

**Macrodynamics & Systems Dynamics Modeling
Climate Change & Sustainable Development
Energy, Hydrogen & Arctic
Agriculture & Environment
(New) Space Economics**

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Profile

Patrick Schembri, PhD in Economics (Univ. Paris 1 Panthéon-Sorbonne/Academic Tutor: Prof. Emeritus René Passet), **Associate Professor in Economics** at Versailles University and University of Paris-Saclay. Current member of the Observatory of Versailles Saint-Quentin-en-Yvelines, (CNRS-UVSQ), and research fellow at the Interdisciplinary Research Centre in Cultures Environments Arctic Representations Climate (CEARC-OVSQ). For his doctoral dissertation, he benefited from a Research Grant of Brown University (Providence, MA, USA). He has been a Postdoctoral fellow within the CRITINC European Research Project, *making sustainability operational: CRITICAL Natural Capital and the implications of a strong sustainability criterion*, funded by the DG XII of the European Commission and coordinated by the School of Politics, International Relations and the Environment, Keele University, U.K. He is member of the GDR AREES « ARctique: Enjeux pour l'Environnement et les Sociétés » (CNRS).

Dr. Schembri published several articles and chapters on environmental policy, innovation & green technology transfers, natural capital assessment, indicators for sustainable development and economic modelling of sustainability. His research activities led him to take part in several national and European research programs concerning sustainable agriculture and water quality, greenhouse gas abatement through fiscal policy in the European Union, the economic and social aspects of environmental issues such as consumers lifestyles and pollutant emissions, the application of monetary and non-monetary procedures of economic valuation for managing sustainable development, the role of electricity grid and hydrogen in the energy transition, the modelling of socio-economic scenarios of climate change.

Research Activities

My research mainly focuses on the links between economic growth, innovation and environmental changes, as well as the transition to the so-called ecologically-adjusted growth regime and the associated development paths. During the last decade, the financial and economic crises raise the basic questions about the process of economic growth. They have led to rethinking financial and environmental issues, highlighting the question of the financing of investments in sectors that would allow for the generation of new areas of production with specific skills, jobs, and an increase in income. It is then important to explore the policies and actions that should be initiated in order to achieve the required transition. It is also important to take account of the characteristics of the region and of the individual countries, as well as their potential to effectively move towards a green or ecologically adjusted economy based on their own capacities, while embracing the concept of green growth in their policies and programs.

In this context, my research aims at building an analytical framework that integrates the notions of *threshold* and *conflict* with respect to *sustainability* treated here as both a system-oriented and asset-based approach. Sustainability is defined as a heuristic method that questions *consistency* between several goals through time. With respect to the time dimension of sustainability, we examine the extent to which current investment strategies facilitates or limits the ability of the system to adjust to *novelty*. This is an important matter which also refers to the notion of adaptation. Adaptation is addressed through how resilience can be treated in macrodynamics with reference to the modeling of economic growth and ecological transition.

Current Projects

SUSTAINABLE ENERGY INSTITUTE – PARIS SACLAY (creation Autumn 2021). This is an Interdisciplinary Object of the Paris-Saclay University. Scientific coordinator for Social sciences & Humanities and Sustainable Development. Institutional coordinators: CNRS, CEA-LITEN, University of Paris-Sud, University of Versailles-Saint-Quentin-en-Yvelines, ENS Paris-Saclay, Centrale-Supélec.

ENERGY TRANSITION: 2017-2021. He is the scientific coordinator for the Social sciences and Humanities of the IRS MOMENTOM (MOlecules and Materials for the ENergy of TOMorrow), a Strategic Research Initiative of Paris-Saclay University. The economic evaluation of new materials for renewable energies and new strategies allowing the transition from a carbon-based economy to a sustainable economy. Partners: CNRS, CEA, University of Paris-Sud, University of Versailles-Saint-Quentin-en-Yvelines, University of Evry, Ecole Polytechnique, ENS Cachan, ENSTA ParisTech, Centrale-Supélec, Soleil.

