



PERSONAL INFORMATION

Andrea Tilche



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Sex M | Date of birth 19/10/1953 | Nationality Italian

PERSONAL STATEMENT

WORK EXPERIENCE

14/3/2023 - now

**Contract Professor**

University of Bologna (Italy)

- Teaching assignment for the course CLEAN TECHNOLOGIES FOR ENERGY TRANSITION [cod. 95943] - [Module 2, in English], within the international Master Course of Engineering for the Environment and the Territory

**Business or sector** Higher education

16/3/2023 – 30/6/2023

**Senior Scientist**

Centro Euromediterraneo sui Cambiamenti Climatici – European Institute for Economics and Environment, Milan (IT)

- Short-time contract for a study and reporting activity of an international program of the Consortium on Climate Aligned Trade (C-CAT) to orient and support the evidence of climate aligned trade policies in G7 communiques

**Business or sector** Research – Public Administration

10/5/2022 – 31/12/2022

**Member of the Minister's Technical Mission Group**

Ministry of Sustainable Infrastructures and Mobility, Rome (IT)

- Charged as high-competence expert on climate change issues at the Technical Mission Group supporting the Minister
- Member of STEMI (Structure for the Ecological Transition of Mobility and Infrastructures)

**Business or sector** Public Administration

6/5/2021 – 10/5/2022

**Member of the Minister's Technical Secretariat**

Ministry of the Ecological Transition, Rome (IT)

- Expert of climate change issues within the Technical Secretariat directly supporting the Minister

**Business or sector** Public Administration

- 1/4/2019 - now
- Adjunct Professor**  
NTNU, the National Technical University of Norway, Trondheim (Norway)
- To provide seminars on climate change science and policy, and on the transition to a decarbonised sustainable society for all staff and students
  - To advise the Department of Environmental Engineering and the Sustainability sector of NTNU and to collaborate on research activities on climate change and the transition to sustainability
- Business or sector** Higher education
- 
- 1/11/2018 – 30/6/2021
- Adjunct Professor and Senior Advisor**  
UiT, the Arctic University of Norway, Tromsø (Norway)
- To provide seminars on climate change science and policy for all staff and students
  - To collaborate to research activities on climate change in the Arctic
  - To advise the Rector on the international positioning of UiT and on sustainability curricula
- Business or sector** Higher education
- 
- 1/10/2013 – 31/10/2018  
(Retired, now pensioner)
- Head of the Unit “Climate Action and Earth Observation”, European Commission**  
European Commission, DG Research and Innovation, Brussels (Belgium)
- To manage a Unit in charge of preparing the research programmes in relation to Climate change and Earth observation for the EU Framework Programmes for Research and Innovation
  - To represent the European Union at the Intergovernmental Panel on Climate Change (IPCC)
  - To represent the European Commission at the Group on Earth Observation as member of the Budget Working Group (GEO)
- Business or sector** Research policy – Public administration
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- 1/1/2013 – 30/6/2013
- Acting Director of the “Environment” Directorate**  
European Commission, DG Research and Innovation, Brussels (Belgium)
- To manage the Directorate in charge of environmental research, composed of 5 Units for a total of about 140 staff
- Business or sector** Research policy – Public administration
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- 1/1/2011 – 30/6/2013
- Head of the Unit “Climate Change and Natural Hazards”**  
European Commission, DG Research and Innovation, Brussels (Belgium)
- To manage a Unit in charge of preparing the research programmes in relation to Climate change and natural hazards for the EU Framework Programmes of Research and Innovation
  - To represent the European Union at the Intergovernmental Panel on Climate Change (IPCC)
  - To be member of the Governing Board of the Joint Programming Activity on Climate (JPI-Climate)
  - **Business or sector** Research policy – Public administration
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- 1/7/2004 – 31/12/2010
- Head of the Unit “Environmental Technologies and Pollution Prevention”**  
European Commission, DG Research, Brussels (Belgium)
- To manage a Unit in charge of preparing the research programmes for the EU Framework Programmes for Research in relation to Environmental technologies for monitoring, observation, prevention, mitigation, adaptation and remediation for water, soil, air pollution, noise, urban environment, agriculture/forestry/landscape; environmental risk assessment; technology assessment and life cycle assessment methodologies; technologies for the protection and conservation of

cultural heritage.

