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## 2024

**How to minimise the cost of green hydrogen with hybrid supply: A regional case study in China.**

Huang J and Balcombe P. *Applied Energy* vol. 355, Elsevier.

## 2023

**Simulating the Variability of Methane and CO2 Emissions from Liquefied Natural Gas Shipping: A Time-in-Mode and Carrier Technology Approach.**

Rosselot KS, Balcombe P, Ravikumar AP and Allen DT. *Acs Sustainable Chemistry & Engineering* vol. 11, (43) 15632-15643. American Chemical Society (Acs).

**Future use of natural gas under tightening climate targets.**

Dubey L, Speirs J, Balcombe P, Tariq N, Brandon N and Hawkes A. *Futures* vol. 150, Elsevier.

**A global review of methane policies reveals that only 13% of emissions are covered with unclear effectiveness.**

Olczak M, Piebalgs A and Balcombe P. *One Earth* vol. 6, (5) 519-535. Elsevier.

**Technical and economic analysis of different colours of producing hydrogen in China.**

Huang J, Balcombe P and Feng Z. *Fuel* vol. 337, Elsevier.

**Comparing satellite methane measurements to inventory estimates: A Canadian case study.**

Dubey L, Cooper J, Staffell I, Hawkes A and Balcombe P. *Atmospheric Environment X* vol. 17, Elsevier.

## 2022

**Indicate separate contributions of long-lived and short-lived greenhouse gases in emission targets.**

Allen MR, Peters GP, Shine KP, Azar C, Balcombe P, Boucher O, Cain M, Ciais P, Collins W, Forster PM, Frame DJ, Friedlingstein P, Fyson C, Gasser T, Hare B, Jenkins S, Hamburg SP, Johansson DJA, Lynch J, Macey A, Morfeldt J, Nauels A, Ocko I, Oppenheimer M, Pacala SW, Pierrehumbert R, Rogelj J, Schaeffer M, Schleussner CF and Shindell D. *Npj Climate and Atmospheric Science* vol. 5, (1).

**Methane regulation in the EU: Stakeholder perspectives on MRV and emissions reductions.**

Olczak M, Piebalgs A and Balcombe P. *Environmental Science & Policy* vol. 137, 314-322. Elsevier Bv.

**Response to Comment on LNG Supply Chains: A Supplier-Specific Life-Cycle Assessment for Improved Emission Accounting.**

Roman-White SA, Littlefield JA, Fleury KG, Allen DT, Balcombe P, Konschnik KE, Ewing J, Ross GB and George F. *Acs Sustainable Chemistry and Engineering*. American Chemical Society.

**Total Methane and CO2 Emissions from Liquefied Natural Gas Carrier Ships: The First Primary Measurements.**

Balcombe P, Heggø D and Harrison M. *Environmental Science and Technology*. American Chemical Society.

**Water electrolysis: from textbook knowledge to the latest scientific strategies and industrial developments.**

Chatenet M, Pollet BG, Dekel DR, Dionigi F, Deseure J, Millet P, Braatz RD, Bazant MZ, Eikerling M, Staffell I, Balcombe P, Shao-Horn Y and Schäfer H. *Chemical Society Reviews* vol. 51, (11) 4583-4762.

**Correction: Levelized cost of CO<sub>2</sub> mitigation from hydrogen production routes.**

Parkinson B, Balcombe P, Speirs JF, Hawkes AD and Hellgardt K. *Energy & Environmental Science* vol. 15, (12) 5425-5433. *Royal Society of Chemistry (Rsc)*.

## 2021

**Organic waste to energy: resource potential and barriers to uptake in Chile.**

Ludlow J, Jalil-Vega F, Rivera XS, Garrido R, Hawkes A, Staffell I and Balcombe P. *Sustainable Production and Consumption*.

**The quantification of methane emissions and assessment of emissions data for the largest natural gas supply chains.**

Cooper J, Balcombe P and Hawkes A. *Journal of Cleaner Production* 128856-128856.

**LNG Supply Chains: A Supplier-Specific Life-Cycle Assessment for Improved Emission Accounting.**

Roman-White SA, Littlefield JA, Fleury KG, Allen DT, Balcombe P, Konschnik KE, Ewing J, Ross GB and George F. *ACS Sustainable Chemistry & Engineering*. *American Chemical Society (Acs)*.

