

Francesco Fuso Nerini

E-Mail : francesco.fusonerini@energy.kth.se

CV updated to Jan 2021



Research and work experiences

Stockholm, Sweden

(June 2017 – present)

Associate Professor, Director for the KTH Climate Action Centre

KTH – Royal Institute of Technology, Unit of Energy Systems Analysis (dESA)

I work as Associate Professor at the division of Energy Systems Analysis of KTH-ITM – and I am Director for the KTH Climate Action Centre. My focus is on addressing multi-disciplinary sustainable development related issues – including how future energy choices, climate change and AI will affect the achievement of the Sustainable Development Goals. My role encompasses a range of research, teaching and leadership tasks. For instance, I am leading several projects, from national (funded by Swedish research agency) to EU and international projects. For instance I am leading a large UN-Food and Agricultural Organization – funded research project on managing the nexus among climate, land energy and water in the MENA region, and a Formas-funded research project investigating interlinkages among Sustainable Development Goals. Scientific outputs in my position include six Nature-journals publications, and a range of other articles in scientific and gray literature.

Trieste, Italy

(May 2018-June 2018)

Guest researcher at the International Centre for Theoretical Physics (ICTP). Trieste, Italy

-Co-organization of The Summer School on Modelling Tools for Sustainable Development (<http://indico.ictp.it/event/8315/>) that trained analysts from government offices and universities from approximately 20 different countries.

. Engagement with local researchers on shared research themes.

Golden, Colorado, US

(April 2017 – present)

Research Fellow at the Payne Institute, Colorado School of Mines

Scientific output and group steering in a world-class public policy institute at one of the US's finest research universities in the areas of natural resources, energy, and environment.

Paris, France

(Oct. 2016 – April. 2017)

Energy Analyst, International Energy Agency (IEA), World Energy Outlook (WEO) division

Analyses and writing for the World Energy Outlook 2016 and 2017, and in the WEO Energy Access Outlook 2017. I also contributed to the 'well below two degrees' project, commissioned by the German government for providing analytical backing for the discussions on the Paris agreement.

London, UK

(Nov 2015 – May 2017)

Post-doctoral research associate, University College London (UCL), Energy Institute

As post-doctoral research associate at UCL I was involved in several research outputs. Among others, I led UCL's efforts in a European Commission research project looking at energy poverty in the EU for the European Commission, led a multi-departmental UCL position paper looking at the role of modern energy use in achieving the Sustainable Development Goals (published in Nature Energy) and worked with top academics in the flagship and largest UK's energy modelling project (WholeSEM).

Stockholm, Sweden

(Oct. 2012 – Oct. 2015)

Leader of the Sustainable Energy for All research program, KTH - unit of Energy Systems Analysis

During my work at KTH I led the SE4All research program. That included the coordination of several outputs such as: (1) leading KTH contributions to the Sustainable Energy For All (SE4All) Global Tracking Framework. (2) leading KTH's analyses for the Africa chapter of the IEA World Energy Outlook (WEO) 2014. (3) developing the Multi Dimensional Energy Poverty Index in collaboration with UNIDO (4) organizing and teaching of capacity building activities for the Bolivian and Ethiopian energy and finance ministries. (5) developing the official review of the integrated electricity plan of Mauritius. (6) teaching and supervision of junior colleagues and students

Melbourne, Australia
(July 2013 – Jan 2014)

Guest researcher, Melbourne Energy Institute, Melbourne University (MEI)

In the framework of the program Climate Change and Energy Poverty in Timor-Leste, I investigated the investment needs in Timor Leste for rural energy development. In addition I compared rural electrification options for Timor Leste, and the potential climate and land-use advantages of adopting modern cooking solutions.

