

Dr Liam Wagner

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Contact Details:

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Research Interests

Energy Economics, Energy Policy, Energy Security, Mathematical Economics

Education

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

- \$1.7 Million in Competitive grant funding (Since 2008)
 - 426 Citations and h-index = 8 (405 Citations since 2011)
 - 14 Journal Papers in high impact publications
 - High teaching evaluations as recognized by a 2013 Distinguished Teaching Award
 - Successful supervision and placement of 2 PhD, 9 Masters and 6 Honours thesis students
 - Construction of a Natural Gas Modelling Platform for the Bureau of Resource and Energy Economics (Australian Government)
 - Extensive consulting and industry experience
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Professional Experience

Griffith Business School, Griffith University

- **Lecturer, Economics** *Feb 2015 – Present*

The University of Queensland

- **Research Fellow (Honorary), Global Change Institute** *March 2015 – Present*
 - Member of the College of Experts for the Global Change Institute
- **Research Fellow (B) & Lecturer, School of Economics** *Jan 2011 – Feb 2015*
- **Post-Doctoral Research Fellow (Level A), School of Economics** *2008 – 2010*

Babcock and Brown Power (formerly NewGen Power)

- **Trader and Analyst** *2007 – 2007*

The University of Queensland

- **Researcher Associate**
ARC Centre for Complex Systems *2005 – 2006*

Queensland University of Technology

- **Lecturer (Casual)**
QUT School of Engineering Systems *2005 – 2005*

The University of Queensland

- **Researcher**
CRC Mining (formerly CMTE) *2002 – 2003*
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Grants

Nationally Competitive Category 1

- **ARC Discovery Grant**, DP160102570, “Transition to Customer Response driven Networks”, Chief Investigator (\$390,000)
- **CSIRO Flagship Collaborative Research Program** “*Future Grid Cluster: Economic and Investment Models for Future Grids*”, CSIRO, Chief Investigator (2013-2016) (\$667,564)
- **NCCARF: Climate Change Adaption Research Grant** “*Analysis of institutional adaptability to redress electricity infrastructure vulnerability due to climate change*”, NCCARF, Chief Investigator (2011-2013) (\$205,700)

Nationally Competitive Category 2

- “*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)

Other Competitive University Funded Schemes and Programs

- **UQ Early Career Researcher Award Grant**, University of Queensland, Chief Investigator (\$20,000)
- **UQ Post-Doctoral Research Fellowship**, “*Modelling Current Issues Which Affect the National Electricity Market*”, Chief Investigator (2008-2010) (\$220,000)

Other University Funded Schemes and Programs

- “*ResTeach 2014*”, University of Queensland, Chief Investigator (\$25,700)
- “*ResTeach 2013*”, University of Queensland, Chief Investigator (\$22,500)
- “*ResTeach 2012*”, University of Queensland, Chief Investigator (\$15,300)
- “*ResTeach 2011*”, University of Queensland, Chief Investigator (\$14,700)
- “*ResTeach 2009-10*”, University of Queensland, Chief Investigator (\$15,000)

Publications

Book

16. 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 (**6 Citations**)

Book Chapters

15. 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 (**11 Citations**)

Journal Publications

Journal Rankings for each paper below are denoted by Impact factors and Quartile obtained from Thompson Reuters (via Journal Home pages). Citations and journal H5-index data are sourced from Google Scholar. Metrics are displayed as the tuple [Impact Factor, H5-index, Quartile, Citations].

14. Wagner, L.D., Ross, I., Foster, J., and Hankamer, B., *Tracking global fuel supply, CO₂ emissions and sustainable development*, PLoS ONE 11(3): e0149406. doi:10.1371/journal.pone.0149406 (**Impact Factor: 3.057, h5-index 166, Quartile 1, Citations 5**) Ranked 25th on Google Scholar top 100 Journals
13. 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, (**Impact Factor: 6.798, h5-index 124, Quartile 1, Citations 4**) Ranked 68th on Google Scholar top 100 Journals
12. 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, (**Impact Factor: 6.798, h5-index 124, Quartile 1, Citations 1**) Ranked 68th on Google Scholar top 100 Journals
11. 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, (**Impact Factor: 3.404, h5-index 75, Quartile 2, Citations 2**)
10. 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. (**Impact Factor: 5.746, h5-index 101, Quartile 1, Citations -**)

9. 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
(Impact Factor: 3.045, h5-index 91, Quartile 2, Citations 5)

8. 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
(Impact Factor: 3.404, h5-index 75, Quartile 2, Citations 55)

7. 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 **(Impact Factor: 3.404, h5-index 75, Quartile 2, Citations 15)**

6. 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
(Impact Factor: 3.045, h5-index 91, Quartile 2, Citations 36)

5. 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 **(Impact Factor: 3.045, h5-index 91, Quartile 2, Citations 13)**

4. 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 **(Impact Factor: 10.899, h5-index 76, Quartile 1, Citations 191)**

3. 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 **(Impact Factor: 1.59 , h5-index 21, Quartile - , Citations -)**

2. 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
(Impact Factor: 0.25, h5-index 13, Quartile -, Citations 8)]

1. 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
(Impact Factor: 2.275, h5-index 46, Quartile 2, Citations 12)

Conference Presentations (Selected)

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).