- To establish in 2004 the Water Supply and Sanitation Technology Platform (WSSTP).
- To act as “Sherpa” of Commissioner Potočník for the **High Level Group on the Competitiveness of the European Chemicals Industry**

▪ **Business or sector** Research policy – Public administration

1/10/2002 – 30/6/2004

▪ **Head of the Unit “Water Cycle and Soil-related aspects”**

European Commission, DG Research, Brussels (Belgium)

- To manage a Unit in charge of preparing the research programmes of the Sixth Framework Programme in relation to water and soil, also responsible for activities on risk assessment, environmental quality appraisal, and for **International Cooperation** projects related to the water and soil field.
- To be member of the Board of the Sustainable Chemistry Technology Platform (SUSCHEM)

**Business or sector** Research policy – Public administration

16/9/1999 – 30/9/2002

▪ **Head of the Unit “Sustainable Management and Quality of Water”**

European Commission, DG Research, Brussels (Belgium)

- To manage a Unit in charge of preparing the research programmes of the Sixth Framework Programme in relation to water and soil, also responsible for activities on risk assessment, environmental quality appraisal, and for International Cooperation projects related to the water and soil field.
- To be member of the Board of the Sustainable Chemistry Technology Platform (SUSCHEM)

▪ **Business or sector** Research policy – Public administration

1/10/1998 – 15/9/1999

▪ **Head of the Unit “Water Research and Monitoring”**

European Commission, Joint Research Centre, Ispra (Italy)

- Recruited through an external competition for Head of Unit to manage a Unit of about 35 staff members with activities focused on research in support to various EU water policies (Urban wastewater directive, Nitrates Directive, Drinking water directive, Water framework directive, Materials in contact with Drinking Water) and to the development of reference materials and standardised methodologies.

**Business or sector** Research policy – Public administration

1980 – 30/9/1998

▪ **Researcher, Head of Laboratory and vice-Director**

ENEA – the Italian National Agency for Research on Energy, Environment and New Technologies, Bologna (Italy)

- Researcher in the field of energy recovery from animal waste (1980-1986)
- Founder and Head of the Wastewater Research Laboratories of Bologna (1986-1998) working on biological wastewater treatment processes, particularly anaerobic digestion and nutrient removal.
- Vice-Director of the Bologna Centre of ENEA (1995-1998) accounting for about 450 staff members, as member of a three-members Board of Direction, with tasks related to the management of Working Unions relationships and with the management of all common resources (buildings, services, libraries, transports, infrastructures, etc.).

**Business or sector** Public research establishment

1978 – 1980

**Researcher**

CRPA – Research Centre for Animal Production, Reggio Emilia (Italy)

- Researcher in the field of energy recovery from animal waste working on nutrient removal from piggery wastewater, coupling anaerobic digestion treatment processes with constructed wetlands for post-treatment;
- winner of a **Fulbright-Hayes** fellowship, moved from August 1979 to March 1980 to the US at the **University of California in Davis**, where he studies and works at the Department of **Agricultural Engineering** and at the Dept. of **Ecology**
- **Business or sector** Public research establishment

**EDUCATION AND TRAINING**

1/10/1972-31/7/1978

**Doctor degree in Agricultural Sciences**

At that time, it was the higher level degree in Italy

University of Milan, Italy

- He was awarded of his degree with 110/110 marks *cum laude* by presenting a thesis work on the role of agriculture and animal husbandry on the eutrophication of northern Adriatic Sea, under the tutoring of Prof. Roberto Marchetti (after four years of laboratory work at the Water Research Institute of the CNR).

