



SAPIENZA
UNIVERSITÀ DI ROMA

National Study Day on Mini Grids for Urban, Rural and Industrial Development

*Engineering Faculty
University of Rome "Sapienza"*

*"Council Presidency Hall" and "Great Hall -1"
"Sala del Consiglio della Presidenza"*

Via Eudossiana 18, 00184 - Rome, Italy

June 21st, 2018

Presented by:



Supported by:



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UNIVERSITÀ DI ROMA



“National Study Day on Mini Grids for Urban, Rural and Industrial Development”

The day focuses on the new panorama of mini and micro grid, to deepen with the national and international experiences the knowledge developed by the various actors operating in Italy, in industrialized countries and in the rural areas of developing countries.

The main topics of the day are:

- 1) Mini Grid in Europe and US for Industrial and Residential districts
- 2) Micro Grid for Rural Electrification and Access to Energy
- 3) Research and innovation in models and logic of design, management and storage in mini-grids.

Italian lecturers and researchers will meet their Northern European, US and LDC counterparts to present the results of research and development activities in view of collaborations and new projects under Horizon 2020 (and other European calls), in partnership with several public and private international organizations.

To better understand and share this broad scope of research, as part of the study activities promoted by AIMSEA, the offices of Perugia, Rome and Pisa propose a study day in Rome on 21 June 2018.

The day of study, in addition to representing a moment of meeting between teachers and researchers of Italian Universities in the field of Energy Systems, also wants to take the opportunity to propose international interventions and by companies in the sector. Interventions by the academic world of 20 minutes are planned (for the presentation of each research group and its activities in the field of Energy Systems, including the presentation of a case study, hopefully an activity carried out in collaboration with companies), plus some interventions by companies in the sector.

It will also be an opportunity to present the activities of RES4Africa, an association grown around the activities of Italian companies, promoted by Enel, for the electrification in the Mediterranean and Sub-Saharan Africa, to strengthen the collaboration between industrial and university realities in the difficult task to develop projects and research in a field in constant expansion thanks to the evolution of the technological quality and the competitiveness of the costs of the accumulation, the monitoring the control and the distributed generation. An open discussion on the remarkable quality of technical-scientific works carried out over the years on modelling, development of prediction and optimization tools thanks to computational methods made possible by the new amount of available basic data and the experience and refinement of design techniques. Three working groups will complete the meeting:

1) **H2020 and European programs, Universities and Companies engaged in Mini Grids** various calls are now open about Mini grid is the time to join partners to participate, the day will meet companies and universities interested. A time for the meeting between University and Companies.

2) **Responsible Technologies** (Tecnologie Solidali onlus) will present the activities of FS4MGO, research group, that is training students in collaboration with the interested companies and academies, in East Africa and Central America, through their *XII Field Study Abroad* and the *Micro Grid Academy* of RES4Africa.

3) The **US National Academy of Engineering and Science** meets (online) universities interested in participating in the award conferred by Washington to students and PhD students (Italy, the first European state to be included with new offices outside the 50 universities United States currently associated with the program).

This working groups will be managed by the **FS4MGO International Research Group**, which brings together many speakers of the day who are engaged in data collection, analysis and simulation of micro



June 21st, 2018 - Draft Program

8.30am Welcome Reception

9.00 am Introduction and greetings

- *Antonio D'Andrea*, Engineering Faculty Dean, University of Rome, Sapienza
- *Franco Rispoli*, University of Rome, Sapienza, AIMSEA

9.15 am - 11.15 am National Research Groups

Chairman: Gianni Bidini, University of Perugia, President of AISMEA

- *Gabriele Comodi*, Marche Polytechnic University
- *Linda Barelli, Francesco Fantozzi, Andrea Ottaviano, N. Stenico*, FS4MGO, University of Perugia
- *Emanuele Martelli*, Polytechnic of Milan
- *Alessandro Corsini, Andrea Micangeli, Carlo Tacconelli, Riccardo Del Citto*, FS4MGO, Sapienza
- *Michele Bianchi, Maria Alessandra Ancona, Francesco Melino*, University of Bologna
- *Arturo de Risi, Antonio Ficarella, Maria Grazia de Giorgi*, University of Salento

