

# A/Prof Liam Wagner

Friday, 4 August 2023

## Contact Details:

### Work:

Sustainable Engineering Group,  
Faculty of Science and Engineering,  
Curtin University  
(Email) [liam.wagner@curtin.edu.au](mailto:liam.wagner@curtin.edu.au)

## Research Interests:

Energy and Environmental Economics, Energy Policy, Energy Security

## Education:

<i>Post-Doctoral Fellowship, Economics, University of Queensland</i>	<i>2008-'10</i>
<i>PhD, Mathematics (Awarded May 2008), University of Queensland</i>	<i>2003-'06</i>
<i>BA (Hons 1st Class) in Mathematics, University of Queensland</i>	<i>2002</i>
<i>BA, University of Queensland</i>	<i>2001</i>

## Professional Highlights

>\$5 Million in Competitive grant funding (Since 2008)

1726 Citations and h-index = 17 ([Google Scholar](#))

Successful supervision and placement of 7 PhD, 8 Masters and 6 Honours students

Extensive consulting and advisory experience

>200 Media Interviews in 2022 reaching over 3M people and ~\$3.1M in Advertising Value Equivalent

Significant project ideation and management experience of large grants involving interdisciplinary teams.

Extensive experience leading university engagement and partner development for large-funded grants

## Professional Experience

### Sustainable Engineering Group, Curtin University

Associate Professor (Level D), Sustainable Energy Systems

April 2023 –  
Present

- Co-Research Leader (Program 3: Facilitating Transition), Heavy Industry Low-Carbon Transition (HILT) CRC.
  - Lead researcher for Economics and policy
  - Member of Research Advisory committees
- CRC Copper for Tomorrow, Bid team and Senior Researcher

### School of Economics and Public Policy, The University of Adelaide,

Associate Professor (Level D), Energy and Environmental Economics

Oct 2020 – Mar  
2023

- Co-Research Leader (Program 3: Facilitating Transition), Heavy Industry Low-Carbon Transition (HILT) CRC.
  - Lead researcher for Economics and policy
  - Lead researcher for Program 3 representing the University of Adelaide
  - Member of Research Advisory committees
- Centre for Global Food and Resources
- Institute for Sustainable Energy and Resources
- Centre for Energy Technology
  - Member of the centre's management committee
  - Conference Organising committees for HyPT and HiTemp
- CRC Copper for Tomorrow, Bid team and Senior Researcher
- Scaling Green Hydrogen CRC, Bid Team and Senior Researcher

### Griffith Business School, Griffith University

Lecturer, **Economics**

Feb 2015 – Oct 2020

### The University of Queensland

Research Fellow (Honorary), **Centre for Policy Futures**

April 2019 – April 2021

Research Fellow (Honorary), **Global Change Institute**

March 2015 – March 2018

- Member of the College of Experts for the Global Change Institute

Research Fellow (Level B) & Lecturer, **School of Economics**

Jan 2011 – Feb 2015

Post-Doctoral Research Fellow (Level A), **School of Economics**

2008 – 2010

### Babcock and Brown Power

Trader and Analyst

2007 – 2007

- Brisbane trading desk for Braemar Power Station (Open Cycle Gas Turbine, 450MW)

### The University of Queensland

Researcher Associate (Computational Game Theory), 2005 – 2006  
*School of Economics and the ARC Centre for Complex Systems*