<https://www.universite-paris-saclay.fr/en/node/12559#our-project-3385>

CLIMATE-ECONOMIC MODELING: 2017-2021. IRS ACE-ICSEN (Adaptation to Environmental Changes: a multiscale and transdisciplinary approach), coordinated by the CEARC-OVSQ. The study of adaptation processes of living organisms, natural habitats and human societies to environmental changes. The modelling of climate change mitigation. Partners: University of Paris-Sud (ESE, GEOPS), University of Versailles-Saint-Quentin-en-Yvelines (DAVID, VIMA), LabeX IPSL (LSCE). <http://www.icsen.ovsq.fr/>

News

Recent

May 2021, Transition énergétique et défi climatique : quelle place pour l'hydrogène vert ? *Maison des sciences de l'Homme Paris-Saclay : collection Actes*, 8, MSH PARIS-SACLAY Éditions (to be published).

May 2021, Énergies « nouvelles » et société : la transition énergétique actuelle à la croisée des chemins et des savoirs, *Maison des sciences de l'Homme Paris-Saclay : collection Actes*, 8, MSH PARIS-SACLAY Éditions (With Hynd Remita - to be published).

16 April 2021, **Transitions énergétiques et agenda climatique : le regard d'un économiste**, Conference at « Les vendredis de l'OVSQ », the Observatory of Versailles-Saint-Quentin-en-Yvelines (CNRS-UVSQ), University of Paris-Saclay.

URL : <https://www.universite-paris-saclay.fr/evenements/transitions-energetiques-et-agenda-climatique-le-regard-dun-economiste>

26 March 2021, **Les « villes neutres en carbone » seront-elles nécessairement des « villes soutenables » ? Une réflexion autour de la question de l'arbitrage en les objectifs climatiques et les objectifs de développement**, Communication at the first Workshop Webinar organized by the LIMEEP-PS intitled « Villes durables », the Observatory of Versailles-Saint-Quentin-en-Yvelines (CNRS-UVSQ), University of Paris-Saclay.

URL : <https://www.cearc.fr/content/séminaire-virtuel-«-ville-durable-»>

25 March 2021, **Sustainable Finance for the Energy Transition: What Should be the Right Price for Energy?** Guest Speaker/Plenary Conference at the Third Edition of Ethical Finance and Sustainable Development Workshop organized by the EDC Paris Business School (OCRE) and the Cergy Paris University (THEMA).

URL: <https://www.edcparis.edu/fr/third-edition-ethical-finance-and-sustainable-development-workshop>

04 Dec. 2020, **Economic Loss and Damage From Climate Change: The Importance of The « Growth Effect » on The Cost and Timing of Climate Policies**, Communication at the second ACE ICSSEN Workshop Webinar, University of Paris-Saclay and the Observatory of Versailles-Saint-Quentin-en-Yvelines (CNRS-UVSQ), (with Katia Radja & Huijie Yan).

04 Dec. 2020, **Variations spatio-temporelles de l'exposition individuelle aux polluants urbains : quelles adaptations individuelles et collectives ?** Communication at the second ACE ICSEN Workshop Webinar, University of Paris-Saclay and the Observatory of Versailles-Saint-Quentin-en-Yvelines (CNRS-UVSQ), (with Katia Radja & Nabil Touili).

02 Nov. 2020, Contribution to the **MOOC MOMENTOM**, The MOMENTOM Project as a Strategic Research Initiatives of Paris-Saclay University. New Energies and Society
<https://www.fun-mooc.fr/courses/course-v1:ParisSaclay+71006+session01/about>.
Sequence 1: **Energy Transition and Global Warming**
Sequence 2: **New Energies and Environmental Impacts: The IPAT Modelling Approach**
Sequence 3 : « **Green** » **Hydrogen in The Energy Transition: Which Potentials and Lock-in Factors?**

04 Dec. 2020, **The Effect of Climate Change on Economic Growth: Evidence From a Cross-Section of Countries**, Communication at the second ACE ICSEN Workshop Webinar, University of Paris-Saclay and the Observatory of Versailles-Saint-Quentin-en-Yvelines (CNRS-UVSQ), (with Katia Radja & Huijie Yan).