Belém, Brazil
(June 2012 – Sept 2012)

Guest researcher, Universidade Federal do Pará (UFPA)

At UFPA I was actively involved in comparing energy solutions for an increased energy access in the Amazon region – working in collaboration with the state public concessionary (Eletronorte) and utility (CELPA). The research was developed as a multi criteria analysis, encompassing techno-economic-social and environmental considerations. I developed this project during 7 months, of which I spent half in the field.

Stockholm, Sweden
(Jun 2011 – Jun 2012)

Project manager, Royal Institute of Technology (KTH)

I was the project manager of 28 engineers located in 5 different countries for the design and building of a prototype of an energy and water purification emergency module (EEM), targeting prolonged displaced situations. The module encompasses hybrid generation from a number of renewable and conventional energy sources, and it is containerized. In addition the module includes a water purification unit to meet the water needs of displaced population. After securing the financing for the prototype from KIC Inno-Energy, I managed the technical design and the prototype assembly. As a result the demonstration unit is now built and in testing in Stockholm, paving the way for a future deployment in the field.

Milan, Italy
(Jan 2010 - August 2010)

**Trainee, Italian National Agency for New Technologies, Energy and the Environment (RSE),
Department of Power System Development**

At RSE I developed a study on the Italian industrial consumption and generation of energy, within the framework of the ministerial program Industry 2020. The goal of the project was to individuate possible energy efficiency measures for the Italian industrial sectors. After statistical analyses on the current energy usage in the sectors of the Italian industrial system, results showed in which sectors there was more space for energy efficiency interventions. The results of the study were used to support the establishment of specific energy targets and policy support mechanisms in the Italian industrial system.

Education

Stockholm, Sweden
(2020)

Docent (habilitation to Professor) in Energy and Environment Systems Analysis

Royal Institute of Technology, division of Energy Systems Analysis (KTH-dESA)

Stockholm, Sweden
(Oct. 2012 – Sept. 2016)

Ph.D in Energy and Environment Systems Analysis

Royal Institute of Technology, division of Energy Systems Analysis (KTH-dESA)

London, UK
(Feb. 2016)

Leadership in action programme

Intensive experiential Leadership Programme, University College London

**Stockholm, Sweden &
Barcelona, Spain**
(Aug 2010- Sept 2012)

Double Master of Science (M.Sc) degree in Sustainable Energy Engineering

Royal Institute of Technology (KTH), Sweden & Universitat Politècnica de Catalunya (UPC), Spain
Official double degree of the European Institute of Innovation & Technology (EIT)
Awarded a full European Union scholarship for the program.

Barcelona, Spain
(Apr 2011 – July 2011)

Business Management and Entrepreneurship diploma, ESADE Business School

Courses designed for KIC InnoEnergy, European Institute of Innovation & Technology.

Milano, Italy
(Sept 2008 – July 2010)

Master of Science (M.Sc) in Environmental and Land Planning Engineering,

Technical University of Milan (Politecnico di Milano)

Milano, Italy
(Sept 2005 – Sept 2008)

Bachelor of Science (B.Sc) in Environmental and Land Planning Engineering,

Technical University of Milan (Politecnico di Milano)

Language Skills

| | |
|---------|----------------------|
| Italian | Native language |
| English | Proficient user, C2 |
| Spanish | Proficient user, C1 |
| Swedish | Independent user, B1 |

Projects and extracurricular activities

| | |
|--|--|
| Stockholm, Sweden (2014) | Post-graduate courses (15 ECTS) in development economics, Stockholm School of Economics |
| Shanghai, China (Aug 2013) | Teacher at the Shanghai Jiao Tong University in Energy Systems Analysis at the Ph.D level |
| London, UK & New York, US (Dec 2011 – Apr 2012) | Runner-up, among 5000+ teams from the top business schools in the world, in the Hult Global Case Challenge, the world's largest crowdsourcing platform for social good. The aim of the competition was to develop business models for the commercialization of solar lighting in Africa. Among those in the executive jury were the former US president, Bill Clinton, and Nobel Peace Prize winner, Professor Muhammad Yunus. (story at: http://kic-innoenergy.com/wp-content/uploads/2014/04/SS_Hult_BF3.pdf). |
| Milano, Italy (Sept 2009 - Aug 2010) | Resident student and full scholarship holder at the Collegio di Milano, inter-university campus of excellence recognized by the Italian Ministry of University and Scientific Research |

