

**RICHIESTA PER L'ATTIVAZIONE DI UN ASSEGNO DI RICERCA**  
**Dipartimento di Scienze Aziendali – Università di Bologna**

**Titolo italiano:** L'industria europea dell'energia verde: strumenti e politiche a supporto della transizione climatica

**Titolo inglese:** The European green energy industry: instruments and policies in support of the climate transition

**Acronimo di progetto:** GREENENERGY

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**Settore scientifico disciplinare:** ING-IND/35

**Durata del piano formativo:** 12 mesi

**Sede della ricerca:** DiSA - Università di Bologna

**Co-finanziamento:** € 0

**Progetto di riferimento:** PRIN 2022 - The European green energy industry: equity financing instruments and policies in the climate action agenda

## **1. Motivation and objectives of the research project**

The threats of environmental issues linked to the global climate change have been recognized to be one of the most serious problems challenging the world (Bailey and Tatikonda, 2018; Lee et al., 2015; Lerner, 2010; Zhang et al., 2019). Energy-intensive industries are listed as one of the main industries that should be strongly committed to sustainability transition. The transition to climate neutrality and alignment with EU Green Deal-inspired policies offers an opportunity for green energy firms to engage in transformative climate and innovation actions that meet the urgency of the climate crisis in this decade.

The extant academic literature has so far mainly investigated the role of established firms as valuable actors in the broader cleantech field, without focusing on green energy early-stage ventures and Small and Medium Enterprises (SMEs). Such firms are deemed to play a significant role in pursuing innovation in this field (Cohen and Winn, 2007; Dean and McMullen, 2007; Garud and Karnøe, 2003; Hart and Milstein, 1999; McDaniels and Robins, 2017; Owen et al., 2018; Wüstenhagen et al., 2008), but they often face financial constraints to develop and scale their business (Ghosh and Nanda, 2010; Giudici et al., 2018; Hornuf and Schwienbacher, 2018; Josefy et al., 2017) because of high levels of uncertainty characterizing their inventions and their capital-intensive nature.

The project will involve the following research activities:

- 1) “The mapping of green energy in Europe”: is aimed at building a complete dataset of green energy companies with associated financial accounting information, patent data, and sources of financing. We will map the geographical distribution, the evolution over time, the current size, the patenting activities, and the sources of financing of the green energy sector.
- 2) “The Collection of EU-level and country-level targeted policies and regulations” that are central to the European Green Deal (and that can be declined at both European and national level).
- 3) “The enabling factors for the development of green energy firms”: is aimed at exploring the effects of the implementation of specific and targeted policies and regulations (at both EU-level and country-level) that are central to the European Green Deal.

The results stemming from such research activities will lead to the definition of a set of policy recommendations.

## **2. Methodology of the research**

The research is interdisciplinary, innovative, sustainable and adopts heterogeneous methodological approaches. More precisely, the project will be characterized by the following specificities:

- a multi-country perspective, based on the analysis of green energy firms in the main European Member States;
- a focus on the policies and regulations that govern the green energy industry at EU-level and country-level
- the combination of different research methods (i.e., quantitative analyses, interviews with relevant actors, extensive reviews, visualization techniques)

#### **4. Training plan**

The project is structured in the following working packages (WPs), as described below (with the indication of length of effort expressed in months), and summarized in Figure 1.

##### WP0: Project management (months 1-12)

The research fellow will support the tutor in the management of the project, for instance in terms of organizing meetings with relevant stakeholders or other researchers.

##### WP1: Analysis of the literature (months 1-2)

In this WP, the research fellow will be in charge of understanding the available and the potential contribution of this research project in respect to the extant research. This will be aided by the tutor, who will provide a first list of relevant references both regarding the academic literature and the policy landscape regarding the energy context.

##### WP2: Data collection and database creation (months 3-7)

The research fellow will collect a dataset of policies and regulatory initiatives at EU-level and country-level in three steps.

1. First, the research fellow will analyse the existing literature, news and newspapers to list the regulations that have been introduced at EU level and in each EU country in the past years and categorize them along a series of relevant dimensions.
2. Second, the research fellow will conduct a set of interviews with experts in the green energy industry from selected countries, including governmental officials, firm managers and investors to gauge insights into the ruling of such policies and regulations. As to this last point, the research fellow will try to benefit from the collaboration and connections with stakeholders that the Observatory on Climate Finance of Politecnico di Milano and the Green Team of Politecnico di Torino have. In this regard, a distinction between supply-side policies

(such as public R&D) and deployment policies (such as regulations and standards) will be considered. Moreover, the research fellow will also classify regulations and policies into market-based and not market-based.