Technical Reports

- Prof John Foster, Dr Liam Wagner and Alexandra Bratanova, "Deliverable 2b: LCOE models: A comparison of the theoretical frameworks and key assumptions" Project 3: Economic and investment models for future grids, CSIRO Future Grid Flagship Cluster
- Prof John Foster, Dr Ariel Liebman and Dr Liam Wagner, "Deliverable 2b: Future Grid Scenarios" Project 3: Economic and investment models for future grids, CSIRO Future Grid Flagship Cluster
- Prof John Foster, Dr Liam Wagner and Liam Byrnes, "Deliverable 1b. Distributed Generation in Australia a short review" Project 3: Economic and investment models for future grids, CSIRO Future Grid Flagship Cluster
- Prof John Foster and Dr Liam Wagner, "Deliverable 1a. International experience with transformations in electricity markets: Short Review" Project 3: Economic and investment models for future grids, CSIRO Future Grid Flagship Cluster
- Global Change Institute (2013), University of Queensland, Delivering a competitive Australian power system Part 3: A Better way to competitive power 2035 (Contributing Author)
- Global Change Institute (2013), University of Queensland, Delivering a competitive Australian power system Part 2: The challenges, the scenarios (Contributing Author)
- John Foster, William Paul Bell, Craig Froome, Phillip Wild, Liam Wagner, Deepak Sharma, Suwin Sandu, Suchi Misra and Ravindra Bagia, Institutional adaptability to redress electricity infrastructure vulnerability due to climate change
- Global Change Institute (2011), University of Queensland, Delivering a competitive Australian power system Part 1: Australia's Global Position (Contributing Author)

- John Foster, Liam Wagner, Phil Wild, William Paul Bell, Junhua Zhao and Craig Froome, Final Report: Market and Economic Modelling of the Intelligent Grid
- John Foster, Liam Wagner, Phil Wild, William Paul Bell, Junhua Zhao and Craig Froome, Market and Economic Modelling of the Intelligent Grid: Interim Report 2011
- John Foster, Liam Wagner, Phil Wild, Junhua Zhao, Lucas Skoofa, Craig Froome and Ariel Liebman, Market and Economic Modelling of the Intelligent Grid: End of Year Report 2010
- John Foster, Liam Wagner, Junhua Zhao, Lucas Skoofa and Craig Froome, Market and Economic Modelling of the Intelligent Grid: End of Year Report 2009
- John Foster, Liam Wagner and Ariel Liebman, Market and Economic Modelling of the Intelligent Grid: 1st Interim Report 2009
- CSIRO (2009), "Intelligent Grid - A value proposition for distributed energy in Australia". CSIRO Report ET/IR 1152. (Contributing Author)

Government Submissions (Public)

- Barry Ball, Simon Bartlett, John Foster, Craig Froome, Hal Gurgenci, Ben Hankamer, Ove Hoegh-Guldberg, Lynette Molyneux, Tapan Saha and Liam Wagner, "Response to the Department of Energy and Water Supply: 30 Year Electricity Strategy"
- Molyneux, L., Foster, J., and Wagner, L. "Is there a more effective way to reduce carbon emissions?", 10th May 2011, Department of Climate Change and Energy Efficiency, Commonwealth of Australia.
- Menezes, F., Quiggin, J.C., and Wagner, L.D., The role of compensation and adjustment assistance in the introduction of an emissions trading scheme for Australia: response to the Green Paper, 10th September 2008, Department of Climate Change, Commonwealth of Australia.
- Froome, C., and Wagner, L.D., Designing Feed-in Tariffs for Solar PV in Queensland. 6th February 2009, Office of Clean Energy, Department of Mines and Energy, Queensland Government

Teaching

- 2015 – present. 1303AFE and 2303AFE Introduction to Economics for Decision Making, Micro and Macro Economics
- 2010 – 2014. Course coordinator Quantitative Skills Workshop a 2 week intensive summer course for new graduate students in economics (45 hours of Lectures each year)
- 2011 – 2014. Lecturer ECON3710/ECON7730 Economics of Natural Resources
 - **Distinguished Teaching Award for Small Undergraduate Class**
- 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
- Tutor: ECON1050 Introductory Mathematical Economics: 2010, ECON2050 Mathematical Economics: 2011

