



# PhD in SCIENCE, TECHNOLOGY AND POLICY FOR SUSTAINABLE CHANGE - 38th cycle

**PARTENARIATO PNRR Research Field: SCENARIOS FOR AN EFFECTIVE AND JUST DECARBONIZATION FOR ITALY AND THE EU**

<b>Monthly net income of PhDscholarship (max 36 months)</b>
<b>€ 1500.0</b>
In case of a change of the welfare rates during the three-year period, the amount could be modified.

<b>Context of the research activity</b>	
<b>Motivation and objectives of the research in this field</b>	<p>The thesis will help Italy develop and assess its decarbonization strategies within the EU climate policies (Fit-for-55, green new deal, and climate law). The main goal of the thesis is to develop new analytical tools which can help evaluate climate policies from multiple dimensions, including the technological one but also more social dimensions especially those related to the just transition. The framework developed with the thesis should help provide insights for policy-makers and evaluate mitigation options and adaptation strategies. The main goal is to increase knowledge on opportunities for Italy and Europe to achieve a decarbonized energy sector, with major benefits for society.</p> <p>This project research is in the framework GRINS PARTENARIATO ESTESO Growing Resilient, INclusive and Sustainable CUP D43C22003110001 Decreto di Concessione D.D. 1558 del 11/10/2022</p> <p>D.D. 341 del 15/03/2022 Avviso pubblico per la presentazione di Proposte di intervento per la creazione di “Partenariati estesi alle università, ai centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base” – nell’ambito del Piano Nazionale di Ripresa e Resilienza, Missione 4 “Istruzione e ricerca” – Componente 2 “Dalla</p>



	<p>ricerca all'impresa" – Investimento 1.3, finanziato dall'Unione europea – NextGenerationEU</p>
<p><b>Methods and techniques that will be developed and used to carry out the research</b></p>	<p>The thesis will use and develop new numerical models for Italy and the EU which integrate the energy, economic and social sectors. Models can build on existing frameworks but will need to be expanded and tailored to the use of Italy and the EU. All model development will be open source to foster replicability and open science. The applications of the models will focus on the key legislative elements of the Fit-for-55, including emission trading schemes, renewable support policies, energy efficiency targets. The models will connect the engineering components to socio-economic ones through for example the inclusion of heterogeneity in income and other socio-demographics, and thus assess the distributional implications of the decarbonization policies. In order to do so, combining insights from Integrated Assessment Models and Energy System Models could be a key factor and might offer an innovative and wider perspective. The longer-term outlook will be that of net-zero and might also include climate change risks and impacts into the modeling framework to devise strategies which are both low carbon and resilient. The evaluation of different pathways in the energy transition should also take into consideration the effects of climate change on society and thus adaptation strategies, providing robust and valuable insights.</p>
<p><b>Educational objectives</b></p>	<p>The objectives are to educate on the application of energy-climate-economy models and other analytical tools for a transparent assessment of climate mitigation policies.</p>
<p><b>Job opportunities</b></p>	<p>Professional careers up in universities, research organizations, national and international institutions interested in ex-ante evaluation of energy and climate policies through mathematical models.</p>
<p><b>Composition of the research group</b></p>	<p>1 Full Professors 0 Associated Professors 2 Assistant Professors 0 PhD Students</p>



<b>Name of the research directors</b>	Prof. Massimo Tavoni
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<b>Contacts</b>	
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<b>Additional support - Financial aid per PhD student per year (gross amount)</b>	
<b>Housing - Foreign Students</b>	--
<b>Housing - Out-of-town residents (more than 80Km out of Milano)</b>	--

<b>Scholarship Increase for a period abroad</b>	
<b>Amount monthly</b>	750.0 €
<b>By number of months</b>	6

**Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information**

Computer and desk will be provided. Teaching assistantship opportunities will possibly be available. The candidate will have the opportunity to be affiliated with the European Institute on Economics and the Environment, part of Fondazione CMCC, the Italian research institute on climate change of which Politecnico di Milano is a founding member.

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