07 July 2020, **Covid-19 : Quel développement soutenable pour demain ?** Quelles mutations économiques et sociales ? Communication at the third Webinar organized jointly by the University of Paris-Saclay, the AUF and the Conversation.
https://youtu.be/QVFZI3fnGPI?list=PLZ_pEg029575C0AalZ7QmFKHWoeSAQmcz

02 July 2020, **The Effect of Climate Change on Economic Growth: Evidence From a Cross-Section of Countries**, the 8th Bordeaux Conference in Development Economics (BCDE), GREThA (UMR CNRS 5113) and the University of Bordeaux, Bordeaux, France, (with Katia Radja & Huijie Yan) [conference postponed to April 2021]

05 June 2020, **La crise de la Covid-19 entre rupture et continuité pour le “monde d’après”**, Paper presented at the First International Webinar: Le monde post-Covid-19: opportunités de développement économique et durable, organized jointly by the Department of International Relations, the Faculty of Economics and the Franco-Argentinian Center of the University of CUYO (UNCUYO), Mendoza, Argentina.
<https://www.cearc.fr/content/webinaire-universit%C3%A9-nationale-de-cuyo-penser-la-crise-du-covid-19-entre-rupture-et>

21 Nov. 2019, **Transition énergétique et défi climatique : quelle place pour l’hydrogène vert ?** Paper for the Second Workshop MOMENTOM : Energies nouvelles et société, Maison des Sciences de l’Homme Paris Saclay, Cachan.

08 Nov. 2019, **Défi climatique et transition énergétique : quelle économie politique pour l’Arctique ?** Communication for the Séminaire Hautes Latitudes, LSCE (IPSL) & CEARC, Université Paris Saclay.

19 Oct. 2019, **Les grands enjeux socio-économiques de la transition énergétique**, communication for the Conference on the Renewable Energy, organized by the Pôle d’Equilibre Territorial et Rural Ternois 7 Vallées (PETR), Abbaye de Belval, Commune de Troisvaux.

23 Sept. 2019, **The Tradeoff between Climate Policies and Development Policies: A Sustainability Issue**, paper presented at the International Conference on Arctic Crossroad, The Minister of Europe and Foreign Affairs, Paris, (with K. Radja)

18 June 2019, **Energy Transition, and US Urban Growth Path Dependency**, paper presented at the International Faculty Partnership Symposium California State University – MICEFA, OVSQ, (with F. Leriche)

11 Apr. 2019, **Transition énergétique et matériaux de rupture pour l’énergie : les enjeux socio-économiques du programme de recherche MOMENTOM (IRS Univ. Paris Saclay)**, communication presented at the Workshop Energy H2020, PCN SHS & PCN Energie, CEA, Ministère de l’Enseignement supérieur, de la Recherche et de l’Innovation (MESRI), Paris

18 Feb. 2019, **Economic Scenarios of Climate Change: The Methane Issue**, Lecture at the Second International MEMO² School: Learning more about Methane and Society, LSCE (IPSL), OVSQ. MEMO²: Methane goes Mobile – MEasurements and Modelling, is a European Training Network (MSCA-ETN) with more than 20 partners from 7 countries

13 Dec. 2018, **Energy Transition and The Arctic: An Issue of Conflicting Security Motives**, paper presented at the Arctic Week: An International & Transdisciplinary Conference Bridging Indigenous and Scientific Knowledge, OVSQ.

18 Nov. 2018, **Does disaggregated renewable energy consumption stimulate economic growth? The role of spatial effect and heterogeneity across countries**, paper presented at the Conference on International Development Economics, GDRI IDE 838, CERDI – university of Auvergne, Clermont Ferrand, (with H. Yan & K. Radja)

21 March 2018, **Energie, climat et croissance : les enjeux de la transition vers une économie « décarbonée »**, Plenary Conference, Université Paris Val de Seine, Cergy Pontoise.

23 Jan. 2017, **Energies et dérèglements climatiques : quels enjeux économiques ?** Ecole Supérieure de Journalisme de Lille, Lille, (with S. Huet).