Senior Research Technician, *CRC Mining (formerly CMTE)* 2002 – 2003

### Queensland University of Technology

Lecturer (Casual), *School of Engineering Systems* 2005 – 2005

## Grants

- **Heavy Industry Low Carbon Transition (HILT) CRC** "Review of Regional Hub Development (and the transition to a Zero-Carbon Heavy Industry), Wagner L; Kosturjak A (2022-2023) ~\$290k
- **Future Fuels CRC** "Policy options to support future fuels deployment", Hancock J; Wagner L; Abdul Halim S; Dey T (2022-2023) ~\$220k
- **Future Fuels CRC** "Regional and national implications of developing future fuels over the next 30 years, Young M; Wagner L; Whetton S; Perez P; Mancarella P, (2020-2021), ~\$300k
- "SAPC Inquiry into SA's Renewable Energy Competitiveness" (2022) South Australian Productivity Commission (~\$110k)
- **ARENA** "Cost Effective Renewable Hydrogen through Materials, Modelling and Process Innovation" CI's Ian D. R. Mackinnon, Evan Gray, Mahnaz SHAFIEI, Masakazu SUGIYAMA, Alexander S. Beliaev, Ian O'Hara, Anthony P. O'Mullane, Jose A Alarco, Peter C. Talbot, Graeme J. Millar, *Liam Wagner*, Colin J Webb (2018-2021, \$3.35Million)
- **ARC**, Discovery Grant, DP160102570, "Transition to Customer Response driven Networks", Chief Investigator, CI's Gerard Ledwich, *Liam Wagner*, Ali Arefi (2016 to 2019, \$390,000)
- **CSIRO** Flagship Collaborative Research Program Cluster, "Future Grid Cluster: Economic and Investment Models for Future Grids", CI's John Foster and *Liam Wagner* (2013-2017 \$667,564)
- **NCCARF**: Climate Change Adaption Research Grant "Analysis of institutional adaptability to redress electricity infrastructure vulnerability due to climate change", NCCARF, CI's John Foster, *Liam Wagner* and Craig Froome (2011-2013, \$205,700)

- “Modelling energy poverty & vulnerability in Australia: A big data approach”. Department of Natural Resources Mines and Energy, Queensland Government (2018, **\$70,000**)
- “Economic Modelling Platform for Domestic Energy Markets”, Department of Resources, Energy and Tourism, (now known as the Department of Industry), Chief Investigator (2013, **\$71,500**)
- “The effects of large scale deployment of distributed generation on the national electricity market”, the CSIRO (2009, **\$49,000**)
- UQ Early Career Researcher Award Grant, University of Queensland, Chief Investigator (2014, \$20,000)
- UQ ResTeach, Research and Teaching awarded 5 times by DVC-Academic (2009-10; 2011; 2012; 2013; and 2014, **\$93,200**)
- UQ Post-Doctoral Research Fellowship, “Modelling Current Issues Which Affect the National Electricity Market”, Chief Investigator (2008-2010, **\$220,000**)

## **Publications**

For a full list including working papers, technical reports, and government submissions please see my public ORCID profile (<http://orcid.org/0000-0003-1297-5801>).

### *In Preparation*

- Wagner, L., “Australia’s Transition to a Secure Energy System”
- Wagner, L., “How the internationalisation of Australia’s Natural Gas has effected electricity market bidding behaviour”

### *Submitted for Publication*

- L.T. Nguyen, S. Ratnasiri, N. Rhode and L. Wagner, “Solar Rebound Effects: Short and Long Term Dynamics”, (Revised and Resubmitted, Renewable Energy)

### *Book*

- Foster, J., Bell, W.P., Wild, P., Sharma, D., Sandu, S., Froome, C., Wagner, L., Misra, S., and Bagia, R., “Analysis of institutional adaptability to redress electricity infrastructure vulnerability due to climate change”, 1st ed., Gold Coast, NCCARF, ISBN:9781925039856

### Book Chapter

- Stephens, E., Wagner, L., Ross, I.L. and Hankamer, B., (2012) *Microalgal Production Systems - Global Impact of Industry Scale Up* in "Microalgal Biotechnology: Integration and Economy" Ed. by Posten, C., & Walter, C., Publisher De Gruyter ISBN:3110298279

