



THE CONTEXT

Digital Textile Printing (DTP) has drastically changed the way textiles are printed, and everything happened in the last ten years moving from large batches of standardized drawings to (up to) one square meter large' lots, where every piece of the textile substrate may have different patterns and colours than the next one. Nowadays, in the Como textile district (and the same trend occurs in other European countries), **more than 60% of the production volume** is carried out using DTP.

Unfortunately, DTP requires the fabric to be **fully pre-treated using urea** in order to let the ink properly penetrate. Urea is then completely washed-out and the resulting **wastewater is extremely rich in nitrogen**, remarkably overloading the existing wastewater treatment plants.

THE LIFE DeNTreat SOLUTION

The LIFE DeNTreat project (LIFE16 ENV/IT/000345) comes with an actual answer: **decentralised pre-treatment modules based on the ANAMMOX** (ANaerobic AMMonium Oxidation) microbial process are expected to sustainably abate the ammonium pollution where it is created. The project, over a three-years long path, will design, develop and demonstrate an on-site wastewater treatment module installed in Stamperia di Cassina Rizzardi premises pre-treating nitrogen pollutants from selected points of discharge in order to complement the existing (and traditional) Lariana Depur wastewater treatment plant (WWTP).



EXPECTED OUTCOMES AND RESULTS

The developed equipment will allow to:

- obtain a residual N content below 100 mg/l in the wastewater released in the collection system
- easily accomplish Directive 91/271/EEC art.5 requirements asking to ensure that the minimum percentage of reduction of the overall load entering all urban WWTP in a given area is at least 75% for total nitrogen produced
- assure the respect of residual nitrogen concentration in WWTP discharges, to be maintained below 10 mg/l enabling
- an actual saving of up to 40% in investment and operational costs
- a reduction of the N₂O emissions during biological wastewater treatment to less than 20% of the currently adopted technologies
- an abatement of the sludge produced as a result of the nitrogen abatement process to less than 25% of the currently adopted technologies.

PROJECT REFERENCES:

LIFE16 ENV/IT/000345

Locations:

- Como, Italy (Demonstrator installation site)
- Braga, Portugal
- Brussels, Belgium

Partners:

- Lariana Depur S.r.l. (IT, Coordinating Beneficiary)
- Politecnico di Milano (IT, Partner),
- Stamperia di Cassina Rizzardi S.p.a. (IT, Partner)
- CITEVE - Centro Tecnológico Industrias Têxtil Vestuário Portugal (P, Partner)
- EURATEX - European Apparel and Textile Confederation (BE, Partner)

Duration: 01-JUL-2017 to 30-JUN -2020

Total project budget: € 1,391,893

Project website: www.life-dentreat.eu

Project Coordinator

Project Partners