3. Third, the research fellow will explore the stringency of environmental regulations by complementing the dataset on policies with multiple quantitative indicators of the stringency of government environmental policies, based on research by Botta and Koźluk (2014) and the OECD database (OECD PSI Index, which represents the general framework of environmental policies' evolution at country level).

WP3: Data analysis, writing, and dissemination (months 8-12)

In this WP, the research fellow will collaborate with the tutor to the preparation of the following deliverables:

- 1) An econometric-based working paper which aims at exploring the effects of the implementation of specific and targeted policies and regulations (at both EU-level and country-level) that are central to the European Green Deal on the financial and innovative performance of green energy firms. Data on energy SMEs will be available through the collaboration with Politecnico di Milano and Politecnico di Torino.
- 2) A working paper which aims at exploring if Venture Capital (VC) investments in the green energy sector are driven by different environmental policies, namely if any reaction is foreseen with the introduction of regulatory policies in the field (e.g., instruments that impose a pollution cost on companies, such as environmental taxes). Data on VCs will be available through the collaboration with Politecnico di Milano and Politecnico di Torino.
- 3) A descriptive report mapping the differences among European countries in their intensity to introduce policies and regulations.

The working papers will be presented to international conferences. The technical report will be disseminated through the PRIN project, led by the tutor for the local unit of Bologna, and the connection with relevant stakeholders in Italy and in Europe.

**Figure 1 – Expected timeline of the project**

WP/Months	1	2	3	4	5	6	7	8	9	10	11	12
WP0: Project management												
WP1: Analysis of the literature												
WP2: Data collection and database creation												
WP3: Data analysis, writing, and dissemination												

## 5. Profile of the research fellow

### Desirable profile

The following points describe the preferential characteristics of the research fellow:

- Have experience in carrying out academic or policy-practice research activities in the domain of entrepreneurship, innovation, financing, sustainability;
- Have experience in the management and analysis of quantitative data, with the support of data spreadsheets (e.g., Excel) or statistical softwares (e.g., Stata);
- Have experience in conducting interviews;
- Have experience in analysing qualitative data (e.g., Nvivo);
- Have experience in the design and administration of online surveys (e.g., via Qualtrics);
- Have at least an intermediate level of English (CEFR B2) or preferably advanced or proficient level (CEFR C1 or C2);
- Demonstrate experience in the organization and management of dissemination efforts towards managers, policy-makers, academia, or the general public;
- Have published reports or articles based on research efforts.

### Expected academic outputs

At the end of the 12 months of the project, the following deliverables are expected:

- 2 working papers based on the data collected and analyzed within the project, co-authored with the tutor, presented to the main international conferences (e.g., AOM, Babson, EURAM, EGOS) and to be submitted to entrepreneurship, management, human resources, sustainability international outlets (e.g., Research Policy, Entrepreneurship Theory and Practice, Journal of Business Venturing, Journal of Management Studies, Academy of Management Journal, Work Employment and Society, Ecological Economics).
- 1 technical report to disseminate the results about the two lines of research.

## 6. Six best publications of the tutor over the last 5 years

1. Fini R., Jourdan J., Perkmann M., Toschi L. (2023) A New Take on the Categorical Imperative: Gatekeeping, Boundary Maintenance, and Evaluation Penalties in Science. **Organization Science**, 34(3): 1090-1110, <https://doi.org/10.1287/orsc.2022.1610> ISSN: 1526-5455
2. Toschi L., Ughetto E, Fronzetti Colladon A. (2023) The identity of social impact venture capitalists: exploring social linguistic positioning and linguistic distinctiveness through text

mining. **Small Business Economics**, 60: 1249-1280, <https://doi.org/10.1007/s11187-022-00655-0>  
ISSN: 1573-0913.

3. Munari F., Toschi L. (2021). The impact of public funding on science valorisation: An analysis of the ERC Proof-of-Concept Programme. **Research Policy**, 50:6 Open Access. 10.1016/j.respol.2021.104211
4. Mura M., Longo M., Toschi L., Zanni S., Visani F., Bianconcini S. (2021) The role of geographical scales in sustainability transition: An empirical investigation of the European industrial context. **Ecological Economics**, 183: 106968, DOI: 10.1016/j.ecolecon.2021.106968.
5. Giuri P., Munari F., Scandura A., Toschi L. (2019) The strategic orientation of universities in knowledge transfer activities. **Technological Forecasting and Social Change**, 138: 261-278, DOI: 10.1016/j.techfore.2018.09.030 – ISSN: 0040-1625.