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Zawawi, N.H., Asmawi, M.Z., Zen, I.S.

THE PERFORMANCE OF KUALA LUMPUR'S CARBON EMISSIONS IN THE CONTEXT OF URBAN PLANNING
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Department of Urban and Regional Planning, Kulliyyah of Architecture and Environmental Design, INTERNATIONAL ISLAMIC UNIVERSITY, Malaysia

Abstract
Cities are responsible for 70% of greenhouse gas (GHG) emissions on a global scale, and cities play an important role in reducing GHG emissions. It is essential for Kuala Lumpur to consider reducing the city's GHG emissions. The city's GHG emission inventory can track and monitor the effectiveness of the climate action plans that has been implemented. The aim of this study is to identify the performance level of GHG emissions in Kuala Lumpur between 2010 and 2019. It is also to identify the performance of Kuala Lumpur's GHG emissions in 2019 in comparison to the global and Malaysian level. Data is calculated using the Global Protocol for Community-Scale Greenhouse Gas Emissions Inventory (GPC), which is recognised and utilised globally. Secondary data for the years 2010 and 2019 was analysed as well as the performance of the Kuala Lumpur GHG emission profile in 2019. With three (3) identified sources of emissions, Kuala Lumpur managed to reduce its GHG emission intensity from 2010 by 74.07% in 2019. The city's GHG emission was recorded at 15,675 ktCO2eq in 2019. The stationary energy sector contributes higher GHG emission than other sector, with 12,043 ktCO2eq (76.83%), followed by the transportation sector with 3,180 ktCO2eq (20.29%) and the waste sector with 452 ktCO2eq (2.88%). As of 2019, Kuala Lumpur's absolute carbon contribution to the global average is 0.03%, whereas Malaysia's absolute carbon contribution is 4.74%. Additionally, the city contributes just 0.07 kgCO2eq/RM (30.17%) to Malaysia's total GHG emission intensity.

Author Keywords
Carbon Emission; Greenhouse Gas Emission; Greenhouse Gas Intensity; Gross Domestic Product; Kuala Lumpur

References

- (2023) *Bahagian Kawal Selia Petroleum Sektor Barang Kawalan dan Subsidi Kementerian Perdagangan Dalam Negeri dan Kos Sara Hidup (KPDN)*, Malaysia
- Balaban, O., de Oliveira, J. A.
  Understanding the links between urban regeneration and climate-friendly urban development: Lessons from two case studies in Japan
  (2013) *Local Environment*, 19 (8), pp. 868-890.
- Bruckner, B., Hubacek, K., Shan, Y., Zhong, H., Feng, K.
  Impacts of poverty alleviation on national and global carbon emissions
  (2021) *Nat. Sustain*, 5 (4), pp. 311-320.
- (2014) *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories*, p. 9. World Resource Institute (WRI), 10 & 48
- (2023), Retrieved December 4, 2023, from
- (2022) *Performance & Statistical Information on the Malaysian Electricity Supply Industry 2019*, p. 15. Malaysia
- Fischedick, M., Schaeffer, R., Adedoyin, A., Akai, M., Bruckner, T., Clarke, L., Wright, R.
  Mitigation potential and costs
  (2012) *IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation*, pp. 791-864.
  Edenhofer, O., et al. (eds), (-)

- Grafakos, S., Gianoli, A., Tsatsou, A.
  Towards the development of an integrated sustainability and resilience benefits assessment framework of urban green growth interventions
  (2016) *Sustainability*, 8 (5), p. 461.

- Grafakos, S., Pacteau, C., Delgado, M., Landauer, M., Lucon, O., Driscoll, P.
  Integrating mitigation and adaptation: Opportunities and challenges
  (2018) *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network*, pp. 101-138.
  Rosenzweig, C., W. Solecki, P. Romero-Lankao, S. Mehrotra, S. Dhakal, and S. Ali Ibrahim (eds), Cambridge University Press. New York

- (2006) *2006 IPCC Guidelines for National Greenhouse Gas Inventories*,
  Intergovernmental Panel on Climate Change

- (2023) *Garis Panduan Perancangan Bandar Rendah Karbon dan Berdaya Tahan Perubahan Iklim*, 32, p. 35.
  Kementerian Pembangunan Kerajaan Tempatan, Malaysia

