



PhD in SCIENZE E TECNOLOGIE ENERGETICHE E NUCLEARI / ENERGY AND NUCLEAR SCIENCE AND TECHNOLOGY - 39th cycle

THEMATIC Research Field: SIMULATING THE ENERGY DEMAND PROFILE IN SPACE AND TIME: USERS' BEHAVIOUR IN THE DYNAMIC ANALYSIS OF THE ENERGY SYSTEM

Monthly net income of PhDscholarship (max 36 months)

€ 1750.0

In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity

Motivation and objectives of the research in this field

Energy system models are tools that virtually represent the energy flows in space and time within given boundaries. They enable the exploration of the technologies role in different scenarios and eventually make it possible to plan the energy transition. One core activity of this research field concerns the estimation of the energy needs in the end-use sectors, which pretty much depend on the individual or collective users' behavior. The aim is to study behavioral habits to simulate their impact on the demand. The research would enable to carry out dynamic analysis of the match between energy demand and supply within the national energy system, also under different scenarios and it would enable improving studies on the impact of demand side management.

Methods and techniques that will be developed and used to carry out the research

The aim of the study entails the need for the candidate to find suitable datasets for the study and organize them coherently. This could lead to apply data analysis for energy systems, handling and analyzing possibly large amounts of data, in heterogeneous forms and from a variety of sources. Various techniques of statistical data analysis, data science, and big data analysis might be explored in order to define tools and models for simulating energy profiles on different temporal and spatial scales.



Educational objectives	The candidate will gain a deep understanding of the end demand sectors and its role within the broader national energy system. He/she will improve his/her ability to handle and elaborate new tools of analysis and modelling tools.
Job opportunities	R&D sectors of energy utilities, engineering and design companies within the energy field. National governmental or non-governmental organizations, energy agencies and research institutes. Innovation and consulting companies.
Composition of the research group	1 Full Professors 1 Associated Professors 2 Assistant Professors 6 PhD Students
Name of the research directors	Mario Motta

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Additional support - Financial aid per PhD student per year (gross amount)			
Housing - Foreign Students	--		
Housing - Out-of-town residents (more than 80Km out of Milano)	1st year	2nd year	3rd year
	2500.0 € per student	2500.0 € per student	2500.0 € per student
max number of financial aid available: 1, given in order of merit ..			

Scholarship Increase for a period abroad	
Amount monthly	875.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
Financial aid per PhD student is available for purchase of study books and material, funding for participation in courses, summer schools, workshops and conferences, instrumentations and computer, etc. The amount is about Euro 3.000,00. Teaching assistantship: Availability of funding in recognition of supporting teaching activities by the PhD student. There are various forms of financial aid for activities of support to the teaching practice. The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations. Computer availability: individual use.



Desk availability: individual use.