### Articles

- L.T. Nguyen, S. Ratnasiri, L. Wagner, D. T. Nguyen, N. Rohde, "Solar adoption and the decisive role of the feed-in tariff policy Economics Letters, (Accepted April 2023 and too appear) <https://doi.org/10.1016/j.econlet.2023.111129>
- L.T. Nguyen, S. Ratnasiri, N. Rhode, and L. Wagner, " Industrial energy efficiency and determinants: A stochastic frontier analysis with firm-level data" (Accepted Jan 2023 and too appear) Applied Economics <https://doi.org/10.1080/00036846.2023.2177592>
- Nguyen, L.T., Ratnasiri, S. and Wagner, L., Does Income Affect Climbing the Energy Ladder? A New Utility-Based Approach for Measuring Energy Poverty. The Energy Journal, (2023) <https://doi.org/10.5547/01956574.44.4.lngu>
- Chai, Andreas, Shyama Ratnasiri, and Liam Wagner. "The impact of rising energy prices on energy poverty in Queensland: A microsimulation exercise." Economic Analysis and Policy 71 (2021): 57-72.
- Neelawela, U., Selvanathan, E., Wagner, L.D. "Global Measure of Electricity Security: A Composite Index Approach", *Energy Economics*, Energy Economics, Vol. 81, June 2019, Pages 433-453
- Wagner, L.D., Ross, I., Foster, J., and Hankamer, B., *Tracking global fuel supply, CO<sub>2</sub> emissions and sustainable development*, PLoS ONE 11(3): e0149406. doi:10.1371/journal.pone.0149406
- Molyneaux, L., Brown, C., Wagner, L., and Foster, J., *Measuring resilience in energy systems: Insights from a range of disciplines*, Renewable and Sustainable Energy Reviews, 2016, Vol.59, pp.1068-1079.
- Byrnes, L., Brown, C., Wagner, L., Foster J., *Reviewing the Viability of Renewable Energy in Community Electrification: The Case of Remote Western Australian Communities* Renewable and Sustainable Energy Reviews, 2016, Vol.59, pp.470-481.
- Molyneaux, L., Wagner, L., and Foster, J., *Rural electrification in India: Galilee Basin coal versus decentralised renewable energy micro grids*, Renewable Energy, Vol.89, April 2016, pp.422-436.
- Bratanova, A., Robinson, J., and Wagner, L.D., *New technology adoption for Russian energy generation: what does it cost? A case study for Moscow*, Applied Energy, (2016), vol.162, pp.924-939.
- Wagner, L., Molyneaux, L., and Foster, J., *The magnitude of the impact of a shift from coal to gas under a Carbon Price*, Energy Policy, Vol. 66, Mar. 2014, pp.280-291

- Byrnes, L., Brown, C., Foster, J., and Wagner, L., *Australian Renewable Energy Policy: Barriers and Challenges*, Renewable Energy, Vol. 60, Dec. 2013, Pages 711-721.
- Molyneaux, L., Froome, C., Wagner, L., and Foster, J., *Australian Power: Can renewable technologies change the dominant industry view?*, Renewable Energy, Vol. 60, Dec. 2013, Pages 215-221.
- Molyneaux, L., Wagner, L., Froome, C., and Foster, J., *Resilience and electricity systems: a comparative analysis*, Energy Policy, Vol. 47, August 2012, Pages 188-201.
- Lilley, William E, Reedman, Luke J, Wagner, Liam D, and Alie, Colin F, Szatow, Anthony R., *An economic evaluation of the potential for distributed energy in Australia*, Energy Policy Vol. 51, Dec. 2012, Pages 277-289.
- Stephens, E., Ross, I.L., Mussgnug, J.H., Wagner, L.D., Borowitzka, M.A., Posten, C., Kruse, O., and Hankamer, B., *Future prospects of microalgal biofuel production systems*, Trends in Plant Science, Vol. 15(10), October 2010, Pages 554-564.
- Wagner, L.D., and McDonald, S., *Finding Traitors in Secure Networks Using Byzantine Agreements*, International Journal of Network Security, (2010) Vol. 10, no. 1, pp.11-17.
- Menezes, F., Quiggin, J.C., and Wagner, L.D., *Grandfathering and greenhouse: the role of compensation and adjustment assistance in the introduction of a carbon emissions trading scheme for Australia*, Economic Papers, 2009 vol. 28, no. 2 pp.82-92.
- Wagner, L.D., Ross, J.V., and Possingham, H.P., *Catastrophe management and inter-reserve distance for marine reserve networks*, Ecological Modelling, (2007) Vol. 201, no. 1, pp.82-88.

