

## “Energy transition and the transformation of economic models”

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**Academic partner(s):** Laboratoire d’Economie d’Orléans (LEO) – Université d’Orléans

**Financial partner(s) :** Credit Agricole Centre Loire (CA-CL)

**Scientific director(s) :** Camélia Turcu and Yannick Lucotte

**Website :** <https://www.leo-univ-orleans.fr/chaieres-dentreprises/>

### RESEARCH PROGRAM DESCRIPTION

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*The research initiative (IdR) "Energy transition and transformation of economic models" develops a research project bringing together specialists in macroeconomics, finance, environmental economics and applied econometrics. Its aim is to identify and understand changes in economic models in order to better support Crédit Agricole Centre Loire (CA-CL) customers in their transitions. The project will thus contribute to the development and dissemination, in both academic and professional circles, of recent advances in the field of energy transitions and related economic modeling. It involves a number of stages:*

- *Identifying and understanding evolutions in economic models*
- *Providing theoretical and quantitative analysis of the chain of impacts and sectoral / intra-sectoral interactions on the basis of different transition scenarios*
- *Identifying and understanding changes in economic models (anticipation and analysis of opportunities and risks).*
- *Proposing applications to specific areas and to the customer portfolio.*

*Consequently, the analysis of the energy transition and of the new economic models designed to integrate and explain the transition requires skills not only in macroeconomics and finance, but also in applied econometrics and environmental economics.*

*The scope of analysis is defined around the transition risk, and can be broken down into three levels: macroeconomic, mezzo economic/ territorial, and microeconomic / customer portfolio level. For each level of analysis, we take into account the main challenges imposed by the energy transition and the resulting transformation of economic models. We identify these challenges in the academic field, but also more specifically in relation to the banking sector, and in particular with CA-CL, the private partner that is supporting us in this approach.*

## RESEARCH TEAM

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### Researchers

Camélia TURCU, LEO – University of Orléans  
Yannick LUCOTTE LEO – University of Orléans

### PhD Students

Matilda BARET, LEO – University of Orléans

*Matilda BARET has been recruited as a PhD student in October 2022 following a highly selective process. She has an outstanding academic record and validated her Master 2 in Theoretical and Empirical Economics at the Aix-Marseille School of Economics (AMSE) with honors. Her PhD thesis entitled “Energy transition and the transformation of economic models” and co-supervised by Yannick Lucotte (90%) and Camélia Turcu (10%) is fully funded by the Research Initiative.*

## PUBLICATIONS OF THE YEAR DIRECTLY RELATED TO THE RESEARCH PROGRAM

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### Published

**M Baret**, M. Meunier, Fiscal and environmental sustainability: Is public debt environmentally friendly?, *Environmental and Resource Economics*, forthcoming

### Under review

M. Mutascu, **C. Turcu** et Y. Zhang, A time-frequency study of oil price, exchange rate and trade in China, *Post-Communist Economies*

### Working papers

P. Avril, G. Leveigue and **C. Turcu** Natural Disasters and Financial Stress: Can Macroprudential Regulation Tame Green Swans?, *Submitted*

H. Kruse, T. Nunez-Rocha and **C. Turcu**, Infrastructure aid for resource trade? The crossroads of strategy and sustainable development, *Submitted*

Bacouel-Jentjens S., G. Leveigue, J. Riascos, **C. Turcu** (2023), Sustainable development and the extractive industry. An assessment of the Mexican case, *INFER Working paper 17.2023*

Togbetse W., **C. Turcu** (2023) Natural resources and China’s foreign assistance in Africa: a two-sided story, *INFER Working paper 16.2023*

Togbetse W., **C. Turcu** (2023) Chinese FDI in Africa, natural resources and the energy transition challenges, *INFER Working paper 15.2023*

Avril P., Levieuge G., **C. Turcu** (2023) Do bankers want their umbrellas back when it rains? Evidence from typhoons in China, *INFER Working Paper 8.2023*

#### **Ongoing projects**

Y. Kirat, **C. Turcu** (2023), Rare earths: a key driver of high-tech firms' financial performance, *Ongoing project*

Bacouel-Jentjens S., G. Levieuge, J. Riascos, **C. Turcu** (2023), Energy Transition Metals and Economic Development in Latin America, *Ongoing project*

**M. Baret, Y. Lucotte, S. Tokpavi** (2023), Bridging the Gap: Estimating Scope 3 emissions at firms' level, *Ongoing project*

#### **Reports, books, press articles, etc.**

"La recherche contribue à comprendre le monde qui nous entoure !", Camelia Turcu's interview, presenting the Research Initiative, Lettre Valloire (June 2023, page 59)

### **MAJOR COMMUNICATIONS RELATED TO THE RESEARCH PROGRAM**

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#### **Major academic conferences, invited speaker, etc.**

##### **Keynote lectures**

Camélia Turcu, International workshop "[Global changes, international trade, and health](#)", University of Bordeaux (France), 19-20 October 2023

Camélia Turcu, International conference "[Smart Diaspora: Romanian diaspora in higher education, science, innovation and entrepreneurship](#)". Session/Workshop "Innovation and shocks in the world economy", West University of Timisoara (Romania), 10-13 April 2023