**The future of coal investment, trade, and stranded assets.**

Auger T, Trby J, Balcombe P and Staffell I. *Joule*. *Published by Elsevier Inc*.

**How can LNG-fuelled ships meet decarbonisation targets? An environmental and economic analysis.**

Balcombe P, Staffell I, Kerdan IG, Speirs JF, Brandon NP and Hawkes AD. *Energy* vol. 227. *Elsevier*.

**Chapter 3 Life Cycle Assessment as a Metric for Circular Economy.**

Rivera XCS, Balcombe P and Niero M. *Life Cycle Assessment* 54-80. *Royal Society of Chemistry (Rsc)*.

## 2020

**Natural gas fuel and greenhouse gas emissions in trucks and ships.**

Speirs J, Balcombe P, Blomerus P, Stettler M, Achurra-Gonzalez P, Woo M, Ainalis D, Cooper J, Sharafian A, Merida W, Crow D, Giarola S, Shah N, Brandon N and Hawkes A. *Progress in Energy* vol. 2, (1) 012002-012002.

## 2019

**Life cycle environmental impacts of natural gas drivetrains used in UK road freight and impacts to UK emission targets.**

Cooper J, Hawkes A and Balcombe P. *Science of The Total Environment* vol. 674, 482-493. *Elsevier*.

**Assessing the impact of future greenhouse gas emissions from natural gas production.**

Crow DJG, Balcombe P, Brandon N and Hawkes AD. *Science of The Total Environment* vol. 668, 1242-1258. *Elsevier*.

**How to decarbonise international shipping: Options for fuels, technologies and policies.**

Balcombe P, Brierley J, Lewis C, Skatvedt L, Speirs J, Hawkes A and Staffell I. *Energy Conversion and Management* vol. 182, 72-88.

**The role of hydrogen and fuel cells in the global energy system.**

Staffell I, Scamman D, Velazquez Abad A, Balcombe P, Dodds PE, Ekins P, Shah N and Ward KR. *Energy and Environmental Science* vol. 12, (2) 463-491.

**Levelized cost of CO<sub>2</sub> mitigation from hydrogen production routes.**

Parkinson B, Balcombe P, Speirs JF, Hawkes AD and Hellgardt K. *Energy and Environmental Science* vol. 12, (1) 19-40.

## 2018

**Methane emissions: choosing the right climate metric and time horizon.**

Balcombe P, Speirs JF, Brandon NP and Hawkes AD. *Environmental Science: Processes and Impacts* vol. 20, (10) 1323-1339.

**The carbon credentials of hydrogen gas networks and supply chains.**

Balcombe P, Speirs J, Johnson E, Martin J, Brandon N and Hawkes A. *Renewable and Sustainable Energy Reviews* vol. 91, 1077-1088. *Elsevier*.

**A greener gas grid: What are the options.**

Speirs J, Balcombe P, Johnson E, Martin J, Brandon N and Hawkes A. *Energy Policy* vol. 118, 291-297.

**Characterising the distribution of methane and carbon dioxide emissions from the natural gas supply chain.**

Balcombe P, Brandon NP and Hawkes AD. *Journal of Cleaner Production* vol. 172, 2019-2032.

**2017**

**The Natural Gas Supply Chain: The Importance of Methane and Carbon Dioxide Emissions.**

Balcombe P, Anderson K, Speirs J, Brandon N and Hawkes A. *Acs Sustainable Chemistry and Engineering* vol. 5, (1) 3-20.

**2015**

**Energy self-sufficiency, grid demand variability and consumer costs: Integrating solar PV, Stirling engine CHP and battery storage.**

Balcombe P, Rigby D and Azapagic A. *Applied Energy* vol. 155, 393-408.Elsevier.

**Environmental impacts of microgeneration: Integrating solar PV, Stirling engine CHP and battery storage.**

Balcombe P, Rigby D and Azapagic A. *Applied Energy* vol. 139, 245-259.Elsevier.

**2013**

**Motivations and barriers associated with adopting microgeneration energy technologies in the UK.**

Balcombe P, Rigby D and Azapagic A. *Renewable and Sustainable Energy Reviews* vol. 22, 655-666.Elsevier.