

Stefano Moret | full CV

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In a nutshell

PhD in Energy with a solid interdisciplinary background, my main area of expertise is **modeling and optimization of energy systems**. My latest position was a postdoctoral appointment at EPFL (Switzerland), where I also lectured the *Energy conversion and renewable energy* Master course. To date, I have authored 20+ scientific publications, and I am fluent in Italian, English, French and Spanish; intermediate in German and Chinese. My goal is to contribute to the energy transition, through teaching, research and consulting.

Education

École Polytechnique Fédérale de Lausanne (EPFL) <i>PhD Energy</i> Dissertation title: <i>Strategic energy planning under uncertainty</i> Supervisors: Prof. F. Maréchal, Prof. M. Bierlaire	Switzerland 2013–2017
University of Padova <i>MSc Mechanical Engineering, 110/110 with honors</i> GPA: 29.5/30	Italy 2009–2012
University of California, Berkeley <i>Academic exchange for MSc Thesis, BEST lab</i> Dissertation title: <i>Energy efficiency in lighting: daylight harvesting optimization and Wireless Sensor Networks</i>	USA Aug 2011 - Jan 2012
NTNU <i>Academic exchange, Erasmus program</i>	Norway 2010
University of Padova <i>BSc Industrial Engineering, 110/110 with honors</i> GPA 29.3/30	Italy 2006–2009
High School <i>Scientific High School diploma, 100/100</i>	Italy 2001–2006

Professional experience

École Polytechnique Fédérale de Lausanne (EPFL) <i>Postdoc and lecturer - Industrial Process and Energy Systems Engineering (IPESE) group</i> <ul style="list-style-type: none">○ Lecturer: <i>Energy conversion and renewable energy</i> Master course (watch )○ Research: modeling and optimization of national energy systems. Active in multiple projects, mainly funded by the Swiss Competence Center for Energy Research (SCCER) and the Swiss National Science Foundation (SNSF)	Switzerland 2017–2019
École Polytechnique Fédérale de Lausanne (EPFL) <i>Research and teaching assistant - Industrial Process and Energy Systems Engineering (IPESE) group</i> Research: modeling and optimization under uncertainty of urban and national energy systems. Main projects: <ul style="list-style-type: none">○ Swiss-energyscope.ch - decision support for the Swiss energy strategy○ Geotherm II - integration of deep geothermal energy in cities Teaching: <ul style="list-style-type: none">○ Assistant to Master and PhD energy courses: lectures and exercises○ 20+ supervised students (9 Master theses)	Switzerland 2013–2017
University of Padova – Industrial Engineering Department <i>Temporary research fellow</i> 6-month research project funded by ENEL Foundation	Italy 2013
California Lighting Technology Center – University of California, Davis <i>Junior Specialist</i>	USA 2012

Building energy simulation, experimental tests for fenestration devices

JEst - Junior Enterprise, University of Padova

Italy

Associate, President (year 2011)

2009-2011

Non-profit student association. Consultancy and event organization. Highlights:

- Start Cup Giovani, project manager: university course and start-up competition in 3 universities (250+ students). Obtained and managed 240 k€ funding from the Italian Prime Minister's Office, Department of Youth.
- Becoming Manager 2009, project manager: job meeting and recruitment event. Generated 30 k€ revenue.
- President: management of 35 associates

FIAMM Spa

Italy

Summer intern

2009

Energy storage. BSc thesis: LabVIEW application for Statistical Process Control

Aluminium Rheinfelden GmbH

Germany

Intern

2008

Aluminium foundry. One-month research on innovative aluminum alloys (collaboration with University of Padova)

ACC compressors Spa

China

Summer intern

2006–2008

Compressor manufacturer. Quality engineer, chemical and acoustic laboratory work

DSG Srl


Italy

Summer intern

2005

Stainless steel processing. Direct labor experience.

Current projects

energyscope: contributed to the development of the online platform energyscope.ch. Development, full documentation and maintenance of the open-source energy modeling framework: see it on [github](https://github.com) . The framework has found application in 10+ projects at urban, regional and national levels, and it is used for teaching at EPFL.

askPinocchio: machine learning tool for automatic online fake news detection (askpinocchio.com)

Personal skills

Languages.....

Italian: Mother tongue

English: Fluent

TOEFL iBT 106/120, year 2010

French: Fluent

Spanish: Fluent

Mandarin Chinese: Intermediate

HSK Basic level A 211/300, year 2008

German: Intermediate

Other skills.....

IT: scripting (Matlab, python, Lua, VBA), mathematical programming (AMPL, GLPK), \LaTeX , web development, git, MacOS, Linux

Technical: optimization, energy modeling, environmental impact assessment (LCA)

Organizational: solid experience in project management, problem solving

Relational: teaching (watch ) , presentations and public speaking, communication

Awards

Nominated by the Doctoral School committee: EDEY Outstanding PhD Thesis Award 8% (shortlisted)

Nominated by the PhD jury: ABB award for best EPFL PhD thesis in energy (results in 2019)


Honorable mention: MSc thesis. Italian energy efficiency contest "Think Green, Be Efficient". Italian Senate, 2012.

