

Allegato n 3

PHD COURSE IN ENERGY SCIENCE AND ENGINEERING	
Total positions available	<p>n.3 positions with scholarship (included one funded by ENEA)</p> <p>n.2 positions with scholarship reserved to DM 117/2023</p> <p>n.4 positions with scholarship reserved to DM 118/2023 (topic PNRR)</p> <p>n.1 position with scholarship funded by the National Centre for Sustainable Mobility</p> <p>n.1 position reserved for employee of the company Graded Spa</p>
Deadline for applications	31 July 2023
Requirements for the scholarships reserved to DM 118	<p>TOPIC: Green Revolution and Ecological Transition of PNRR</p> <p>Candidates who choose the scholarship reserved for DM 118 on the topic "Green Revolution and Ecological Transition of PNRR" must declare that they are aware that the doctoral program includes at least 6 months in the company and at least 6 months abroad, as well as submit a research project that develops themes consistent with Mission 2 of the PNRR Green Revolution and Ecological Transition, such as the reduction of the environmental footprint of highly energy-intensive sectors, energy efficiency and reduction of environmental impact, the energy enhancement of biomass, the promotion of the use of renewable sources for supply of electricity and heat, the optimization of the use of resources in a perspective of virtuous supply chain, in order to promote the integration between different infrastructures, the sustainability of production processes and the circular economy.</p>
Requirements for the scholarships reserved to DM 117	<p>TOPIC 1: Study, design and development of advanced technological systems, considered disruptive, to increase the efficiency and environmental sustainability of future vehicles with zero environmental impact</p> <p>TOPIC 2: Development of realtime digital twin of continuous casting thermo-mechanics by using the meshless numerical method</p> <p>Candidates who choose the scholarship reserved for DM 117 must declare that they are aware that the doctoral program includes at least 6 months in the company and at least 6 months abroad, as well as submit a research project that develops</p>

	themes consistent with the aforementioned Topic 1 or Topic 2.
Requirements for the scholarship funded by the National Centre for Sustainable Mobility	<p>TOPIC: Development of innovative solutions for the energy efficiency of infrastructures aiming at sustainable mobility as per spoke 7 of the National Centre for Sustainable Mobility.</p> <p>Candidates who choose the scholarship funded by the National Centre for Sustainable Mobility must declare that they are aware that the doctoral program includes at least 3 months abroad, as well as submit a research project that develops themes consistent with the aforementioned Topic.</p>
Requirements for the other scholarships (not reserved)	Candidates who choose the not reserved scholarship must declare that they are aware that the doctoral program includes at least 3 months abroad.
Course duration	Three years
Scientific sectors	ING-IND/08, ING-IND/09, ING-IND/10, ING-IND/11, ING-IND/22, ING-IND/33, ING-IND/17, CHIM/07
Education aims	<p>The ESE PhD course aims to train professionals/researchers with high scientific qualifications and an interdisciplinary vision of energy issues and the related environmental and social impact, which affect all countries of the world and in particular Italy, with skills also managerial and specific in various technological fields.</p> <p>The training project of the ESE PhD program envisages that, during the first year, the doctoral students acquire interdisciplinary skills, participating both in the courses provided by the members of the PhD committee, and in multidisciplinary seminars held by international experts. At the same time, PhD students carry out research activities on aspects both of an interdisciplinary nature and aimed at the specific scientific sector of interest. The path of doctoral students continues in the second and third year with the development of further skills in the context of specific doctoral projects, by carrying out research activities focused on frontier scientific and technological issues, as well as participation in national and international workshops and conferences.</p> <p>The ESE PhD course focuses on the following topics: Energy sources and energy conversion systems; Energy management; Numerical modeling of heat and mass transfer problems; Renewable energy sources; Heating, ventilation and air conditioning systems; Energy planning; Energy communities; Environmental sustainability; fuel cells; Eco-sustainable fuels; Use of hydrogen and energy storage systems; Propulsion systems for sustainable mobility; Energy efficiency for buildings and industry; Distributed generation and grid integration of renewable energy sources; Materials for the production, storage and sustainable conversion of energy; Thermofluid dynamics in bioengineering; Fundamentals of chemical processes for energy.</p> <p>The research activities are carried out under the supervision of the researchers who participate in the Academic Board and who already have numerous collaborations with research institutes and industrial partners engaged in research and development activities in the sectors of interest of the doctorate, not only in the scope of numerous national and international projects, but also of research contracts and technical-scientific consultancy.</p>
Coordinator	Prof. Laura Vanoli
Specific requirements	- Italian “laurea specialistica” or “laurea magistrale” awarded in

	<p>accordance with the Italian DM 509/1999 and subsequent amendment and additions.</p> <p>“laurea” or “diploma di laurea” awarded in earlier courses whose legal duration is at least four years.</p> <ul style="list-style-type: none"> - A degree from a foreign University equivalent to the above degrees. <p>In the latter case, if the title has not already officially declared equivalent to the Italian degree (Declaration of Value), the decision on admission will be demanded to the examination board for admission to the PhD program.</p> <p>If admitted, in order to finalize the enrollment, foreign students will have to send the official Declaration of Value by the deadline reported in the call.</p> <hr/>
Evaluation procedure	<p>The evaluation of the examination board for admission to the PhD program will be based on the following criteria:</p> <ul style="list-style-type: none"> - candidate’s curriculum and publications (max 60 points); - other scientific titles/certifications of experience (max 10 points); - a three years research proposal submitted by the applicant (max 20 points). - recommendation letters, with specific reference to the PhD program (max 10 points); <p>Only applicants who receive a total score of at least 60/100 after evaluation of the above-mentioned CV, titles/certificates, research proposal and recommendation letters, will be admitted to the interview.</p> <p>Applicants must submit a certificate of the exams taken for the degree, with marks obtained for each course.</p>
Evaluation of the research project	<p>Applicants must submit a research project proposal of maximum five pages (A4 format). This proposal does not represent the research that the applicant will develop during his/her Ph.D. program. The research project can receive a maximum of 20 points. If the project is not submitted with the application, the candidate will be excluded by the evaluation procedure.</p>
Interview	<p>The interview will be held on September 20th, 2023, starting from 10:00 am, at the Department of Engineering Centro Direzionale, Isola C4 - 80143 Napoli, Italy.</p> <p>The interview will be based on the discussion of the candidate’s curriculum, titles and certifications, and research proposal. During the interview, the candidate’s knowledge of English will also be assessed.</p> <p>The maximum score for the interview is 40 points. Only candidates scoring a minimum of 24 points will pass the interview.</p> <p>The interview can be held either in Italian or in English.</p>