

Dr James A. Lennox

CENTRE OF POLICY STUDIES, VICTORIA UNIVERSITY
LEVEL 14, 300 FLINDERS ST, MELBOURNE
AUSTRALIA

Research interests

Climate change and energy economics; Transport and urban economics; Computable General Equilibrium and Spatial General Equilibrium modelling; Integrated Assessment modelling

Employment

Centre of Policy Studies (CoPS), Melbourne, Australia

05/2015–present Senior Research Fellow

Fondazione Eni Enrico Mattei (FEEM), Venice, Italy

12/2014–04/2015 Senior Researcher

06/2013–11/2014 Marie Curie Fellow

Awarded an Incoming International Fellowships (IIF) grant for experienced researchers under the Seventh Framework Programme for Research (FP7) of the European Commission for a project entitled: *'How does climate policy affect technical change? Theory and applications in a general equilibrium framework.'*

Theoretical and applied modelling, focussing on capital-embodiment of clean and dirty technologies.

Landcare Research, New Zealand

2008–13 Senior Researcher, Ecological Economics

2006–08 Research Leader, Ecological Economics Group

2005–06 Researcher, Resource Accounting

Development of large-scale CGE models and their application to climate and other policy-oriented questions; Input-output analysis linking environmental pressures with consumption and trade flows; Cost-benefit assessments and participatory decision processes.

Commonwealth Scientific & Industrial Research Organisation, Australia

2001–04 Postdoctoral Fellow, Resource Futures, Sustainable Ecosystems Division, Canberra

Material and energy flows in the Australian energy, minerals processing and chemicals sectors.

Professional development

- 2014 *Empirical Methods: Economic Growth and Development*, Institute for the World Economy (*IfW*), Kiel.
- 2014 *Tools for Macroeconomists: The Essentials*, LSE Summer Methods Programme, London.
- 2013 *Macroeconomic Policy & Financial Markets*, Individual Professional Award, University of London
- 2013 *Public Financial Management: Revenue*, Individual Professional Award, University of London
- 2008 *Workshop on Economic Modeling – Economic Impact Analysis of Climate Policies*, Prof Christoph Böhringer, Las Palmas, Spain
- 2007 *Advanced Techniques in General Equilibrium Modelling using GAMS*, EcoMod Modeling School, Brussels
- 2006 *Practical General Equilibrium Modelling using GAMS*, EcoMod Modeling School, Brussels

Academic qualifications

- 2002 PhD (Department of Chemical Engineering), University of Queensland, Australia

Dissertation: *Multivariate subspaces for fault detection and isolation: with application to the wastewater treatment process*

07/1999–06/0000: Visiting scholar at Institut National de la Recherche Agronomique, Narbonne, France.
- 1997 B.E. (Chemical, Honours 1st class), University of Queensland, Australia

Current professional affiliations

Economic Society of Australia (ESA), Member

Software, programming and language skills

Software and programming: GEMPACK; GAMS; Python; QGIS, Mathematica; LaTeX, Microsoft Office Suite

Languages: English (mother tongue)

French (Europass B2 comprehension / B1 expression)

Italian (Europass A2)

Spanish (Europass A2)

