

Cormac O'Malley

Mobile: +44 7807 489867

Email: c.omalley19@imperial.ac.uk

EDUCATION

PhD, Efficient and Secure Operation of Low Carbon Power Systems

Aug 2019 -

Imperial College London

- Designing and implementing novel methods (convex optimisation, reinforcement learning) to solve operational challenges of future low-carbon power systems. Supervised by Prof Goran Strbac, Dr Fei Teng & Dr Luis Badesa.
- Achieved first author publication of two journal papers published in IEEE Trans on Power Systems, the top journal in the field with an acceptance rate of less than 15%.
- Extensive model development work (C++, Python), large experience of collaborative code development (git) and use of high performance computing for experimentation.
- Demonstrated ability to represent real problems as mathematical optimisations, coded in (C++, Python – PYOMO package, Matlab - Yalmip toolbox), solved efficiently by commercial solver of choice (MOSEK, XPRESS, GUROBI).
- Delivered research for: Innovate UK funded project E4Future; EPSRC funded project IDLES and PhD funding body National Grid ESO.

MENG, Engineering Science: First Class (72.3%)

2014-2018

University of Oxford, Pembroke College

- 77% in final year research project.
- Achieved the top mark in all power system modules offered.
- Academic Scholar and Paul Martins BP Engineering Scholarship, both awarded for academic achievement

EXPERIENCE

Energy Engineer

Feb-May 2022

Ministry for Business Energy and Industrial Strategy (BEIS)

- Planned and produced business case (approved) to justify spending £3.75m to set up a UK centre for AI in energy.
- Significantly upgraded an internal model (Python – PYOMO, git), enabling the co-optimisation of renewable generation capacity, storage assets and EV charger types under different weather and demand scenarios. It is still actively being used by BEIS to inform policy decisions.
- Carried out research on the marginal value of bidirectional electric vehicle chargers over unidirectional, presented conclusions to over 40 senior civil servants

Postgraduate Teaching Assistant

2020-2022

Imperial College London

- Devised, supervised, and assessed a 1 year masters student project. Research was a success and resulted in a full journal paper (currently under peer review).
- Assessed and marked five master student theses.

OTHER RELEVANT EXPERIENCE

Founder and Host of the Podcast: Low Carbon Conversations

2021

Imperial College's Energy Futures Lab

- Produced and launched podcast focussed on discussing the technical solutions to overcome UK decarbonisation challenges. Available on Spotify and Apple Podcasts.
- Achieved average listenership of over 1,500 people per podcast.
- Demonstrates ability to explain complicated energy transition topics in simple engaging words.
- Organization and networking ability to find expert guests, graphic designer and sound producer.

PUBLICATIONS

O'Malley, C., Badesa, L., Parajeles, M., & Strbac, G. (2022). Chance-constrained allocation of UFLS candidate feeders under high penetration of distributed generation. (*Under Review*)

O'Malley, C., Badesa, L., Teng, F., & Strbac, G. (2022). Frequency Response from Aggregated V2G Chargers With Uncertain EV Connections. IEEE Transactions on Power Systems.

O'Malley, C., Badesa, L., Teng, F., & Strbac, G. (2021). Probabilistic Scheduling of UFLS to Secure Credible Contingencies in Low Inertia Systems. IEEE Transactions on Power Systems, 2021-October.

Imperial College London, Nissan Motor GB, E.ON Drive, (2021). The Drive Towards a Low-Carbon Grid: Unlocking the Value of Vehicle-to-Grid Fleets in Britain. White Paper, available [here](#)

O'Malley, C., Aunedi, M., Teng, F., & Strbac, G. (2020). Value of Fleet Vehicle to Grid in Providing Transmission System Operator Services. IEEE EVER Conference.