

# PhD candidate position in energy economics

## I. General information

- **Research areas:** power markets modelling, market design (renewables, flexibility, capacity mechanisms), energy transition, European power systems, simulation and optimisation
- **Institutions:** Mines ParisTech – PSL Research University, Deloitte Economic Advisory
- **Location:** Paris (France)
- **Starting date:** Autumn 2018

## II. Project description

### Context

European power systems are undergoing a transformation, mainly driven by three elements of EU energy policy: rapid deployment of low-carbon technologies (renewable energies, electric vehicles, batteries, demand-response, decentralised generation...), harmonisation of national market designs, carbon pricing, implementation of capacity mechanisms... All these changes and trends are impacting the way power systems and power markets work as well as their outcomes. It raises several questions, particularly on the need to adapt market designs to ensure economically efficient functioning of the European power systems (profitability of generation assets, volatility of power prices, integration of national markets...). Sound modelling is vital to analyse the short- and long-term impacts of these energy policies, providing quantitative answers on power system outcomes or market players' behaviour.

In this context, Deloitte Economic Advisory is looking for a highly qualified PhD candidate to reinforce its energy team. The candidate's research will include the development of a power market model to quantitatively study and assess the consequences of the transformation of the European power system and the evolution of market designs. This research may for instance consider the question of investments in flexible technologies (and the incentives sent by short-term markets), the functioning of a power system with high shares of variable renewables or the consequences of non-harmonized capacity mechanisms. The PhD candidate will collaborate closely with several PhD students and post-docs already working on power system modelling within the energy team of Deloitte Economic Advisory, always eager to share their knowledge and move the research frontier a step ahead.

### Our offer

The PhD project is entirely funded by Deloitte Economic Advisory and hosted by the Centre for Industrial Economics of Mines ParisTech – PSL Research University. The selected candidate is supervised by Professor [François Lévêque](#), a renowned economist in the areas of energy, antitrust, intellectual property rights and network regulation. Practical arrangements (including time allocation for research and consulting) will be discussed with the selected candidate.

The successful candidate joins a cutting-edge team of enthusiastic energy economists, headed by Dr Johannes Trüby, who advise clients ranging from energy utilities to infrastructure operators or regulators on various topics related to economic analysis of the energy sector and regulation. Joining Deloitte Economic Advisory is an excellent opportunity to experience the interface between research and practical solutions for businesses, policy-makers and other energy market stakeholders.

### III. Your profile

- Master degree or equivalent in Engineering Sciences, Computer Sciences or Economics
- A strong interest in energy, market design and modelling
- Solid background in microeconomics and knowledge of power market functioning
- Experience in modelling (Matlab, Python, GAMS...)
- Good English and French communication skills

### IV. Application process

Interested candidates are invited to submit their application through the [following link](#).

### V. About CERNA and Mines ParisTech – PSL Research University

MINES ParisTech ranks top among the French Grandes Ecoles. Among its 18 research centres, the PhD project is hosted by *CERNA*, the [Centre for Industrial Economics at MINES ParisTech](#) – PSL Research University, in which eleven senior researchers and twenty PhD students and post-docs work in three main areas: industrial and innovation economics, energy economics, and environmental economics. *CERNA* is actively involved in applied research that seeks to answer questions posed by decision-makers in the private and public sectors. Its research projects are carried out in the framework of partnerships involving academics, private enterprises, local and national governments and international bodies. The research centre is located in the heart of the Latin Quarter in central Paris.

### VI. About Deloitte Economic Advisory

[Deloitte Economic Advisory](#) (part of Deloitte France) offers expertise in microeconomic analysis and econometrics to shape and underpin business strategies. Deloitte Economic Advisory supports its clients in all of their strategic questions with its experience in economic analysis applied to competition law (notification of merger transactions, litigation related to anticompetitive practices, etc.), evaluation (trade disputes and arbitration) and sectoral regulation (energy, telecommunications, transport, etc.). The firm has recently launched operations in West Africa and is experiencing strong growth.

The energy team of Deloitte Economic Advisory, advises clients ranging from energy utilities to infrastructure operators or regulators on various high level topics related to economic analysis of the energy sector (in particular power and natural gas) and regulation. The subjects covered include market design studies and recommendations, incentive regulation, pricing strategies, tariff design or energy policy. This team has significant expertise and international recognition in the field of energy economics. Moreover, the energy team maintains close ties with academic research, especially by publishing in scientific journals or by presenting results in various conferences.