Publications

Peer-reviewed journal articles

- Rounsevell, MDA, Arneth, A, Alexander, P, Brown, DG, de Noblet-Ducoudré, N, Ellis, E , Finnigan, J, Galvin, K, Grigg, N, Harman, I, **Lennox J**, Magliocca, N, Parker, D, O'Neill, BC, Verburg, PH, Young, O (2013) Towards decision-based global land use models for improved understanding of the Earth system, *Earth System Dynamics Discussions*, 4(2):875-925
- Lennox J** (2012), Impacts of high oil prices on tourism in New Zealand, *Tourism Economics*, 18(4):781-800.
- Becken S, **Lennox J** (2012), Implications of a long term increase in oil prices for tourism, *Tourism Management*, 33(1):133-43.
- Lennox J**, Proctor W, Russell S (2011), Structuring stakeholder participation in New Zealand's water resource governance, *Ecological Economics*, 70(7):1381-94.
- Peters G, Andrew R, **Lennox J** (2011) Constructing an environmentally-extended multiregional input-output table using the GTAP database. *Economic Systems Research* 23(2):131-52 (doi: 10.1080/09535314.2011.563234).
- Lennox J**, Diukanova O (2011) Modelling regional general equilibrium effects of water allocation in Canterbury, *Water Policy*, 13(2): 250-6
- Lennox J**, van Nieuwkoop, R. (2010), Output-based allocations and revenue recycling: Implications for the New Zealand Emissions Trading Scheme, *Energy Policy*, 38(12): 7861-72.
- Andrew R, Peters G, **Lennox J** (2009) Approximation and regional aggregation in multi-regional input-output analysis for national carbon footprint accounting. *Economic Systems Research* 21(3):311-335.
- Lennox J**, Turner GM, Hoffmann R, McInnis BC (2004) Modelling Australian basic industries in the Australian Stocks and Flows Framework. *Journal of Industrial Ecology* 8:101-120.
- Lennox J**, Yuan Z (2003) An approach to verifying and debugging simulation models governed by ordinary differential equations: Part 2. Residuals analysis and a case study. *International Journal for Numerical Methods in Engineering* 57:707-722.
- Yuan Z, Graham ML, **Lennox J** (2003) An approach to verifying and debugging simulation models governed by ordinary differential equations: Part 1. Methodology for residual generation. *International Journal for Numerical Methods in Engineering* 57:685-706.
- Lennox J**, Rosen CM (2002) Adaptive multiscale principal components analysis for wastewater treatment operation and monitoring. *Water Science and Technology* 4-5:227-235.
- Lennox J**, Yuan, Z and Harmand, J (2001) A Systematic Approach to Error Isolation in Computerized Wastewater Simulation Models. *Water Science and Technology* 43:367-376.
- Rosen CM, **Lennox J** (2001) Multivariate and multiscale monitoring of wastewater treatment operation. *Water Research* 35:3402-3410.

Conference papers (selected)

- Lennox, J** and Adams, P (2016) *Residential land use, transport and congestion in a computable general equilibrium*. Paper presented at the 19th Annual Conference on Global Economic Analysis, June 15-17, 2016, Washington DC, USA.
- Brown, D, Harback, K, Martin, S, Dixon, P, **Lennox, J** and Rimmer, M (2016) *A More Complete Characterization of Transportation Margins in the USAGE Model* Paper presented at the 19th Annual Conference on Global Economic Analysis, June 15-17, Washington DC, USA
- Lennox, J** and Witajewski, J (2014) *Directed technical change with capital-embodied technologies: implications for climate policy*. Presentation at the 6th Atlantic Workshop on Energy and Environmental Economics, June 25-26, 2014, A Toxa, Galicia, Spain.
- Lennox, J**, Turner, J, Daigneault, A and Jhunjhnuwala, K (2013) *Regional, sectoral and temporal differences in carbon leakage*. Paper presented at: Australian Agricultural and Resource Economics Society (AARES), Feb 5-8, Sydney, Australia
- Lennox, J**, Turner, J, Daigneault, A and Jhunjhnuwala, K (2011) *Modelling forestry in dynamic general equilibrium*, Paper presented at: New Zealand Agricultural and Resource Economics Society (NZARES), Nelson, New Zealand 2011.
- Lennox J**, Andrew R, Forgie V (2008) Price effects of an emissions trading scheme in New Zealand, In: 107th EAAE Seminar: Modelling of Agricultural and Rural Development Policies, European Association for Agricultural Economics, 29 Jan-1 Feb, Seville, Spain.

Reports to clients and working papers (selected)

- Lennox, J** and Madden, J (2016) *Economy-wide impacts of the Melbourne Metro Rail Project*, Report to Melbourne Metro Rail Authority, Feb 2016.
- Lennox, J** and Parrado, R (2015) *Capital-embodied technologies in CGE models*, Nota di Lavoro 2015.002, Fondazione Eni Enrico Mattei, Milan, Italy.
- Lennox, J** and Witajewski, J (2014) *Directed technical change with capital-embodied technologies: implications for climate policy*, Nota di Lavoro 2014.073, Fondazione Eni Enrico Mattei, Milan, Italy.
- Lennox, J**, Daigneault, A, Turner, J, Jhunjhnuwala, K, Reisinger, A (2013) *Integrated Assessment of Trade-Related Impacts of Global Climate Change and Climate Policies*, Technical Report, Ministry for Primary Industries, Wellington, New Zealand.
- Lennox, J.**, Andrew, R., Drysdale, D., Lenzen, McDonald, G, Ndebele, T, Peters, G, Smith, N, Wiedmann, T, Zhang, J. (2010). *Greenhouse gases embodied in New Zealand's trade: Final report*. Technical Report, Ministry of Agriculture and Forestry, Wellington, New Zealand.
- Lennox J** (2010) *Pricing CO₂ emissions from international aviation: an analysis for New Zealand*, Report to Ministry of Transport by Landcare Research, June 2010, Lincoln New Zealand.