20 Nov. 2017, **Dérèglements climatiques et croissance économique : quels enjeux pour l'évaluation des politiques climatiques ?** *Workshop IRS ACE ICSEN*, MSH Paris-Saclay, ENS Paris-Saclay, Cachan.

10 March 2017, **Echanges internationaux et environnement**, Conference, *Trump : sa politique et l'environnement*, Association des Juristes en Droit de l'Environnement de l'université de Paris Sud, Sceaux.

Congress, Workshop and Seminar: Organization, Scientific Coordination

Sustainable Energy Institute – Paris Saclay (creation Autumn 2021). An Interdisciplinary Object of the Paris-Saclay University. Scientific coordination for Social sciences & Humanities and Sustainable Development.

02 Nov. 2020, **The MOOC MOMENTOM**, The MOMENTOM Project as a Strategic Research Initiatives of Paris-Saclay University. New Energies and Society (Scientific Coordinator Challenge 4: Social Sciences and Humanities)

<https://www.fun-mooc.fr/courses/course-v1:ParisSaclay+71006+session01/about>.

9-13 Dec. 2019, **Arctic Week 2019: An International & Transdisciplinary Conference Bridging Indigenous and Scientific Knowledge**, (Organizing Committee), The Minister of Europe and Foreign Affairs, Paris

27 Nov. 2019, **Itinéraires maritimes et Arctique : contraintes et enjeux logistiques**, Séminaire de Recherche en logistique (SRLOG), (Scientific Coordinator & Organizing Committee), OVSQ, Guyancourt.

21 Nov. 2019, **Second Workshop MOMENTOM Energies nouvelles et société : les coûts de la transition énergétique**, (Scientific Coordinator), Maison des Sciences de l'Homme Paris-Saclay, ENS Paris-Saclay, Cachan.

29 & 30 Nov. 2018, **Deuxième atelier thématique de recherche Mobilité : Villes, transports et mobilité durable**, (Scientific Committee and local Organizing Committee), OVSQ, Guyancourt.

19 Oct. 2017, **First Workshop MOMENTOM Energies nouvelles et société : regards croisés sur la transition énergétique**, (Scientific Coordinator), Maison des Sciences de l'Homme Paris-Saclay, ENS Paris-Saclay, Cachan.

Selected Publications and working papers

2020 Transition énergétique et défi climatique : quelle place pour l'hydrogène vert ? WP IRS – MOMENTOM, Paris-Saclay University, CEARC/OVSQ (CNRS-UVSQ).

2020 Loss and damage from climate change: the importance of the « growth effect » on the cost and timing of adaptation, WP: IRS ACE-ICSEN, Paris-Saclay University, CEARC/OVSQ (CNRS-UVSQ).

2020 The Effect of Climate Change on Economic Growth: Evidence From a Cross-Section of Countries, WP: IRS ACE-ICSEN, Paris-Saclay University, CEARC/OVSQ (CNRS-UVSQ).(with Katia Radja and Huijie Yan).

2019 Does Disaggregated Renewable Energy Consumption Stimulate Economic Growth? The Role of Spatial Effect, WP: IRS MOMENTOM, Paris-Saclay University, CEARC/OVSQ (CNRS-UVSQ).(with Katia Radja and Huijie Yan).

2018 Energy Transition and the Arctic Region: Does hydrogen part of the solution? WP: IRS MOMENTOM, Paris-Saclay University, CEARC/OVSQ (CNRS-UVSQ).(with Sarah Uzunova).

2017 Dérèglements climatiques et croissance économique : quels enjeux pour l'évaluation des politiques climatiques, WP : IRS ACE-ICSEN.

<http://www.icsen.ovsq.fr/sites/icsen.ovsq.fr/files/membersfiles/Presentation%2020171120/11-SCHEMBRI%20Patrick.pdf>

2016 Quels enjeux de soutenabilité pour l'agriculture indienne ? *Economie Rurale*, 352, Mars-avril, pp. 23-41, (with Katia Radja and Damien Bazin). [Which sustainability for the Indian agriculture?]