##### **Major academic conferences and seminars**

#### **Conferences organized (by the scientific director) at the University of Orléans**

Journée APR IA Crises et globalisation, Orléans (France), 25 September 2023

International Conference "Economics of Climate Change and Environmental Policy", Orléans (France), 5-6 October 2023

International Conference "China in the Global Economy", Orléans (France), 17-18 November 2023

#### **Seminars**

ECREB Seminar, Talk on "Climate risk, energy transition and economic development: a new modelling approach", West University of Timisoara, Timisoara (Romania), 26 January 2023

LEREPS Seminar, Talk on "Do bankers want their umbrellas back when it rains? Evidence from typhoons in China", SciencesPo Toulouse, Toulouse (France), 12 October 2023

### ***International Conferences***

7th International Conference on Applied Theory, Macro and Empirical Finance (AMEF 2023). Thessaloniki (Greece), 10 - 11 April 2023

71<sup>st</sup> Congress of the French Economic Association (AFSE 2023), Paris (France), 14 - 16 June 2023

Fondation France Japon/Banque de France International Conference « Climate change, natural disasters and financial risks, Paris (France), 27 June 2023

TIMTED International Conference “Current Economic Trends in Emerging and Developing Countries”, Timisoara (Romania), 8-9 June 2023

39<sup>th</sup> Symposium on Money, Banking and Finance (GDRE 2023). Lille (France), 22 - 23 June 2023

INFER Annual Conference, Valencia (Spain), 6-8 September 2023

10<sup>th</sup> Annual conference of the French Association of Environment and Ressources Economists (FAERE 2023). Montpellier (France), 7 - 8 September 2023

Workshop « Vulnérabilité et entreprises », Orléans (France), 10 November 2023

9th Joint Research Workshop, Public Policies and Sustainable Development, Paris (France), 28-29 November 2023

5th ERMEES Macroeconomics Workshop 2023: The EU in the Age of Permacrisis, Strasbourg (France), 1st December 2023

Green Finance Research Advances Conference, Banque de France, Paris (France), 12-14 December 2023

### **Events organized by the program**

#### **Launching of the Research Initiative**

##### **Launching ceremony**

##### **Business Center - Credit Agricole Centre Loire, 10 March 2023**

Several speakers were invited at the ceremony among which the president of the University of Orléans, LEO's director together with the director of the Credit Agricole Centre Loire. The ceremony was attended by PhD students, researchers, CA-CL representatives, as well as the media, and chaired by the Research initiative scientific directors.

#### **International Visiting and Conference**

##### **Evolution of the International Monetary System from the Perspective of Trilemma Challenges**

##### **Hiro Ito (Portland State University)**

##### **University of Orléans, 17 September 2023**

Hiro Ito (Portland State University), a worldwide recognized researcher in international (macro)economics, and author of the Chinn-Ito index, gave a conference open to students, practitioners and researchers on September 17 2023, as part of a visiting appointment within the ILB CACL LEO Research Initiative 'Energy Transition and Transformation of Economic Models'.

### International conference

#### [“Economics of Climate Change and Environmental Policy”](#)

University of Orléans, 5-6 October 2023

This conference received the financial support of the Labex Voltaire, LEO and INFER, as well as the scientific support of the Research Initiative 'Energy Transition and Transformation of Economic Models'. It also benefited of the involvement of the Banque de France and the Bank of Canada.

The event gathered over 80 participants from fifteen countries. More than fifty papers were selected for presentation. Two keynote speeches were given by international experts in the field: Richard Tol (University of Sussex) and John Rust (Georgetown University). Sessions in line with the topic of the Research Initiative were held during this event.

Following this conference, a journal special issue will be published. The special issue entitled “Climate Change and Environmental Policy” is hosted by the prestigious peer-reviewed international journal *Energy Economics* (Elsevier) (guest editors: Stéphane Déès (Banque de France), Marie-Christine Tremblay (Bank of Canada), Camélia Turcu (LEO – Univ Orléans), Marcel Voia (LEO – Univ Orléans)).

### International conference

#### [“China in the Global Economy”](#)

University of Orléans, 16-17 November 2023

The event gathered approximately 40 researchers from approximately ten countries. Several topics directly related to the Research Initiative have been discussed. A special session of the Research Initiative has been organized during this conference that benefited of the financial support of the University of Orléans, APR IA Crises and globalization, and LEO – University of Orléans.

### Visiting and Conference

#### Environmental Risks

Marion Hémar (Agence Française du Développement (AFD) – French Development Agency)

University of Orléans, 26 November 2023

Marion Hémar, macroeconomist working on country risk analysis at AFD gave a conference open to students, practitioners and researchers on November 26 2023, as part of a short visiting appointment within the ILB CACL LEO Research Initiative 'Energy Transition and Transformation of Economic Models'.

### OTHER HIGHLIGHTS

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**Awards, scientific recognition, organization of calls for projects, involvement in master's courses, PhD program visiting researchers, etc...**

A course in the research track of the three Masters in Economics at the University of Orléans has been developed, since 2023, on Environmental economics and energy transition challenges taken stock on the research developed within this Research Initiative.