1st most innovative and creative project: Start Cup Giovani. JADE Excellence awards, EU Parliament, 2012.

2nd most innovative and creative project: Becoming Manager. JADE Excellence awards, EU Parliament, 2011.

Publications

PhD thesis.....

S. Moret, *Strategic energy planning under uncertainty*. EPFL, Lausanne, 2017. Advisors: F. Maréchal, M. Bierlaire. DOI: 10.5075/epfl-thesis-7961. 

Journal articles.....

1. G. Limpens, S. Moret, H. Jeanmart and F. Maréchal. *EnergyScope TDs: an open source model for future national energy systems*. In preparation.
2. S. Moret, F. Babonneau, M. Bierlaire and F. Maréchal. *Overcapacity in European power systems: analysis and robust optimization approach*. Under review in *Applied Energy*.
3. S. Moret, F. Babonneau, M. Bierlaire and F. Maréchal. *Decision support for strategic energy planning: a complete robust optimization framework*. Under review in *European Journal of Operational Research* (second stage of revision).
4. S. Moret, V. Codina Gironès, M. Bierlaire and F. Maréchal. *Characterization of input uncertainties in strategic energy planning models*. *Applied energy*, 2017. Vol. 202, p. 597-617. DOI: 10.1016/j.apenergy.2017.05.106
5. V. Codina Gironès, S. Moret, E. Peduzzi, M. Nasato and F. Maréchal. *Optimal use of biomass in large-scale energy systems: insights for energy policy*. *Energy*, 2017. Vol. 137, p. 789-797. DOI: 10.1016/j.energy.2017.05.027
6. J. Unternährer, S. Moret, S. Joost and F. Maréchal. *Spatial clustering for district heating integration in urban energy systems: application to geothermal energy*. *Applied Energy*, 2017. Vol. 15, p. 749-763. DOI: 10.1016/j.apenergy.2016.12.136
7. S. Moret, E. Peduzzi, L. Gerber and F. Maréchal. *Integration of deep geothermal energy and woody biomass conversion pathways in urban systems*. *Energy Conversion and Management*, 2016. Vol. 129, p. 305-318. DOI: 10.1016/j.enconman.2016.09.079
8. S. Moret, M. Bierlaire and F. Maréchal. *Robust optimization for strategic energy planning*. *Informatica*, 2016. Vol. 27, num. 3, p. 625-648. DOI: 10.15388/Informatica.2016.103
9. V. Codina Gironès, S. Moret, F. Maréchal and D. Favrat. *Strategic energy planning for large-scale energy systems: a modelling framework to aid decision-making*. *Energy*, 2015. Vol. 90, p. 173-186. DOI: 10.1016/j.energy.2015.06.008


Conference papers.....

1. P. Campos, S. Moret, K. Gray and F. Maréchal. *Integration of low-Carbon energy technologies for urban centers - A case study in Chile*. In preparation, ISES Solar World Congress 2019.
2. G. Limpens, S. Moret, G. Guidati, X. Li, F. Maréchal and H. Jeanmart. *The role of storage in the Swiss energy transition*. Submitted, 32nd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems.
3. X. Li, S. Moret, F. Baldi and F. Maréchal. *Are renewables really that expensive? The impact of uncertainty on the cost of the energy transition*. Accepted, 29th European Symposium on Computer Aided Process Engineering.
4. M. L. Della Vedova, E. Tacchini, S. Moret, G. Ballarin, L. de Alfaro and M. Di Pierro. *Automatic online fake news detection combining content and social signals*. In Proceedings of the FRUCT22 conference, Finland, 2018. DOI: 110.23919/FRUCT.2018.8468301
5. E. Tacchini, G. Ballarin, M. L. Della Vedova, S. Moret, and L. de Alfaro. *Some like it hoax: automated fake news detection in social networks*. In Proceedings of the Second Workshop on Data Science for Social Good, Macedonia, 2017. Vol. 1960. CEUR-WS. [Link to full text](#)
6. S. Moret, M. Bierlaire and F. Maréchal. *Strategic energy planning under uncertainty: a mixed-integer linear programming modeling framework for large-scale energy systems*. In Proceedings of the 26th European Symposium on Computer Aided Process Engineering, p. 1899-1904, Slovenia, 2016. DOI: 10.1016/B978-0-444-63428-3.50321-0
7. J. Rager, S. Moret, M. Pernet and F. Maréchal. *Integrating uncertainty into urban energy system design*. In

Proceedings of the 26th European Symposium on Computer Aided Process Engineering, p. 1641-1646, Slovenia, 2016. DOI: 10.1016/B978-0-444-63428-3.50278-2

