

Leopold Monjoie

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Education

Ph.D. Economics, University of Paris Dauphine - PSL, Paris, France, March 2024.

References:

Ass. Prof. Fabien Roques (Primary Advisor)
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M.A. Economics, University of Paris Dauphine - PSL, Paris, France, 2018 (*Summa cum laude*)

B.A. Economics, University of Paris Dauphine - PSL, Paris, France, 2016

Research Fields

Energy and Environmental Economics – Industrial Organization - Market Design

Visiting Positions

Visiting Research Scholar, Melbourne University - Centre for Market Design (sponsored by Prof. David Byrne). Dec. - Jan. 2022-2023

Teaching and Academic Experience

Lecturer, Microeconomics - University of Paris Dauphine - PSL (2018 - 2023)

Teaching Assistant, Industrial Organization - University of Paris Dauphine - PSL (2021 - 2023)

Conference Organizer, "[1st CEEM Ph.D. Conference - Toward a new electricity market model?](#)", University Paris Dauphine - PSL, 2023

Seminar Organizer, "CGEMP Energy, Environment and Climate Ph.D. Seminar" with Daniel Herrera-Araujo and Stephanie Monjon.

Research

(JMP) "Designing Markets for Reliability with Incomplete Information"

Working Papers

"Securing investment for essential goods. How to design demand functions in reservation markets?" (with Fabien Roques) [2022 CEEM Working Paper 55](#).

"Designing efficient capacity mechanisms: bidding behavior and product definition." (with Fabien Roques) [2021 CEEM Working Paper 54](#).

Other works

Allocating the cost of long term contracts – a review of issues and potential approaches (with Fabien Roques)

Simulating the impact of product design and risk on a power plant value with a capacity market

Contracts and risk in electricity markets. Implications for the electro-intensive industry

Vertical integration and retail competition with an incumbent

Seminar and Conference Presentations

2023

French Association for Energy Economics seminar (FAEE)
European Association for Research in Industrial Economics (EARIE)
European Association of Environmental and Resource Economists (EAERE)
Conference on Economic Design
International Industrial Organization Conference (IIOC)
CEEM Annual International Conference

2022

Summer School on Economic Foundations for Energy and Climate - FSR
Asia-Pacific Industrial Organization Conference (APIOC)
European Association for Research in Industrial Economics (EARIE)
European Economic Association Conference (EEA)
European Association of Environmental and Resource Economists (EAERE)

2021

French Association of Economic Science (AFSE)
International Association for Energy Economics (IAEE)
US Association for Energy Economics (USAEE)
European Association of Environmental and Resource Economists (EAERE)
Microsoft - Sixth Marketplace Innovation Workshop
International Energy Workshop (IEW)
CEEM Annual International Conference

2020

French Association for Energy Economics seminar (FAEE)
BiGSEM Workshop in Economics and Management

Awards

2nd-Best Paper Award - French Association for Energy Economics seminar (FAEE)	2023
Nominated for the Best Student Paper - International Association for Energy Economics (IAEE)	2021
Best Poster Award - US Association for Energy Economics (USAEE)	2021
2nd-Best Paper Award - French Association for Energy Economics seminar (FAEE)	2020

Referee Experience

Revue Economique

Work Experience

Industrial and Policy Partnership

2018 – 2022 Joint work with the French Transport System Operator RTE on the possible evolution of the European electricity system's market design.

2020 – 2021 Joint work with the Chaire European Electricity Market on the transversal research theme of 2020/21, devoted to "Financing Long-Term Investment in Hybrid Electricity Markets." I contribute to two research groups: (i) The link between Short Term Dispatch and Long-Term Financing and (ii) Retail Tariffs and Investment.

Internship

2018 Junior Economist – RTE (Paris)

2017 Research Officer – NERA Economic Consulting (Paris)

2016 Economic Analyst – France Energie Eolienne (Paris)

Leopold Monjoie

Designing Markets for Reliability with Incomplete Information

This paper examines the challenges of allocating a good subject to capacity constraints when considering consumer preferences and investment decisions. A theoretical framework is developed where a market designer sequentially chooses a level of investment and proposes an allocation mechanism to consumers followed by a consumption stage. The market designer uses the allocation to maximize consumer surplus and finance the investment cost. He faces heterogeneous consumers who have private information about their demand level and belong to a publicly observed category. We show that the lack of complete information about consumer utility and constraints on the implementable mechanism leads to specific relations between the optimal allocation mechanism and the level of investment. Namely, we find that the optimal allocation implies discriminating consumers based on their types and that discrimination depends on the level of investment considered. This has significant welfare and distributive implications: an optimal pricing mechanism can minimize the investment cost and lead to a higher aggregate consumer surplus depending on the environment. However, it is not always a Pareto improvement for every consumer. We first study the benchmark case with complete information. We then analyze the current second-best situation, in which the market designer cannot obtain information about consumers and must choose fixed prices ex-ante. In the third step, we describe the optimal theoretical second-best allocation mechanism that considers the incentive and individual rationality constraints and the investment decisions.

Securing investment for essential goods. How to design demand functions in reservation markets?

This paper studies the provision of a homogeneous good such as electricity with time-varying uncertain stochastic demand and capacity-constrained producers. Due to price regulation, public good externalities, and market power, investments are typically under-procured by private agents. We analyze the design of capacity markets where producers can sell their investment availability before the demand is known to restore efficient investment level. We focus on indirect effects generated by their implementation, namely how the capacity price is allocated on the demand side, and how the realized demand is accounted for in the market design. We develop a novel approach to study the interdependencies between the capacity market and the wholesale and retail markets. We provide a sequential analytical model of the three markets and describe how different market design regimes can indirectly affect the equilibria in the subsequent markets in terms of prices, investment level, and welfare. In particular, we demonstrate that the ability of the capacity market to restore the social optimum, or at least to reach a second-best optimum, crucially depends on the different design regimes of the capacity market, as well as on the assumptions of policy interventions and the various market inefficiencies.

Designing efficient capacity mechanisms: bidding behavior and product definition

Capacity mechanism have been put in place to supplement wholesale markets revenues to ensure an adequate generation capacity to maintain security of supply. This paper studies the bidding behavior in those markets and how it can be affected by different capacity product designs. Producers' participation depends on the opportunity cost of making the investment available. The canonical framework to analyze those bids is based on a net present value model, where the capacity bid is equal to the expected loss on the energy market. However, this does not recognize managerial flexibility and assumes that the plant cannot react to future market conditions. Thus, we propose a novel approach to conceptualize capacity bids using real options theory, where the opportunity cost is represented as an option on the spread that drives the profitability of the plant. First, we define a bid in a one-period capacity market as a European Put Option.

Then, we expand to a multi-period setting in which capacity bids can be evaluated as a modified Basket Option. Our model provides new insights on the interplay between the product/commitment duration and on capacity bid. Using the real options approach, the model presents a first attempt to untangle the different drivers of the opportunity cost for providing capacity availability. We analyze the determinants of the option value concomitantly with the length of the procurement and deduce some policy implications for the product's design. Finally, we provide a numerical illustration of this issue using data from the French power system.