**PERSONAL SKILLS**

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
TOEFL and GRE passed in 1979					
French	C2	C2	C1	C1	C1
Passed level 6 at European Commission					

Spanish independent user

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user  
[Common European Framework of Reference for Languages](#)

Communication skills ▪ Excellent communication skills

Organisational / managerial skills ▪ Excellent managerial and organisational skills, having managed multi-national teams of different size and nature throughout my whole working life.

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Independent user	Independent user	Independent user	Independent user	Independent user

Levels: Basic user - Independent user - Proficient user  
[Digital competences - Self-assessment grid](#)

- At early times of computers, he used to write statistical software for data processing
- good command of office suite (word processor, spread sheet, presentation software)
- very good command of photo editing software gained as an amateur photographer

Driving licence A-B

## ADDITIONAL INFORMATION

Publications  
 Presentations  
 Projects  
 Conferences  
 Seminars  
 Honours and awards  
 Memberships  
 References  
 Citations  
 Courses  
 Certifications


- Author of more than 120 scientific papers (more than 1/3 of which on refereed journals) and some books; the bulk of his literature refers to advanced anaerobic digestion processes and to advanced biological treatment processes with nutrient removal from wastewater. After his move to Brussels in 1999, due to his position of research programme manager he refrained to publish regularly any longer on scientific magazines.
- During his career at the European Commission, he worked on the drafting of several policy and legislative papers in relation to climate change, Arctic, water, soil, natural disasters, environmental technologies, environment & health and research.
- Former member of the International Water Association; within this organisation he has been the Chairman of the Specialist Group on Anaerobic Digestion from 1997 to 1999.
- He has acted as tutor of about 20 Doctor Degree theses works and for some PhD dissertations, in Italian and foreign Universities.
- He holds four patents on relevant anaerobic digestion and nutrient removal technologies.
- He is registered as Professional Agronomist at the Register of Professional Agronomist of the Bologna Province in Italy.
- He has been the main EU organiser and negotiator for the 2<sup>nd</sup> Arctic Science Ministerial held in Berlin 25-26 October 2018 – co-organised by European Commission, Germany and Finland
- He is member of the Policy Outreach Committee of the European Association of Environmental and Resource Economists (EAERE).
- He is member of Expert Groups supporting climate policies definition of the Emilia Romagna Region and the Municipality of Bologna.
- During his whole working career, he has regularly followed training courses of various kinds. His training portfolio at the European Commission covers general management skills, financial and legal issues, human resources management and other management issues. Among the latter, it is worth to mention the attendance of the Management Training Programme (MTP) in 2005, a training programme established by the European Commission for middle and top managers. In 2006 he was selected by DG RTD for the External Management Programme, and attended the course “Decision Making for Leaders” at the London Business School.

## 20 SELECTED INTERNATIONAL PUBLICATIONS

- 1) Tilche, A. (1981). Agricultural and animal wastes: a growing problem in eutrophication. *Water Quality bulletin*, vol. 6, No 4, pp. 131-135.
- 2) Tilche, A., Xiushan, Y. (1987). Light and scanning electron microscope observations on the granular biomass of experimental SBAF and HABR reactors. Paper presented to the International Workshop: “Granular anaerobic sludge-microbiology and technology”. - Lunteren (Netherlands) 25-27 October 1987.
- 3) Bortone, G., Gemelli, S., Rambaldi, A., Tilche, A. (1992). Nitrification, denitrification and biological phosphate removal in sequencing batch reactors treating piggery wastewater. *Water Science Technology*. vol. 26, No 5-6, pp. 977-985.
- 4) Garuti, G., Dohanyos, M., Tilche, A. (1992). Anaerobic-aerobic combined process for the treatment of sewage with nutrient removal: the ANANOX process. *Water Science and Technology*. vol. 25, No 7, pp. 383-394.
- 5) Tilche, A., Bortone, G., Cech, J.S., Garuti, G., Xiushan, Y. (1992). Possibility to manage the energy fluxes in biological wastewater treatment processes with nutrient removal. *Med. Fac. Landbouww. Univ. Gent*, 57/4a, pp.1583-1597.
- 6) Yang X., Garuti G., Tilche A. (1993). Denitrification with *Thiobacillus denitrificans* in the ANANOX® process. *Biotechnology Letters*, 15 (5), 531-536.
- 7) Sorm R, Bortone G., Saltarelli R., Jenicek P, Wanner J., Tilche A. (1996) Phosphate uptake under