2015 Green growth and sustainability: new challenges for an economics of quality, *International Journal of Sustainable Development*, Special Edition, Vol. 18, N°1/2, pp. 1-8, (with Katia Radja).

2015 Quelles conditions pour un régime de croissance verte ? Quelques perspectives pour une lecture régulationniste, *Recherche & Régulation 2015 : La théorie de la régulation à l'épreuve des crises*, Actes, Paris, 23p., (with Yoann Verger). [Which Conditions for a Green Growth Regime? A few Perspectives from a Regulationist Reading]

file:///C:/Users/patrick/Downloads/Conference-RR-2015_Schembri_86944.pdf

2012 *Pour une nouvelle industrialisation des régions françaises*, Edition L'Harmattan, Paris, France, in collaboration with P. Grou, D. Mertens-Santamaria & K. Radja. [For a new industrialization of the French regions]

2011 Développement durable et ruralité en Nouvelle Calédonie : quelle articulation du local et du global dans les politiques publiques ? in F. Taglioni (ed.), *Insularité et développement durable*, pp. 409-432, IRD [Marseille], Objectifs Suds, (with J.M. Sourisseau, G Pestana & V. Géronimi).

2011 Vulnerability and training-employment relationship: The French Case, *The European Journal of Qualification*, 3, June, pp. 13-18, (with A. Nicolas & K. Radja).

2010 Politiques publiques et développement durable dans le monde rural calédonien, *Economie rurale*,320, pp. 9-23, (with J.M. Sourisseau, G Pestana & V. Géronimi). [Public policies and sustainable development in the Caledonian rural world].

2009 Clean Technology Transfers and North-South Technological Gap: An Important Issue for Environmental Policies, *International Economics*,120, pp.109-130, (with O. Petit).

2009 Quelles formations pour un développement soutenable dans les pays en développement ? *Mondes en développement*, 2009/3, 147, pp. 29-44, (with A. Nicolas & K. Radja). [Which formations for a sustainable development in developing countries?].

2009 Régimes de gouvernance pétrolière et conflit des mobiles sécuritaires, in C. Serfati (Ed.), in *Une économie politique de la sécurité*, Edition Karthala Paris, (with O. Petit), pp 161-180.

2009 Les enjeux de la sécurité environnementale, des ressources pétrolières et de la biodiversité, in C. Serfati (Ed.), in *Une économie politique de la sécurité*, Edition Karthala Paris, (with O. Petit), pp 102-116.

2009 *Diversité des politiques de développement durable. Temporalités et durabilités en conflit à Madagascar, au Mali et au Mexique*, Edition Karthala Paris, France, in collaboration with G. Froger, V. Géronimi & P.Meral. [Diversity of sustainable development policies. Temporalities and sustainabilities in conflict in Madagascar, Mali and Mexico]

2008 Which Professionalizing Education Programs For Which Sustainable Development? *Industry and Higher Education*, vol. 22, 3, June, pp.161-169, (with Alain Nicolas & Katia Radja).

2007 Sustainable agriculture and water quality control: a structural approach, *International Journal of Sustainable Development*, vol. 9, 2, pp. 246-276 (with J.-M. Douguet).

Current Teaching activities

Graduate level:

M2 ACCES (Univ. Paris Saclay and ESJ Lille): Changement climatique, énergie et économie
(in collaboration with Sylvestre Huet)

<https://esj-lille.fr/formations/formations-a-distance/master-changement-climatique-medias-a-distance/>

MOOC ACCES Climate-Economy Interactions : A Climate Bill Issue.

MOOC ACCES Climate, Economy and Decoupling : Do we have to wait to be rich to worry about the climate?

Univ. Paris Saclay and UVSQ: Environmental Economics and Environmental Policy, Energy Economics, Socio-economic Scenarios of Climate Change: Construction and Assessment, Eco-innovation and Society, Economic analysis of Sustainable Development, Business Ethics (the precautionary principle in Economics), Economic Assessment of Sustainable Development Projects

Undergraduate level: Macrodynamics (UVSQ)