Supervision

PhD/MPhil

- Minoli Amarasinghe, 2014 - Present
- Megan Surawski, 2013 -Present
- Lynette Molyneaux, 2013 - Present
- Don Burt, 2013 - Present
- Liam Byrnes, 2012 - 2015 (**Awarded 12th February 2016**)
- Alexandra Bratanova, 2011 - 2014 (**Awarded 13th February 2015**)

Masters

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

Honours (Postgraduate)

- Brendan Kruger, 2013. Now at a Merchant Bank
 - Anthony Smith, 2012. Now at the Productivity Commission, Australian Government
 - Trent Saunders, 2010. Now at the Reserve Bank of Australia
 - Patrick Hamshere, 2010, Now at ABARES, Australian Government
 - Krispin McAndrew, 2010, Awarded ACCC prize for best Micro-Economics Student.
 - Joseph Mullins, 2008, Awards: Valedictorian, ACCC prize for best Micro-Economics Student and Best Overall Student.
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Professional Activities

Invited Academic Visits:

- California Institute of Technology (Caltech), CA USA, Aug. to Sept. 2008
- University of Canterbury, Christchurch New Zealand, Oct. to Nov. 2005

Journal Referring:

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

Committee Membership:

- Research Committee, Department of Accounting, Finance and Economics, Griffith University (2015- Present)
- Technical Research Committee, Solar Flagship Infrastructure Grant, UQ (2013 - Present)
- Renewable Energy Technical Advisory Committee (DVC-Research), UQ (2010 - 2011)
- 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)

University Service

- Tutor Interview Panel, UQ (2012 - 2013)
- 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

Consultancy:

- 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"
- CSIRO, Commonwealth of Australia "Deployment of distributed generation across the National Electricity Market"
- Department of Employment, Economic Development and Innovation, Queensland Government "Ethanol Blended Fuels Mandate"

Advisory Service:

- Bureau of Resources and Energy Economics, 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
- Office of Clean Energy, Queensland Government
- Queensland Competition Authority, independent agency of the Queensland Government
- EcoFund, Queensland Government
- Jilin Provincial Government, P.R. China
- Reserve Bank of Australia

Media:

- ABC Radio National, "Shale Gas - the next big thing", 20/6/2010
- ABC Radio National, Background Briefing, "Gas Rush" 20/6/2010
- ABC Radio Southern Queensland, "Coal Seam Gas Report", 24/6/2010
- ABC Radio Southern Queensland, "Japan's Energy Demand", 22/3/2011
- ABC Radio Southern Queensland, "Carbon Tax", 11/07/2011
- ABC Radio Tropical North, Mackay, "Japan's Energy Demand", 18/3/2011
- Global Post, news website, 11/7/2010
- Sunday Mail, Brisbane Weekend Newspaper, NewsCorp (circ. 550,000) 4/7/2010
- Sunshine Coast Daily, Regional Newspaper, APN (circ.31,000) 30/10/2010
- Southern Star, Quest Newspapers "Landfill site to power 6000 homes", Newscorp,

16/5/2011

- Today Tonight, Channel Seven Australia, 25/10/2010
- Triple J, Hack, “Coal Seam Gas”, 25/8/2011
- ABC 612-Brisbane Radio , Mornings with Steve Austin, “Is solar pushing up electricity prices?”, 25/2/2013
- ABC NEWS 24, “Electricity providers return to coal-fired power as natural gas export revenue soars”, 3/7/2014
- ABC 612-Brisbane Radio, Breakfast with Spencer Howson, Interview by Eric Tlozek “Stanwell power station to remain open (for now)”, 29/9/2014
- ABC TV, 7:30 Qld, “Government powers up to sell state asset leases”, 17/10/2014
- ABC Radio National, AM, “Adani: New blow to Australia’s biggest coal project”, 06/08/2015
- Channel 7 News North Queensland, ”The viability of the Adani mine”, 6/8/2015
- ABC Radio National, PM, “Queenslander’s preparing for another power price hike”, 28/08/2015
- ABC Radio National, The World Today, “Qld Govt to introduce mandatory quotas of ethanol-fuel at petrol stations”, 2/9/2015
- The Conversation, “Economic modelling may overplay the costs of Australia’s 2030 climate target” 3/9/2015
- The Conversation, “Woodside’s failed Papua New Guinea power play shows the growing desperation in the gas sector” 16/09/2015
- Gladstone Observer, “Rio Tinto given a negative outlook from investor service”, 29/2/2016
- The Conversation, “Australian coal v renewables: how much will it cost to bring electricity to India’s poor?”, March 2016
- Briefings to: ABC TV, Agence France-Press, Associated Press, Bloomberg, Reuters

Professional Memberships:

- 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

References:

Prof. John Foster, FASSA
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and Management Group,
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Prof. John Quiggin, FASSA
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Management Group,
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Prof. Ove Hoegh-Guldberg, FAA
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Prof. Paul Simshauser,
Director General, DEWS
Queensland Government and
Griffith Business School,
Griffith University