

Continuing in the spirit in which it was founded by Ignacy Sachs in 1973, **CIRE**D studies strategies for the harmonization of environment and development, both for economies as a whole and for major sectors: energy, urban systems, agriculture and land-use. CIRED's scientific approach is built on a dialogue between social sciences, earth sciences, natural sciences and engineering.

Research areas

CIRED explores the overlap between environment and development around three research themes.

1. Articulation environment / development at the sectoral level

Energy transition

- Electricity sector governance
- Policies and development of renewable energy sources (EnR)
- Energy efficiency
- Energy Demand and fuel poverty

Sustainable cities and territories

- Development of urban ecosystems
- Transport and mobility
- Electric vehicle perspective

Agriculture, water and land use

- Agriculture and land-use change
- Water resources management
- Biodiversity conservation policies
- Conservation and development

2. Articulation environment / development at the global level

Climate change and development strategies

- Global climate policy evaluation

- Articulation mitigation / development at the country level: FRA, BRA, AFS, CHI, IND, ARS
- Adaptation to climate change

Transversal themes on sustainable development

- Investment needs and funding of low carbon transition
- Environmental policies, distribution and equity
- Mitigation and competitiveness

3. Deliberation and decision-making on sustainable development policies

- Taking decisions "under controversy"
- Role of economic analysis in decision processes
- Diffusion of innovation
- Economics and political economy of climate negotiations

Methods and tools

To analyze these objects, CIRED mobilizes a wide range of methods and tools

Prospective modeling

- Integrated modeling: IMACLIM, RESPONSE
- Sectoral models: NEDUM, ResIRF, SMA, SIG

Economic Analyses

- Applied microeconomics, Game theory, Experimental Economics
- Macroeconomics

Qualitative methods

- Sociological approaches, Historical approaches, Institutional and new institutional economics

Statistics and Econometrics

Research Networks

Internationally, CIRED has been one of the research groups most actively involved in the IPCC since 1996. Four members of the team were lead authors for the IPCC 5th assessment report (AR5), and 105 CIRED publications were referenced in it. CIRED is a member of Stanford University's Energy Modeling Forum and of the Low Carbon Society Research Network (LCS-RNet). CIRED's international research partners include PIK (Germany), IIASA (Austria), UFRJ (Brazil), IIMA (India), UCT (South Africa), USTH (Vietnam) and RFF (United States).

In France, CIRED coordinates the Ile-de-France Network, R2DS and the GDRI ENGAGE -in collaboration with PACTE- about the the commitment of the social sciences in the climate-energy issues. It is a founding member of the Convergence Institute C-LAND and of the Labex BASC and Urban Futures. CIRED collaborates regularly with laboratories from IPSL, the pole 'villes' of Paris-Est, CIRAD in Montpellier or the energy-climate pole in Grenoble.

Chair in Modeling for Sustainable Development (MPDD)

The (MPDD) Chair, created in 2008 and renewed in 2014, is built around CIRED and CMA (Centre de Mathématiques Appliquées - Mines ParisTech). EDF, GRTgaz, Schneider Electric, ADEME and MEDDE provide financial support. The aim of the Chair is to build a permanent internationally-recognized hub for modelers devising innovative tools for a better mastery of sustainable development issues within the business world and in diverse public decision arenas.

By adopting a forward-looking approach, the MPDD Chair aims to support decision making from scenarios of possible futures on matters of political energy, climate, industrial development and technology choices. In this context, a modeling platform has been launched which aims to facilitate an exchange between modeling teams,

administrations and Chair partners can provide public policy recommendations related to energy transition in France.

Selected Recent Publications

- **Babier R., Nadaï A.** (2016) *Acceptabilité sociale: Partager l'embarras*, Vertigo (revue en ligne), vol 15 (3), 22p
- **Branger, F., Quirion P., et Chevallier J.** 2017. *Carbon Leakage and Competitiveness of Cement and Steel Industries Under the EU ETS : Much Ado About Nothing*. The Energy Journal 37 (3)
- **Desquilbet M., Dorin B., Couvet D.,** 2016. *Land Sharing vs Land Sparing to Conserve Biodiversity: How Agricultural Markets Make the Difference*, Environmental Modeling & Assessment, pp. 1-16
- **Li, B., Gasser T., Ciais P., et al** 2016. *The contribution of China's emissions to global climate forcing*. Nature 531
- **Kermagoret, C., Levrel H., Carlier A., et Dachary-Bernard J.** 2016. *Individual preferences regarding environmental offset and welfare compensation: a choice experiment application to an offshore wind farm project*. Ecological Economics 129.
- **Missemer, A.** 2016 *Nicholas Georgescu-Roegen and degrowth*. The European Journal of the History of Economic Thought

The R2DS Research Network for Sustainable Development

CIREC coordinates the R2DS Île-de-France Network. This scientific interest group aims to develop the Île-de-France Region's expertise in the field of sustainable development by mobilizing an interdisciplinary scientific community including climate sciences, life sciences, engineering, prospective modeling and social sciences.

Highlights of 2016

January

In collaboration with ADEME, GRTgaz, Schneider Electric and the Ministry of Ecology, Sustainable Development and Energy, the MPDD Chair organized on January 28th 2016, the *Journée EDF- MPDD Chair 2016* entitled "Proper use of models and energy scenarios".

June

Jim Skea and Priyadarshi Shukla, the two new co-chairs of the group 3 of the IPCC, visited CIREC and on this occasion, we organized joint with the MPDD Chair, on June 13 an exchange meeting with the French authors of the IPCC community, dedicated to special report '1.5 ° C' and the 6th evaluation report, and in collaboration with IDDRI and EDF the conference *Understanding COP21 and beyond*.

October

CIREC co-organized with the laboratory LARODEC a workshop "Regards croisés sur les négociations climat: Quel dialogue entre recherche opérationnelle et sciences sociales?" on October 4th in Tunis, and the MPDD Chair a seminar with John Weyant (Stanford professor and director of Energy Modeling Forum) on the history of Integrated Assessment Models and key issues in their development in the future, on October 13th 2016.

December

CIREC's participation in COP22 in Marrakech

For the latest news about CIREC...



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