8. V. Codina Gironès, S. Moret, E. Peduzzi, M. Nasato and F. Maréchal. *Optimal use of biomass in large-scale energy systems: insights for energy policy*. In Proceedings of the 29th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, Slovenia, 2016.
9. S. Moret, L. Gerber, F. Amblard, E. Peduzzi and F. Maréchal. *Geothermal energy and biomass integration in urban systems: a case study*. 40th Workshop on Geothermal Reservoir Engineering, USA, 2015. [Link to full text](#)
10. S. Moret, V. Codina Gironès, F. Maréchal and D. Favrat. *Swiss-energyscope.ch: a platform to widely spread energy literacy and aid decision-making*. In Proceedings of the 17th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction, p. 877-882, Czech Republic, 2014. DOI: 10.3303/Cet1439147
11. S. Moret, M. Noro and K. Papamichael. *Daylight harvesting: a multivariate regression linear model for predicting the impact on lighting, cooling and heating*. Buildins Simulation Applications, Italy, 2013. [Link to full text](#)

Invited talks and presentations

1. S. Moret. *Long-term energy planning under uncertainty*. Invited talk, Energy Futures lab, Imperial College London, UK, December 2018. [Link to associated blog post:](#) 
2. S. Moret and F. Maréchal. *Energyscope: modeling a national energy system to support decision-making*. Invited talk, International Conference on the Management of Energy, Climate and Air for a Sustainable Society, Cuba, July 2018.
3. S. Moret. *University and Sustainability: il ruolo dell'università nella transizione energetica*. Invited talk, JADE Italia meeting, Italy, May 2018.
4. S. Moret. *Uncertainty: Sensitivity analysis and robust optimization*. Invited talk, Modeling and optimization of ship energy systems workshop, Switzerland, October 2017.
5. S. Moret, V. Codina Gironès, M. Bierlaire and F. Maréchal. *The impact of uncertainty in national energy planning*. Poster presentation, Energy Systems Conference, UK, June 2016.
6. S. Moret, M. Bierlaire and F. Maréchal. *Uncertainty classification for strategic energy planning*. Poster presentation, SIAM Conference on Uncertainty Quantification, Switzerland, April 2016.
7. S. Moret, M. Bierlaire and F. Maréchal. *Robust optimization for strategic energy planning*. Conference presentation, 1st European Conference on Stochastic Programming and Energy Applications, France, September 2014.
8. S. Wiemer and S. Moret. *Geothermal reservoir processes: towards the implementation of research into the creation and sustainable use of enhanced geothermal systems (GEOTHERM-2)*. Invited talk, Competence Center Environment and Sustainability conference, Switzerland, February 2014.
9. S. Moret and A. Lorenzoni. *Energia elettrica, vettore efficiente negli usi finali*. Invited talk, University of Padova, December 2013.

Teaching activities

Lecturer:: *Energy Conversion and Renewable Energy*, EPFL Master course, Fall 2018. Videos of the course publicly available online 

Supervision of students:: co-supervised 9 Master theses, 10+ semester projects

Teaching assistant:: Lectures, exercises and management for Master level and PhD level courses at EPFL (years 2013-2019).

Master Theses (co-supervision).....

1. N. Cobo-Losey Rodriguez. *Cruise-ship energy system design and optimization under uncertainty*. Universidad Pontificia Comilla (Spain), 2018.
2. S. Breton. *A GIS-integrated methodology for the optimal design of a district heating network - A case study of the city of Sion*. EPFL (Switzerland), 2017.

3. P. Campos. *Assessment of energy generation technologies at an urban scale. Case study: Concepción, Chile.* Northwestern University (USA), 2016.
4. M. Nasato. *Biomass energy pathways in Switzerland.* University of Padova (Italy), 2016.
5. A. Boss. *Integration of Geothermal Energy from Medium-Depth Aquifers in New Urban Districts - The Case Study of Malley (Lausanne, Switzerland).* EPFL (Switzerland), 2016.
6. J. Unternährer. *Combining Geographical Information Systems and Optimization for Geothermal Energy Integration in Urban Systems - The case study of the City of Lausanne.* EPFL (Switzerland), 2016.
7. F. Fogari. *Aquifer thermal energy storage modelling and integration in district heating system applied to the Lausanne city case.* University of Genova (Italy), 2015.
8. F. Amblard. *Geothermal energy integration in urban systems. The case study of the city of Lausanne.* EPFL (Switzerland), 2015.
9. M. Pernet. *Smart heat design – urban energy system design under uncertainty.* EPFL (Switzerland), 2014.

Individual reviewer activities

Reviewer for: *Sustainable Cities and Society, Energy Conversion and Management, European Journal of Operational Research* journals

Other interests

Music: guitar player

Sports: running, mountaineering

Traveling & photography

Writing, literature & philosophy

References

Available upon request from EPFL, University of Padova, University of California Davis, FIAMM Spa, ACC Compressors Spa

Last updated: March 14, 2019