11.30 am - 1.00 pm Testimonials from International Research Groups

Chairmen: Andrea Micangeli, FS4MGO University of Rome, Sapienza and Roberto Vigotti, RES4Africa

- *Vijay Modi*, Department of Mechanical Engineering at Columbia University
- *Susann Strizke*, FS4MGO, Smith School of Enterprise and Environment, University of Oxford
- *Matt Sisul*, FS4MGO, Engineering for Developing Communities, Columbia University
- *Ignacio Perez-Arriaga*, FS4MGO, MIT Energy Initiative
- *Christian Noce*, Network Technologies Department, ENEL
- *Salvatore Vinci*, IRENA, International Renewable Energy Agency

1.00 pm - Break for Lunch

2.00 pm - 4.00 pm National Research Groups

Chairman: Umberto Desideri, University of Pisa

- *Pietro Paolo Morrone*, University of Calabria
- *Davide Poli, Paolo Cherubini, Davide Fioriti, Romano Giglioli* FS4MGO, University of Pisa
- *Maurizio De Lucia, Valeria Gambino*, University of Florence
- *Giuseppe Franchini, Antonio Perdichizzi*, University of Bergamo
- *Vincenzo Mulone*, University of Rome Tor Vergata
- *Marco Sorrentino*, University of Salerno

4.00 - 5.00 pm- 3 WORKING GROUPS on proposals for International Collaborations:

1) Universities, UN and Companies cooperation for European/International Projects

- *Francesco Fantozzi*, EU LIFE i-REXFO - food waste reduction with biowaste2biogas process
- *Matthew Allen, Bernard Kane*, Energy Efficiency Team of the UN/WFP
- *Francesco Pallocca*, UNIDO
- *Simona De Julii*, ENEA
- *Giorgio Bartolomucci*, International Cooperation Fair
- *Veronica Magli*, Liter of Light
- *Luca Piffer*, Plug the Sun – Maccaferri Industrial Group
- *Roberto Zuccarelli, Pietro Baggi*, SIEL
- *Claudio Pedretti*, Wind-kinetic Company
- *Gianluca Biscotti*, BFP Company
- *Santilli Antonella*, Enel Green Power



2) Scholars and Students on Micro Grid Field Experiences

- *Saverio Frullani, Marco Aresti*, Res4Africa-Micro Grid Academy,
- *Paolo Cherubini, Caterina Celia*, Sapienza-Field Study Abroad.

3) U.S. Grand Challenge Scholar Program National Academy of Engineering,

- *Theodore Endreny*, ERE Director, SUNY, FS4MGO,
- *Carlo Tacconelli, Alex Carillo*, Sapienza
- *Luca Cioccolanti, e-campus*
- *Marco Marchetti*, Vice Rector, University of Molise.

5.00 pm Closing remarks and final greetings

- *Ignacio Perez-Arriaga*, FS4MGO, MIT Energy Initiative
- *Vincenzo Naso*, CIRPS, FS4MGO, University of Rome Sapienza

List of Acronyms:

AIMSEA – Associazione Italiana per le Macchine a Fluido e per i Sistemi per l'Energia e l'Ambiente

DIMA – Dipartimento di Ingegneria Meccanica ed Aerospaziale

EGP – Enel Green Power

FSA – Field Study Abroad

FS4MGO – Field Study for Mini Grid Optimization (International Research Group)

GCSP -Gran Challenge Scholar Program

IRENA – International Renewable Energy Agency

LDC – Less Developed Countries

MIT – Massachusetts Institute of Technology

RES4Africa -Renewable Energy Solutions for Africa

SUNY – State University of New York

UNIDO – United Nation Industrial Development Organization

UN WFP – United Nation World Food Programme

US NAE – United States National Academy of Engineering

Organizer's WebSites:

<http://www.aimsea.it>

<http://www.res4africa.org>

<http://www.tecnologiesolidali.org/>

<http://www.ing.uniroma1.it/archivionotizie/national-study-day-mini-grids-urban-rural-and-industrial-development>

The prestigious Hall of the Presidency welcomes a limited number of people, to confirm your participation please write an email to: andrea.micangeli@uniroma1.it