- (2017) *Kuala Lumpur City Hall's Carbon Management Plan 2017-2022*,
  Malaysia

- (2018) *Kuala Lumpur Low Carbon Society Blueprint 2030*,
  Malaysia

- (2021) *Kuala Lumpur Climate Action Plan 2050*,
  Malaysia

- (2022) *2020 Kuala Lumpur City-Wide Greenhouse Gas Inventory*,
  Malaysia

- (2022) *Kuala Lumpur Local Plan 2040 (Draft)*,
  Malaysia

- (2023) *Kuala Lumpur Structure Plan 2040*,
  Malaysia

- Whittinghill, Kyle
  (2023) *Environmental Science*,
  University of Pittsburgh, 9.1.5

- Liddle, B., Lung, S.
  Might electricity consumption cause urbanization instead: Evidence from heterogeneous panel long-run causality tests
  (2014) *Glob. Environ. Change*, 24, pp. 42-51.

- Liu, H., Fan, X.
  Value-Added-Based Accounting of CO2 Emissions: A Multi-Regional Input-Output Approach
  (2017) *Sustainability*, 9 (12), p. 2220.

- Liu, L.-C., Wu, G., Wang, J.-N., Wei, Y.-M.
  China's carbon emissions from urban and rural households during 1992-2007
  (2011) *J. Clean. Prod*, 19 (15), pp. 1754-1762.

- Lucon, O., Ürge-Vorsatz, D., Zain Ahmed, A., Akbari, H., Bertoldi, P., Cabeza, L. F., Eyre, N., Vilariño, M. V.
  Buildings
  (2014) *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, pp. 671-738.

Edenhofer, O., Pichs-Madruga, R., Sokona, Y., Farahani, E., Kadner, S., Seyboth, K., Adler, A., Baum, I., Brunner, S., Eickemeier, P., Kriemann, B., Savolainen, J., Schlömer, S., von Stechow, C., Zwickel, T., and Minx, J. C. (eds), (-)

- (2021) *First Edition 2021 National Low Carbon City Masterplan*, Malaysia, 25
- (2022) *Malaysia Fourth Biennal Update Report Under the United Nations Framework Convention on Climate Change*, Malaysia, 40 & 57
- Noor, Norzailawati Mohd, Abdullah, Alias, Manzahari, Mohd Nasrul Hanis **Land Cover Change Detection Analysis on Urban Green Area Loss Using GIS and Remote Sensing Techniques** (2013) *Planning Malaysia: Journal of the Malaysian Institute of Planners*, XI, pp. 125-138. (2013), Page
- O'Neill, B.C. **Global demographic trends and future carbon emissions** (2010) *Proc. Natl. Acad. Sci*, 107 (41), pp. 17521-17526.
- (2023), Malaysia
- (2019) *Population Facts December No.2019/6*, p. 1. United Nations Department of Economic and Social Affairs
- (2022) *Putrajaya Low Carbon Green City Initiatives Report*, Malaysia
- Revi, A., Satterthwaite, D. E., Aragón-Durand, F., Corfee-Morlot, J., Kiunsi, R. B. R., Pelling, M., Roberts, D. C., Solecki, W. **Urban areas** (2014) *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, pp. 535-612.
- **Seberang Perai Climate Action Strategy. Malaysia The Intergovernmental Panel on Climate (2023)** (2020), Climate Change 2023 Synthesis Report Change. Intergovernmental Panel on Climate Change, 4 & 44
- (2030) *Greenhouse Effect and Anthropogenic Warming*, Retrieved from
- Fong, Wee-Kean, Matsumoto, Hiroshi, Ho, Chin-Siong, Lun, Yu-Fat **Energy Consumption and Carbon Dioxide Emission Considerations in the Urban Planning Process in Malaysia** (2008) *Planning Malaysia: Journal of the Malaysian Institute of Planners (2008)*, VI, pp. 99-128.
- (2022) *Climate Change 2022 Mitigation of Climate Change*, Intergovernmental Panel on Climate Change, 229 & 236

Correspondence Address
Zen I.S.; International Islamic UniversityMalaysia; email: zainora@iium.edu.my

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