

Unveiling the Overlooked: Challenges and Drivers for Higher Education Institutes in Scope 3 Emission Reporting

Komudya Aththudawe Gamachchige and Ishara Mudiyansege

Faculty of Business and Law
University of Wollongong
NSW, Australia

kckag789@uowmail.edu.au, Idrm127@uowmail.edu.au

Matthew Pepper

Professor, Faculty of Business and Law
University of Wollongong
NSW, Australia
pepper@uow.edu.au

Clayton McDowell

University of Wollongong
NSW, Australia
claytonm@uow.edu.au

Anura De Zoysa

Associate Professor
Faculty of Business and Law
University of Wollongong
NSW, Australia
anura@uow.edu.au

Abstract

Scope 3 emissions entail the highest potential for emission reduction but are also considered to be the most challenging emission Scope to quantify. While the regulatory requirements across many countries are mandating the Scope 3 emission disclosure for organisations, the institutional readiness is still not up to the expected levels. Specifically, the service supply chains face multiple challenges in quantifying and disclosing Scope 3 emissions. Higher education institutes (HEIs) play a pivotal role in driving societal change towards sustainability. Hence, HEIs are expected to act as stewards in comprehensive Scope 3 emission quantification and disclosure. Through a systematic review of the literature, it was identified that the challenges faced by HEIs in their attempts to measure and report Scope 3 emissions can be divided into 4 main categories: data collection and methodological challenges, operational and resource capacity constraints, behavioural and awareness limitations and complexity of the supply chain. Also, we have conducted 10 interviews with key internal stakeholders of the HEI supply chain and using thematic analysis, we identified that the institutional mechanisms and contextual factors play a pivotal role when developing a strategic framework for standardising Scope 3 emission reporting in HEIs. Further, the key 3 elements that drive Scope 3 emission disclosure were identified as people and culture, governance, and resources and infrastructure. The

importance of this study lies in developing a strategic framework for standardising Scope 3 emission reporting that streamlines the reporting procedure and improves comparability and benchmarking of HEI sustainability attempts.

Keywords

Scope 3 emissions, Greenhouse gas emissions, Higher education institutes, Universities and Sustainability.

Biographies

Ms. Komudya Aththudawe Gamachchige received a B.Sc. (Hons.) in Management and Information Technology from the University of Kelaniya, Sri Lanka, in 2023 and is currently reading for her PhD in Business at the University of Wollongong, Australia. She is currently working as an associate lecturer in the faculty of business at the University of Wollongong, Australia.

Ms. Ishara Mudiyansege received a B.Sc. (Hons.) in Management and Information Technology from the University of Kelaniya, Sri Lanka, in 2023 and is currently reading for her PhD in Business at the University of Wollongong, Australia.

Prof. Matthew Pepper is a professor in the faculty of Business and Law at the University of Wollongong (UOW). He is also the discipline leader for supply chain and analytics in the faculty and the director of the Centre for Supply Chain Research at the UOW. He earned a B.Eng. (Hons) in Mechanical Engineering and an M.Sc. (Dist) in Manufacturing Systems from the University of Greenwich, London, United Kingdom. Matt's PhD research centred on the design and application of continuous improvement frameworks in process industry supply chains. Recent research and consultancy activities focus on lean thinking, six sigma based process improvement and supply chain design and optimisation. Matt has undertaken research and consultancy across a range of industry sectors, including the manufacturing and process industries as well as local government. Most recently his work has focused on the implementation of continuous improvement in service environments. Matt is a member of the Editorial Advisory Boards for the Journal of Manufacturing Technology Management, the International Journal of Lean Six Sigma, International Journal of Information and Operations Management Education. He is also an Associate Editor for the Global Journal of Flexible Systems Management and the IIMK Society and Management Review Journal.

Dr. Clayton McDowell is the Associate Director of Sustainability for the University of Wollongong, where his team is responsible for managing energy, water, and biodiversity initiatives as UOW aims to become carbon neutral by 2030. Clayton previously worked as a Research Associate at the Sustainable Buildings Research Centre (SBRC) where he managed the Australian Renewable Energy Agency (ARENA) and Australian Institute of Refrigeration, Air conditioning and Heating (AIRAH) funded Innovation Hub for Affordable Heating and Cooling (i-Hub) project. This project created living laboratories within education and aged care facilities and enabled industry partners to evaluate innovative technologies within a real-world environment before taking their products to market. Clayton is a member of Engineers Australia and has numerous years of experience working in heavy manufacturing and research roles. He holds a PhD from the University of Wollongong, where his research investigated energy consumption patterns and internal thermal environments of elderly low-income residential buildings across the Greater Illawarra NSW for the purpose of informing future energy efficiency policies and programs. Additionally, he holds a Bachelor of Mechanical Engineering and a Master of Engineering Practice from the University of Wollongong.

Associate Professor Anura De Zoysa is currently working in the faculty of Business and Law at the University of Wollongong (UOW). joined the School in 2001 having completed his PhD in Accounting at University of Wollongong, Australia. Prior to this, Anura spent 8 years in Japan teaching and conducting research into the cost management and management accounting practices of Japanese manufacturing companies. Anura's extensive experience in teaching both undergraduate and postgraduate subjects at universities in Sri Lanka, Japan and Australia spans more than 30 years. His ability to draw on this experience makes him a valued member of the School. He has more than 90 publications in both English and Japanese, including 38 journal articles and 39 domestic and international conference papers. Anura's publications on UOW's institutional repository, Research Online, have attracted more than 82,000 downloads from 172 countries since 2008. He has 1,700 citations and H index of 18 as per Google Scholar. Anura is a professionally qualified accountant holding CPA, CMA and FCA memberships. He also has practical

experience in accounting, auditing and taxation from working as a chartered accountant. For his teaching efforts, Anura has been awarded the Vice Chancellors University Award for Outstanding Contribution to Teaching and Learning (OCTAL) in 2019. For his research supervision efforts, he was also awarded the Vice Chancellors Award for Research Supervision (Highly Commended) in 2019. These awards are a testament to his long and sustained contributions to the domains of both teaching and research.