Selected publications

(Updated full list at Available at: <https://scholar.google.co.uk/citations?user=BblxI3AAAAAJ&hl=en>)

Peer Reviewed academic publications

1. Engström, R; **Fuso Nerini, F.** et al, *Succeeding at home and abroad: Accounting for the international spillovers of cities' SDG actions*, **Nature Publishing Group (NPJ) Urban Sustainability**, Accepted, 2020
2. Vinuesa, R.; Azizpour, H.; Leite, I.; Balaam, M.; Dignum, V.; Domisch, S.; Felländer, A.; Langhans, S.; Tegmark, M.; **Fuso Nerini, F.** *The Role of Artificial Intelligence in Achieving the Sustainable Development Goals*. **Nature Communications**, 2020 be 10.1038/s41467-019-14108-y
3. **Fuso Nerini, F.** et al. *Connecting climate action with the other Sustainable Development Goals*, **Nature Sustainability**, 2019; **2 (8): 674-680**
4. **Fuso Nerini, F.** et al., *Mapping synergies and trade-offs between energy and the Sustainable Development Goals*, **Nature Energy** 3, 2017, 3 (1): 10–15
5. **Fuso Nerini, F.** et al. *Shore up support for climate action using SDGs*, **Nature** 557, 2018
6. Dobbins, A.; **Fuso Nerini, F.**; Deane, P.; Pye, S. Strengthening the EU's Response to Energy Poverty, **Nature Energy** 4, pages 2–5, 2019
7. **Fuso Nerini, F.** et al. *Sustainable Development in the Wake of Covid-19*. **Nature Communications** (under review, preprint at: <https://www.researchsquare.com/article/rs-63414/v1>)
8. **Castor, J.; Bacha, K.; Fuso Nerini, F.** *SDGs in action: A novel framework for assessing energy projects against the sustainable development goals*. **Energy Research and Social Sciences** 2020, 68, 101556.
9. **Korkovelos, A.; Zerriffi, H.; Howells, M.; Bazilian, M.; Rogner, H.-H.; Fuso Nerini, F.** *A Retrospective Analysis of Energy Access with a Focus on the Role of Mini-Grids*. **Sustainability** 2020, 12
10. **Fuso Nerini, F.** et al; *A Research And Innovation Agenda For Achieving Zero-Emission European Cities*. **Sustainability**, 2019; 11 (6)
11. Cavaleiro de Ferreira, A.; **Fuso Nerini, F.** *A Framework for Implementing and Tracking Circular Economy in Cities: The Case of Porto*. **Sustainability**, 2019; 11 (6): 1813
12. **Fuso Nerini, F.** et al., *The cost of cooking a meal. The case of the Nyeri County in Kenya*. **Environmental Research Letters** 12, 2017