#### Conference Presentations (Selected)

European IAEE (2022), IAEE (2020), USAEE (2020), IAEE (2019), IAEE(2018), IAEE (2017), AARES (2017), 5th Asian IAEE (2016), ACE (2015), IAEE/USAEE (2014), Oil and Gas Procurement Leaders Forum (2013), USAEE (2013), Australian Solar Energy Society Conference (2013), USAEE (2012), IAEE x2 (2012), USAEE (2011), 8th Asia Pacific Conference on Sustainable Energy & Environmental Technologies (2012), IAEE x2(2011), USAEE x2(2010), IEEE Conference on Innovative Technologies for an Efficient and Reliable Electricity Supply (2010), Australian Agricultural and Resource Economics Society (2010), IAEE x2 (2009), USAEE/IAEE (2009), Australian Agricultural and Resource Economics Society (2009), Asian IAEE (2009), Australian Agricultural and Resource Economics Society (2008), Quantum Field Theory and its Ramifications (2005), International Colloquium on Group Theoretical Methods in Physics (2005), Australian Mathematical Society Meeting (2005), 48th Australian Mathematical Society Meeting x2 (2004), World Congress on Game Theory (2004), Society of Economic Design Conference (2004), International Congress on Industrial and Applied Mathematics x2 (2003), Australian Society of Operations Research (2003), IEEE Congress on Evolutionary Computation (2003).

## **Research Supervision**

#### Research Higher Degree, PhD and MPhil

- Dr Leon Nguyen, June 2018 – 2022 (Awarded December 2022)
- Dr Uththara Neelawela, 2015 - 2020 (Awarded July 2020)
- Dr Minoli Amarasinghe, 2014 - 2018 (Awarded Feb 2019)

- Dr Lynette Molyneaux, 2013 - 2016 (Awarded, 2016), First placement Advance Qld Post-Doctoral Fellowship
- Dr Don Burt, 2013 - 2016 (Awarded, 2016), First placement UQ Research Associate
- Dr Liam Byrnes, 2012 - 2015 (Awarded 2016), First placement Aurizon
- Dr Alexandra Bratanova, 2011 - 2014 (Awarded 2015) First placement Data61/CSIRO

#### Masters by Coursework Thesis

- Gloria Colmenares, 2013. First placement Environmental Consultancy Peru.
- Rose-Marie Denis, 2013. First placement Accenture Consultancy
- Anne Maren Erlandsen, 2012. First placement Synergies Consulting
- Julien Mueller, 2012. First placement Allen & Overy, Frankfurt, Germany
- Leonard Smith, 2012, First placement UQ PhD graduate
- Richard Creagh, 2011. First placement Queensland Competition Authority (Formerly OFGEM UK)
- Lynette Molyneaux, 2010, First placement UQ Post-Doc
- Cameron McLeod, 2010. First placement Department of Mines and Energy, Qld Government

#### Honours (Postgraduate)

- Brendan Kruger, 2013. First placement Greenhill & Co
- Anthony Smith, 2012. First placement Productivity Commission, Australian Government
- Trent Saunders, 2010. First placement Reserve Bank of Australia
- Patrick Hamshire, 2010, First placement ABARES, Australian Government
- Krispin McAndrew, 2010, Awarded ACCC prize for best Micro-Economics Student.
- Joseph Mullins, 2008, First placement NYU PhD.

