



Energy and Environmental Management

Energy and Environmental Management is increasingly assuming a **pivotal role in strategic thinking** for companies, governments, public authorities as well as for individuals and communities. Why ?

1. The Energy industry has changed dramatically in the last decade due to the **“disruptive innovations” of renewables and shale gas & oil technologies, digital energy, storage** and due to progress in market opening and regulatory reforms. Most changes will heavily impact in the current and next decade on companies, global industries and governments.
2. Attention to the **environment and sustainability**, which means a more **efficient and effective use of critical resources** (e.g., energy, water and critical metals) and reduced impacts of firm activities on **climate change** (e.g., in terms of GHG emission and pollution), is increasingly becoming a must for companies willing to compete on the global market, although it is still struggling to find a clear economic rationale.

All these issues can be included into the so called **Green Economy**, a major wave of change in the scenario to 2050

US solar and wind start to outshine gas

Renewables are top German power supplier

Enel chief: 'Carbon era is going to end'

The economic enormity of climate change

Oil slides below 30\$ on oversupply fears

Global energy saving worth at least 310 bn\$



- About **3,4 million people** worked in the EU-27 eco-industry at the end of 2017. About 2 million of these worked in Renewable and Energy Efficiency sectors.
- The European Commission estimates that the impact of the achievement of the objectives of the “Package 20-20-20” would create **2 more million of “green employees”**
- By the end of 2017, the Italian market of “green” products and services will impact on national employment for about 380 000 employees.
- The projection of employment estimates about **520.000 “green employees” in Italy by 2020**

General managers in both **traditional energy firms and utilities** (especially with business development responsibilities)

Managers in **small and new companies** competing in the **renewables, energy efficiency and digital energy sectors** (where there is a strong potential for entrepreneurial initiatives)

Analysts and experts working in **consulting firms**, in **financial institutions** and **regulation authorities**

Energy and environmental managers in manufacturing and service industries (with responsibility to manage energy, sustainability, resource management)

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Our network



The Energy & Strategy Group

- **Permanent observatories on:**
 - **Renewable sources (Solar, Wind, Biomass)**
 - **Energy Efficiency**
 - **Digital energy (Intelligent building, Smart Cities, Smart Grid)**
 - **Green Tech**
- **Applied research projects**



- Understand current and future global **energy and environment scenarios** and their implications for the long range competitiveness of companies.
- Understand **competition dynamics** and design new **business models** in the energy industry and in the environmental domain, including also Energy Service Companies (ESCOs), e-mobility, smart cities and eco-industrial parks.
- Understand and being able to evaluate **incentive mechanisms and policies** for renewable energies, energy efficiency, and natural resources conservation (e.g., feed-in tariffs, certificates, ETS, environmental taxes, standards, restrictions) as well as **regulatory frameworks** for energy, water and environmental infrastructures.



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The educational project – key goals and competences developed

- Understand the potential and design solutions for energy and critical **resource efficiency** in production and recycling processes.
- Design and implement strategic and operations **improvement projects** with focus on energy and environmental dimensions of an organization.
- Make technology and operations related decisions taking into consideration uncertainties and options brought by **energy and environmental factors**.



Energy and Environmental Management: 2nd year curriculum

Courses	Sem	ECT S	ECT S	SSD
Energy Management Lab	2	10	10	17+35
Management of Energy and Sustainability	1	10	10	35
Economics of Network Industries	1	5	5	35
Industrial Eco-efficiency	1	5	5	17
Fundamentals of Energy Technologies	1	5	5	<i>Energy</i>
Energy and Environmental Law	2	5	5	<i>Law</i>
Financial Risk Management	2	5		35
Industrial Project Management B	2	5		17
Power Production from Renewable Energy C	1	5		<i>Energy</i>
Operations Risk Management and Resilience	1	5		17
Social Innovation	1	5		35
Free FREELM	1-2	5-10		-
Final Project (Thesis)	1-2	15	15	-