Francesco Lombardi

Address:	Via Medici da Seregno 15, 20831, Seregno (MB), Italy
e-mail:	francesco.lombardi@polimi.it
Date and place of birth:	25/04/1991, Monza (MB), Italy

Work Experience

November 2017 – present

Doctoral researcher
Politecnico di Milano, Department of Energy, SESAM group
Awarded with a 3-year full Scholarship

Research field: modelling heat and electricity integration within Multi-Energy Systems (MES) to support local- and country-wide decarbonisation

Open-source modelling projects:
 RAMP, stochastic load generation (main developer)
 MicroGridsPy & MES-Py, microgrid optimisation (co-developer)
 Calliope, energy system modelling framework (contributor)

PhD students' representative at CUG (www.cug.polimi.it)

October 2016 – present

Teaching assistant
Politecnico di Milano

Job assignment for the AY 2016/2017, 2017/2018 and 2018/2019 as teaching assistant for the course "*Engineering and cooperation for development*" – Master of Science in energy engineering

Main role: tutor for the project work on the design and optimisation of a hybrid micro-grid in a rural context

July 2016 – October 2017

Research fellow
Politecnico di Milano, Department of Energy,
UNESCO Chair in Energy for Sustainable Development
 www.unescochair-e4sd.polimi.it

Research field: thermodynamic modelling and experimental analyses for Small-scale Sustainable Energy Technologies (SSETs)

Key contribution to the IEA's *Energy Access Outlook 2017 – From Poverty to Prosperity*, with a special focus on traditional biomass technologies (report on methodologies for performance evaluation, elaboration of the inputs for the WEO model, mapping of dissemination programs)

Collaboration in the European project ECHO/ERC/BUD/2016/91000 - Sustainable energy technologies for food security in humanitarian contexts (SET4food) - Phase 2 (http://www.set4food.org/) aimed at strengthening

the capacity of humanitarian actors in the implementation and management of efficient and sustainable energy technologies

Member of the Organizing Committee for the CUCS V CONGRESS held in Milan on the 14-15th of September 2017. Title: "Migration, Peace and Development: new challenges and new faces for Cooperation."

Education

June 2016	**Scuola Estiva della Fisica Tecnica - Energia per l'Industria** Associazione della Fisica Tecnica Italiana
Mar. 2014 – Apr. 2016	**Master of Science in Energy Engineering for Development** Politecnico di Milano, UNESCO Chair *Final mark*: 110/110 *Thesis Title:* Performance Evaluation of Improved Cooking Stoves: a critical review and a theoretical and experimental study for a better testing approach
November 2015	**ATHENS Programme - course on Photovoltaic Solar Energy** ENSTA Paris Tech
Sep. 2010 – Feb. 2014	**Bachelor of Science in Energy Engineering** Politecnico di Milano

Publications

December 2018	Francesco Lombardi, Sergio Balderrama, Nicolò Stevanato, Stefano Pistolese, Emanuela Colombo, Sylvain Quoilin. *Modelling of a village-scale Multi-Energy System (MES) for the integrated supply of electric and thermal energy*, (Accepted for) 10th International Conference on System Simulation in Buildings (2018).
August 2018	Francesco Lombardi, Fabio Riva, and Emanuela Colombo, *Dealing with small sets of laboratory test replicates for Improved Cooking Stoves (ICSs): insights for a robust statistical analysis of results*, Biomass and Bioenergy 115 (2018): 27-34,
November 2017	Francesco Lombardi, Luigi Colombo, Emanuela Colombo, *Development and validation of a Cooking Stoves Thermal Performance Simulator (Cook-STePS) to simulate water heating procedures in selected conditions*, Energy 141 (2017): 1384-1392,
February 2017	Francesco Lombardi, Fabio Riva, Giorgio Bonamini, Jacopo Barbieri, Emanuela Colombo, *Laboratory protocols for testing of Improved Cooking Stoves (ICSs): A review of state-of-the-art and further developments*, Biomass and Bioenergy, Volume 98, March 2017, Pages 321-335, ISSN 0961-9534,

January 2017	Francesco Lombardi, Fabio Riva, Emanuela Colombo, *Guidelines for reporting and analysing laboratory test results for biomass cooking stoves*, ISBN: 978-88-941226-3-3,
October 2016	Fabio Riva, Francesco Lombardi, Claudia Pavarini, Emanuela Colombo, *Fuzzy interval propagation of uncertainties in experimental analysis for improved and traditional three – Stone fire cookstoves*, Sustainable Energy Technologies and Assessments, Volume 18, December 2016, Pages 59-68, ISSN 2213-1388,

Conferences contributions

25-26 September 2018

EMP-E 'Modelling Clean Energy Pathways', Bruxelles
Role: Poster presenter
Topic: Impact assessment of deep electrification of households' cooking appliances: application to Italy

27-29 June 2018

Tech4Dev 2018, EPFL Lausanne
Role: Paper presenter
Title: Comprehensive Optimisation and Strategy Selection for Resilient Energy Systems in Post-Disaster Recovery: the Case of the 7 Steps Project

6-8 June 2018

Open Energy Modelling 8th Workshop, ETH Zurich
Role: Do-a-thon proposer
Topic: Reviewing approaches for Thermal Loads modelling

26-28 January 2017

ETHOS Conference 2018, Seattle (USA)
Role: Speaker
Topic: Cook-STePS: a tool to expand lab tests information by means of thermodynamic simulations

27 March 2017

IEA World Energy Outlook 2017: High-level Workshop on Energy and Development
Role: International Expert
Topics: Access to clean cooking facilities, traditional biomass use in developing countries, Improved Cooking Stoves

27-29 January 2017

ETHOS Conference 2017, Seattle (USA)
Role: Speaker
Topic: Scientifically-based methodology to support performance testing of ICSs: towards more robust approaches

17-25 November 2016

Forum of Renewable Energy Promotion in Developing Countries, Beijing
Role: International Expert
Topic: Development of international standards for Improved Cooking Stoves testing

16-17 May 2016	**Africa-EU Energy Partnership, 2nd Stakeholder Forum, Milan**
	Role: Exhibitor
	Topic: Methodologies for the evaluation of Improved Cooking Stoves performance
29-31 January 2016	**ETHOS Conference 2016, Seattle (USA)**
	Role: Politecnico di Milano delegate
	Topics: Access to clean cooking facilities, traditional biomass use in developing countries, Improved Cooking Stoves

Skills

Engineering competences	Energy modelling and optimisation
	Energy conversion
	Renewable Energy Systems (biomass, photovoltaic, solar thermal, geothermal, wind, OTEC, waves)
	Distributed generation (off-grid, mini-grid)
	Heat and mass transfer
Languages	**Italian** (Mother tongue)
	English (Fluent – 2010 FCE: <u>Grade A</u>)
	French (Intermediate)
Personal Skills	Experience of working in a multicultural and international environment
	Good dialectical and presentation skills

IT Skills	Operating systems:	Windows, Android
	Programming languages:	Python, R, VBA
	Open-source models:	Calliope, RAMP, MicroGridsPy & MES-Py
	Engineering Software:	HOMER, TRNSYS, Turbogas
	CAD systems:	Inventor, Solid Edge, Solid Works
	Microsoft Office:	Word, Excel, PowerPoint, Publisher

Extracurricular activities and interest

President and spokesman of local cultural organisation (2010-2013)
Tutor in maths, physics and English for high-school and university students
Self-taught musician (guitar, bass, drums, synthesisers)
Practice of sports (basketball, boxing)

Autorizzo il trattamento dei miei dati personali ai sensi del Dlgs 196 del 30 giugno 2003