## **Teaching**

#### University of Adelaide

- Environmental Economics, 2022
- Food production in a future climate, 2022
- Energy Security within Defence and Security studies programs (Semester 2, 2021 and 2022)

#### Griffith University

- Cost Benefit Analysis, (Trimester 2, 2020)
- Environment and Energy Economics, (Trimester 2 2017 to 2019)
- Quantitative Methods, (7011GBS, Trimester 2, 2019)
- Quantitative Methods for Finance Economics and Accounting (2306AFE, Trimesters 1 and 2, 2016 to 2019)
- Intermediate Macroeconomics, (2304AFE, Semester 2 2016)
- Introduction to Economics for Decision Making 1, (1303AFE, Semester 2 2015; Trimesters 1 and 2 2016)
- Introduction to Economics for Decision Making 2, (2303AFE, Trimesters 2 2017; Trimesters 1 and 2 2018).

### University of Queensland

- Economics of Natural Resources, (6 weeks of ECON3710/ECON7730, Semester 2 2011 to 2014)
  - **Distinguished Teaching Award for Small Undergraduate Class**
- Quantitative Skills Workshop a 2 week intensive summer course for new graduate students in economics (Math Camp, 45 hours of Lectures each year, 2010 to 2014)
- Guest Lectures:
  - ECON7430 Competition and Regulation Policy: 2011 and 2012,
  - ECON1050 Mathematical Economics (4 Lectures, 2010),
  - ECON7722 Ecological and Environmental Economics: 2011,
  - ECON3440 Regulatory Economics: 2011 and 2012,
  - MGST7309 Special Topics (Energy): 2009

## **Service**

### Service to the University:

#### ***The University of Adelaide***

Committee Memberships:

Centre for Energy Technology, Management Committee 2020 to 2023

University Sustainability Central Strategy Committee 2021

University Central Mission on Digital Transformation Co-Author 2021

#### ***Griffith University***

- Chair of Examiners, PhD thesis, Griffith Sciences, June 2018
- Griffith Business School budget response
  - Included written comments and oral briefings to journalists (2017 to Present)
- Economics Discipline, Research Advisor (2018-Present)
  - Enhancing researcher visibility on research platforms such as RePec
  - Lobbying journal publishers to list their new journals on RePec
  - Assisting staff with establishing an online presence
- Seminar, Convener (2016- 2017)
- Brown Bag, Convener (2016- 2017)
- First Year Student Experience, GBS (2016- 2017)
- Three Minute Thesis Judge, Departmental Heats (2016)
- Web committee Economics Discipline, (2015- Present)
- Research Committee, Department of Accounting, Finance and Economics, Griffith University (2015- 2017)
  - Presentation on Research Impact to AFE Department Meetings
  - Presentation on Research Impact to Business Law Discipline
  - Presentation to AFE on Journal Impact and Metrics



- Audit of all department academics and their web research presence (Google Scholar, ORCID, ResearcherID, Scopus, RePec, SSRN, Research Gate)
- Planning for departmental wide roll out of Research Web Presence

### ***University of Queensland***

- Technical Research Committee, Solar Flagship Infrastructure Grant, UQ (2013 - 2015)
- Tutor Interview Panel, UQ (2012 - 2013)
- Renewable Energy Technical Advisory Committee (DVC-Research), UQ (2010 - 2011)
- Tutor Training Day, UQ (2013 - 2014)
- Marketing and Engagement, UQ for the Day, TS Expo, UQ Open Day, School Promotional Videos
- Interview Panel, Research Programmer, UQ School of Economics, 2009
- Member of the School of Economics Research Committee, UQ (2008)
- Member of the School of Physical Sciences Research Committee, UQ (2003-2004)
- Member of Department of Mathematics, Departmental Committee, UQ (2003-2004)