- anoxic conditions and fixed film nitrification in nutrient removal activated sludge system. *Water Research*, 30, pp. 1573-1584.
- 8) Bortone G., Saltarelli R., Alonso V., Sorm R., Wanner J., Tilche A. (1996). Biological anoxic phosphorus removal - the Dephanox process, *Wat. Sci. Tech.* 34, 1-2, pp. 119-128.
  - 9) Stante L., Cellamare C., Malaspina F., Bortone G. e Tilche A. (1997) Biological phosphate removal in a pure culture of *Lamprospedia spp.* *Water Research*, 31, 6, pp.1317-1324.
  - 10) Valentini A., Garuti G., Rozzi A., Tilche A. (1997). Anaerobic degradation kinetics of particulate organic matter: a new approach. *Wat. Sci. Tech.* 36 (6-7), pp. 239-246.
  - 11) Sorm R., Wanner J., Saltarelli R., Bortone G., Tilche A. (1997). Verification of anoxic phosphate uptake as the main biochemical mechanism of the "Dephanox" process. *Wat. Sci. Tech.* 35, 10, pp. 87-94.
  - 12) Tilche A., Bortone G., Sorm R., Alonso V., Wanner J. (1997). Design optimisation of anoxic bio-P removal processes. *Med. Fac. Landbouww. Univ. Gent*, 62/4b, pp. 1809-1816.
  - 13) Bortone G., Marsili Libelli S., Tilche A., Wanner J. (1999). Anoxic phosphate uptake in the Dephanox process. *Wat. Sci. Tech.*, 40(4-5), pp. 177-185.
  - 14) Tilche A., Bortone G., Malaspina F., Piccinini S., Stante L. (2001). Biological nutrient removal in a full scale SBR treating piggery wastewater: results and modelling. *Wat. Sci. Tech.*, 43(3), pp. 363-371.
  - 15) Aulenta F., Bassani C., Ligthart J., Majone M., Tilche A. (2002). Calorimetry: a tool for assessing microbial activity under aerobic and anoxic conditions. *Water Research* 36, pp. 1297-1305.
  - 16) Tilche A., Galatola M. (2008). The potential of bio-methane as bio-fuel/bio-energy for reducing greenhouse gas emissions: a qualitative assessment for Europe in a life cycle perspective. *Wat. Sci. Tech.*, 57, 11, pp. 1683-1692.
  - 17) Tilche A., Nociti A. (2015). Laudato si': the beauty of Pope Francis' vision. *S.A.P.I.EN.S.*, 8, 1, pp. 1-5.
  - 18) Dobricic S., Monforti Ferrario F., Pozzoli L., Wilson J., Gambardella A., Tilche A. (2018) Impact assessment study on societal benefits of Arctic observing systems - IMOBAR, EUR 29400 EN, Publication Office of the European Union, Luxembourg, 2018, ISBN 978-92-79-96697-2, doi:10.2760/713084, JRC113327.
  - 19) Tilche A. (2021). The Arctic and Climate Change: a major scientific problem, and a planetary challenge, in: *Whither the Arctic Ocean? Research, Knowledge and Development en Route to the New Arctic*, Fundación BBVA, Bilbao, edited by Paul Wassmann, pp. 33-41, ISBN 978-84-92937-82-0.
  - 20) Armaroli N., Carraro C., Cazzola P., Cherchi E., Procopio M., Tanelli M., Tavoni M., Tilche A. Torsello M. (2022). The road ahead: how to reduce emissions and energy use for Italy's transport sector. *Nature Italy*. doi: <https://doi.org/10.1038/d43978-022-00098-x>

Bologna, February 9, 2024



Andrea Tilche