>Photo-meter</h2>  <p>Computer vision applied to automated meter reading</p>	<h2>monservicedéchets.com</h2>  <p>Packaging barcode scanning App to support the sorting process at home</p>



SUEZ's recommendations on investment drive

SUEZ's recommendations on investment drive

Water quality & industrial water

- **€220.6bn** until 2030 to halt eutrophication of seas and water and protect water bodies ¹
- **Earmark €900m** from EU innovation funds for R&I in water quality for the next 5 to 7 years **of which €150m** directed to circular approaches in wastewater treatment plants

Air pollution

- Equally important, the intensity of investments for air quality and pollution **should be at least the same if not higher.** WHO value limits should be enforced.
- **Earmark €1.5bn** from EU innovation funds for R&I in air quality for the next 5 to 7 years