### **Service to the Profession:**

- International Conference Committee, 40th International Association of Energy Economics, Singapore, 2015-2017
- Chair of Conference Parallel Sessions. 5th International Association of Energy Economics Asian Conference, Perth February 2016.
- ARC (Australian Research Council).
  - Reviewer of Discovery and Linkage project grant applications.
  - ERA 2015 Reviewer
- Member, College of Experts, Global Change Institute, University of Queensland

### **Thesis Examinations:**

- University of New South Wales
- Sydney University
- Curtin University
- University of Western Australia
- Charles Darwin University

### **Professional Development:**

- Seven Secrets for Supervisors, 2018
- Supervision 101, 2018
- Course Convenors Induction, 2018
- Blended Learning Support Workshop, 2017
- Research Integrity for HDR Supervisors, 2017
- AFE Departmental Teaching Retreat, 2017 and 2018
- Economics and Business Statistics Teaching Retreat, 2017
- Teaching Community of Practice, Engaging and authentic assessment design to preserve academic integrity and promote employability, 2017

### Journal Referring:

Editorial Board Membership: Journal of Modern Power Systems and Clean Energy, Springer Verlag (ISSN: 2196-5420) 2013 to 2015

IEEE Transactions on Sustainable Energy, Energies, Australian Journal of Agriculture and Resource Economics, Games and Economic Behavior, The Energy Journal, Applied Energy, Energy Policy, Economic Analysis and Policy, International Journal of Electrical Power and Energy Systems, Environmental Biology of Fishes, International Journal of Network Security, IEEE Transactions on Parallel and Distributed Systems, Journal of Systems and Software, Journal of Bioeconomics, Future Generation Computer Systems.

### Consultancy Services:

- South Australian Productivity Commission, SA Department of Premier and Cabinet
- Department of Foreign Affairs, "Renewable Energy Technologies and Policy" Training and Policy Briefings to Australian, SE-Asian and Pacific Nations
- Department of Industry, Commonwealth of Australia, "Australian Natural Gas Modelling Framework"
- Departments of Climate Change and Prime Minister and Cabinet, Commonwealth of Australia "Emissions Trading Scheme Consultancy and Legal Services Panel".
- Department of Resources, Energy and Tourism, Commonwealth of Australia, "Clean Energy Advice Panel"
- Department of Resources, Energy and Tourism, Commonwealth of Australia "National Energy Efficiency Initiative Smart Grid, Smart City"
- Department of Employment, Economic Development and Innovation, Queensland Government "Ethanol Blended Fuels Mandate"
- CSIRO, Commonwealth of Australia "Deployment of distributed generation across the National Electricity Market"

### Advisory Services:

- Department of Environment and Energy, Commonwealth of Australia
- Department of Industry, Commonwealth of Australia
- Department of Defence, Commonwealth of Australia
- Department of Foreign Affairs and Trade, Commonwealth of Australia
- Department of Attorney General, Commonwealth of Australia
- Department of Agriculture, Food and Fisheries, Commonwealth of Australia
- ABARES, Commonwealth of Australia
- Department of Resources, Energy and Tourism, Commonwealth of Australia
- Department of Climate Change and Energy Efficiency, Commonwealth of Australia
- Department of Prime Minister and Cabinet, Commonwealth of Australia
- Department of Industry, Commonwealth of Australia
- Queensland Competition Authority, Queensland Government
- Reserve Bank of Australia (RBA)
- Australian Prudential Regulatory Authority (APRA)
- Australian Energy Market Operator (AEMO)
- Department of Natural Resources, Mines and Energy, Queensland Government

- Department of Premier and Cabinet, Queensland Government

**Professional Memberships:**

- Australian Institute of Energy, Fellow (FAIE), 2020 to Present
- International Association of Energy Economics, 2009 to Present
  - US Association of Energy Economics, 2009 to Present
- Institute of Electrical and Electronics Engineers, 2003 to Present
  - Graduate Member 2003-2007,
  - Accredited Member (MIEEE), 2008 to Present