13. **Fuso Nerini F.** et al. *Myopic decision making in energy system decarbonisation pathways. A UK case study* **Energy Strategy Reviews** 17, 2017
14. Runsten S, **Fuso Nerini F** and Tait L. Energy provision in South African informal urban Settlements - A multi-criteria sustainability analysis. **Energy Strategy Reviews** 19, 2017
15. **Fuso Nerini, F.** et al., *A Cost Comparison Of Technology Approaches for Improving Access to Electricity Services.* **Energy** 95, 2016
16. **Fuso Nerini, F.**; et al., *Powering production; The case of the sisal fibre production in the Tanga region, Tanzania.* **Energy Policy** 98, 2016
17. **Fuso Nerini F.** et al., *The Energy and Water Purification Emergency Module (EEM); A containerized solution for meeting the energy and water needs in prolonged displaced situations.* **Energy Conversion and Management** 93, 2015
18. **Fuso Nerini, F.** et al., *Rural Electrification Options In The Brazilian Amazon; A Multi Criteria Analysis.* **Energy for Sustainable Development** 20, 2014
19. **Fuso Nerini, F.** et al., *Estimating the cost of achieving different tiers of energy access in rural areas; A case study for the village of Suro Craic in Timor Leste.* **Energy** 79, 2015
20. Mentis, D.; Welsch, M.; **Fuso Nerini, F.** ; Broad, O.; Howells, M.; Bazilian, M.; Rogner, H.; A GIS based approach for electrification planning - A case study on Nigeria. **Energy for Sustainable Development**, 2015, 29: 142-150
21. Nussbaumer P, **Fuso Nerini F.**, Onyeji I and Howells M, Global insights based on the multidimensional energy poverty index (MEPI) **Sustainability** 5, 2013

Other publications including books and patents.

22. R. E. Engström, **F. Fuso-Nerini** et al. Research and Innovation Needs to Decarbonise European Cities, DEEDS H2020 programme policy brief, 2020. Available at: <https://deeds.eu/results/deeds-policy-brief-cities/>
23. Fuso Nerini, F. What does climate change mean for sustainable development? Nature Sustainability 'Behind the paper' section. 2019. Available at: <https://sustainabilitycommunity.nature.com/users/266273-francesco-fusonerini/posts/50758-what-does-climate-change-mean-for-sustainable-development>
24. Sridharan, V., Howells, M.; Ramos, E.; Sundin, C.; Almulla, Y.; **Fuso-Nerini; F.** The Climate-Land-Energy And Water Nexus: Implications For Agricultural Research. **CGIR Science Forum 2018 background report.** Available at: https://www.scienceforum2018.org/sites/default/files/2018-10/SF18_background_paper_Sridharan_2.pdf
25. **Final Report of the High-Level Panel of the European Decarbonisation Pathways Initiative**, European Commission 2018. Lead of the Cities Decarbonization Chapter. Available at https://ec.europa.eu/info/sites/info/files/rec-18-002-decarbonisation_booklet_27112018.pdf
26. **International Energy Agency, World Energy Outlook 2017.** Co-lead of the Industry sector. Contributions to energy access report.
27. **International Energy Agency, World Energy Outlook 2016.** Selected contributions for the finalization of the report.
28. **International Energy Agency, World Energy Outlook 2015.** The contributions to the India Chapter reported in the spotlight section at pp. 561-562, 2015
29. **International Energy Agency, India Energy Outlook 2015.** Spotlight section in pp. 153-154, 2015
30. **International Energy Agency (IEA) and the World Bank, Sustainable Energy for All 2015—Progress Toward Sustainable Energy, World Bank, Washington, DC.** Contributions to the energy access and nexus chapters (pp. 243-280), 2015
31. **International Energy Agency, World Energy Outlook 2014.** The contributions to the Africa Chapter reported in the spotlight section at pp. 540-541, 2014
32. **International Energy Agency, Africa Energy Outlook 2014.** Spotlight section in pp. 126-127, 2014
33. **ESMAP and the World Bank, Status of Energy Access Report**, contributions to the Power System Planning for Energy Access chapter, 2016
34. Dobbins, A.; **Fuso Nerini, F.**; Pye, S.; Deane, P.; Brajković, J.; De Miglio, R; Measures to protect vulnerable consumers in the energy sector: an assessment of disconnection safeguards, social tariffs and financial transfers, **European Commission (INSIGHT_E) publication, 2016**
35. **Fuso Nerini, F. & Borgarello, M.**, Analysis of the Energy Usage in the Italian Industrial Sectors. Italian National Agency for New Technologies, Energy and Sustainable Economic Development – **GSE report, 2010**