

# Gianluigi Lo Basso

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## SKILLS

**Keywords:** Renewable Energy, Hybrid Systems, Smart Grid, Hydrogen end-uses, H<sub>2</sub>NG blends, CHP plants, CCHP plants, Gas and Steam Turbines, Combined Cycles, USC power plants, Dynamic models development, Energy management, Electrical Market mechanisms, Techno-economic feasibility analysis, Budgeting for national and international research project proposals, Teaching, Public speaking.

**Technical:** Adobe Photoshop CS3/CS4; FileMaker 8. Pro; Minitab 14; Mathcad 13; Madonna 8; Solidworks 2008 ; Cosmos Works 2008; Cosmos Flow Works 2008; Cosmos Motion 2008; GATE cycle; Termus 16.0 ; DOCET; X CLIMA ; Solarius-PV 5.0; Tsol Pro 4.5; Hybrid 2; HOMER 2.68; Matlab Simulink; Master Clima 11300.

**Other:** Scientific reviewer for international journals:  
*Renewable and Sustainable Energy Reviews* - Ed. Elsevier  
*Energy and Buildings*- International Journal - Ed. Elsevier  
*Energy* -International Journal - Ed. Elsevier  
*Sustainability*- Ed. MDPI AG

**Linguistic:** Italian (mother tongue), English (Advanced).

## CERTIFICATION

2011 Building Energy Auditor License, Regional Specialisation course (160 hours)  
2010 Professional Engineer License

## EXPERIENCE

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| Since March 2016                   | <i>HyDEP s.r.l. Lodi (Italy)</i><br>Process Engineer for Mass and heat balances for alkaline electrolysers design, Hydrogen piping and purifying systems                           |
| April-July 2014:                   | <i>H2 Nitidor s.r.l Milan (Italy)</i> - Technical advisor for energy-economic feasibility analysis for off-grid hydrogen-based dwellings in different climate areas                |
| April 15-September 15, 2010:       | <i>ENEA (Italian National Agency for New Technologies, Energy and Sustainable Economic Development)</i> - Technical Advisor for CCHP plant design and techno-economic feasibility. |
| September 19, 2009-March 21, 2010: | <i>SAE (Energy services for athenaeum)</i>   |

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|                             | <i>Sapienza, University of Rome</i> -<br>Internship in Central Technical Division<br>for the University Smart Grid<br>development.                                   |
| January 2009–February 2011: | <i>E-ON Energy (Italy)</i> –Sales account for<br>Business Customers. Contractor for<br>electricity and natural gas supply.   |
| May 2008–December 2008:     | <i>Acea Electrabel</i> – Sales account for<br>Business Customers. Contractor for<br>electricity, energy services, data<br>monitoring software, renewables<br>supply. |
| June 1995–May 2008:         | Other activities (non–technical)   |

## EDUCATION

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| October 2014:       | Ph.D. in “Energy Saving and Distributed<br>Micro Generation” . DIAEE (Department of Astronautics,<br>Electrical and Energy Engineering)<br>Sapienza, University of Rome.<br><i>Thesis: Hybrid system for renewable hydrogen end use:<br/>experimental analysis for performance assessment on<br/>the integrated CHP reciprocating engine fuelled with H<sub>2</sub>NG<br/>blends.</i> |
| October 31, 2014    | Ph.D. graduation with honour.   |
| September, 2014     | Selected Researcher for ENERSTORE 2014, International<br>Grant Winner for attending specialist summer school on<br>energy storage systems at TU–Dresden<br>(Technische Universitat of Dresden) , Germany  |
| November 2010–2014: | Ph.D. Student, Scholarship Winner, first place with a score<br>100/120 in “ Energy Saving and Distributed Micro<br>Generation” . DIAEE (Department of Astronautical,<br>Electrical and Energy Engineering) - Sapienza, University<br>of Rome.   |
| February 27, 2009:  | Master’ s Degree in “ Energy and Nuclear Engineering” ,<br>105/110 at Tor Vergata University of Rome.<br><i>Thesis: Energy rationalization of INDESIT manufacturing<br/>plant located in Melano (Italy).</i>  |
| April 27, 2005:     | Bachelor’ s Degree in “Mechanical Engineering” ,<br>101/110 at Tor Vergata University of Rome.<br><i>Thesis: USC (Ultra Super Critical) steam power plants for<br/>energy production.</i>   |

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July 1994:

Scientific Studies Degree 46/60, at Liceo Scientifico San Leone Magno, Rome (Italy).

## LIST OF INTERNATIONAL PUBLICATIONS

1. DE SANTOLI, L., **LO BASSO, G.**, BRUSCHI, D., (2014), A small scale H<sub>2</sub>NG production plant in Italy: techno-economic feasibility analysis and costs associated with carbon avoidance. *International Journal of Hydrogen Energy*, ed. Elsevier.
  2. DE SANTOLI, L., **LO BASSO, G.**, BRUSCHI, D., (2013), Hybrid system with an integrated CHP plant fuelled by H<sub>2</sub>NG blends: theoretical energy-environmental analysis and foreseeable optimizations. *Energy and Building*, ed. Elsevier.
  3. DE SANTOLI, L., **LO BASSO, G.**, BRUSCHI, D., (2013), Energy characterization of CHP fuelled with hydrogen enriched natural gas blends. *Energy*, ed. Elsevier.
  4. DE SANTOLI, L., **LO BASSO, G.**, BRUSCHI, D., (2013), Hydro methane blends use in a CHP plant: an energy-environmental analysis. In: CLIMA 2013 – 11th REHVA World Congress and the 8th International Conference on IAQVEC, 16 - 19 June, Prague, Czech Republic.
  5. DE SANTOLI, L., **LO BASSO, G.**, BRUSCHI, D., (2013), Preliminary experimental analysis of a CHP hydromethane system. *Journal of Energy and Power Engineering*, ed. David Publishing.
  6. L. DE SANTOLI, **LO BASSO G.** (2011) Preliminary experimental analysis of a CHP hydromethane system. 6<sup>th</sup> Dubrovnik conference on sustainable development of energy, water and environment systems, September 25<sup>th</sup> - 29<sup>th</sup> 2011, Dubrovnik, Croatia.
  7. DE SANTOLI L., ALBO A., BRUSCHI D., **LO BASSO G.**, NASTASI B. (2014) RES (Renewable Energy Sources) availability assessments for Ecofuels production at local scale: carbon avoidance costs associated to a hybrid biomass/H<sub>2</sub>NG-based energy scenario. *Energy Procedia*. In press
  8. DE SANTOLI L., **LO BASSO G.**, ALBO A., BRUSCHI D., NASTASI B. (2015) Single cylinder internal combustion engine fuelled with H<sub>2</sub>NG operating as micro-CHP for residential use: preliminary experimental analysis on energy performances and numerical simulations for LCOE assessment. *Energy Procedia*.
  9. **LO BASSO G.**, DE SANTOLI L., ALBO A., NASTASI B. (2015) Hydrogen-Natural Gas mixtures (H<sub>2</sub>NG) effects on energy performances of a condensing micro-CHP for residential applications: an expeditious assessment of water condensation and experimental analysis. *Energy*, Ed. Elsevier
  10. DE SANTOLI L., **LO BASSO G.**, NASTASI B. (2015) Sapienza Distributed Generation Lab for Smart Energy Systems: research activities outline. 10<sup>th</sup> Conference on Sustainable Development of Energy, Water and Environment Systems - SDEWES 2015, Dubrovnik, 27<sup>th</sup> Sep. - 2<sup>nd</sup> Oct. 2015
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11. NASTASI B., **LO BASSO G.** (2016) Hydrogen to link heat and electricity in the transition towards future Smart Energy Systems. Energy, Ed. Elsevier
  12. **LO BASSO G.**, PAIOLO R. (2016) A preliminary energy analysis of a commercial CHP fuelled with H<sub>2</sub>NG blends chemically supercharged by renewable hydrogen and oxygen. Energy Procedia, Ed. Elsevier
  13. **LO BASSO G.**, NASTASI B., ASTIASO GARCIA D., CUMO F. (2017) How to handle the hydrogen enriched natural gas blends in combustion efficiency measurement of conventional and condensing boilers. Energy, Ed. Elsevier
  14. SALATA F., GOLASI I., DOMESTICO U., BANDITELLI M., **LO BASSO G.**, NASTASI B., DE LIETO VOLLARO A. (2017) Heading towards the nZEB through CHP + HP systems. A comparison between retrofit solutions able to increase the energy performance for the heating and domestic hot water production in residential buildings. Energy Conversion and Management, Ed. Elsevier

#### LIST OF PUBLICATIONS UNDER REVIEW

1. **LO BASSO G.**, NASTASI B., SALATA F., GOLASI I. (2016) Energy retrofitting of residential buildings - how to couple CHP and HP for thermal management and off-design operation. Applied Energy, Ed. Elsevier
  2. DE SANTOLI L., **LO BASSO G.**, NASTASI B. (2016) The Potential of Hydrogen Enriched Natural Gas deriving from Power-to-Gas option in Building Energy Retrofitting. Energy and Buildings, Ed. Elsevier
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