

SHAPING AN ECO-KUWAIT

FROM POLICIES TO PRACTICE



Alexandra Gomes, Asseel Al-Ragam and Sharifa Alshalfan

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Abstract

Kuwait faces critical environmental challenges driven by high per capita energy consumption, car-dominated urban development, and fossil fuel dependency. Despite national commitments to carbon neutrality by 2060, there remains a significant gap between policy intentions and real-world implementation. This research investigates the intersections of governance, user behaviour, and policy-practice mediation across the housing, energy, and transport sectors. By employing a mixed methods approach that integrates stakeholder engagement, comparative policy analysis, and the proposal of policy-practice mediation tools, the study aims to bridge policy and behavioural gaps. It highlights the role of data in accessing, informing, and monitoring policies and behaviours, and proposes stronger, dedicated institutions, a rethinking of energy subsidies, the adoption of bottom-up and participatory approaches, and the use of social media platforms for advocacy, communication, and the promotion of sustainable lifestyles. These interventions can contribute to advancing Kuwait's sustainable transition through context-specific, evidence-based, inclusive, and scalable policy measures.

Introduction

Kuwait is increasingly exposed to the adverse effects of climate change, experiencing weather fluctuations, unprecedented rises in temperature, and severe events such as dust storms and flooding.¹ These environmental challenges are largely attributed to Kuwait's geographical characteristics and its high level of fossil fuel-dependent urbanisation.² Such conditions pose significant health risks to the population, particularly among vulnerable groups such as migrant workers. Population growth, currently estimated at an annual rate of 2%, exacerbates pressures on basic services and natural resources, amplifying social and spatial inequalities.³ Despite these risks, public awareness of climate change remains limited, and mitigation strategies continue to be slow.⁴

Kuwait remains one of the leading emitters of greenhouse gases, with hydrocarbon exports forming the backbone of its national economy.⁵ Several domestic factors also contribute to Kuwait's high per capita energy consumption,⁶ which ranks among the highest globally.⁷ These include inefficient urban form,⁸ elevated energy demand,⁹ and inefficient transport systems.¹⁰ Residential buildings alone account for 60% of the country's total electricity consumption, with the transportation sector adding further to this load. Government subsidies covering up to 95% of household energy costs act as a disincentive for energy efficiency and conservation,¹¹ while placing a significant financial burden on the

¹ Deen Shariff Sharp, Abrar Alshammari & Kanwal Hameed, 'The Quiet Emergency: Experiences and Understandings of Climate Change in Kuwait', *LSE Middle East Centre Kuwait Programme Paper Series* 13 (October 2021). Available at: <https://eprints.lse.ac.uk/112491/> (accessed 8 October 2025); Mohammed Barhouma, 'Kuwait and Climate Change Challenge: The Difficult Path to Sustainability', *EPC*, 19 May 2023. Available at: <https://epc.ae/en/details/brief/kuwait-and-climate-change-challenge-the-difficult-path-to-sustainability> (accessed 9 October 2025).

² UNFCCC, 'The Paris Agreement', UN (2015). Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement> (accessed 9 October 2025).

³ PACI, 'PACI Services', 2021. Available at: <https://services.paci.gov.kw/card/inquiry?lang=en&service-Type=2> (accessed 9 October 2025).

⁴ Sharp et al., 'The Quiet Emergency'.

⁵ Ibid.

⁶ EPA, Kuwait, 'National Communication (NC)', NC 2. (EPA, 2019). Available at: <https://unfccc.int/documents/198622> (accessed 9 October 2025).

⁷ Enerdata, 'Kuwait Energy Information', 4 December 2023. Available at: <https://www.enerdata.net/estore/energy-market/kuwait/> (accessed 9 October 2025).

⁸ Mae Al-Ansari & Saud AlKhaled, 'Sustainable Urban Forms in the Arabian Gulf: An Evidence-Based Analysis of Kuwaiti Social Housing Neighborhoods at Jaber Al-Ahmed City', *Frontiers in Built Environment* 9 (2023). Available at: <https://www.frontiersin.org/articles/10.3389/fbuil.2023.1154523> (accessed 9 October 2025).

⁹ Badria Jaffar et al., 'Understanding Energy Demand in Kuwaiti Villas: Findings from a Quantitative Household Survey', *Energy and Buildings* 165 (April 2018): 379–89. Available at: <https://doi.org/10.1016/j.enbuild.2018.01.055> (accessed 9 October 2025).

¹⁰ Philipp Rode et al., 'Resource Urbanisms: Asia's Divergent City Models of Kuwait, Abu Dhabi, Singapore and Hong Kong', *LSE Cities Paper Series* 71 (2017).

¹¹ Jaffar et al., 'Understanding Energy Demand in Kuwaiti Villas'.

state.¹² However, deeper structural constraints, not just distortions in pricing, constitute the primary barriers to sustainability and reform. Genuine diversification and efficiency gains require simultaneous reforms in the labour market and competition policies.¹³

Nevertheless, Kuwait's energy use is also shaped by urban development, which influences consumption behaviours and constrains opportunities for low-carbon mobility. This is reflected in weak public transport services, poorly designed streets and pavements, and inefficient housing structures that elevate energy consumption.¹⁴ These outcomes are a direct consequence of planning decisions that prioritise car use and fail to integrate sustainable transport and urban design principles.¹⁵

Gomes et al.¹⁶ argue that Kuwait's urban form hinders public transport use, walkability, and social interaction, calling for planning, design and institutional reforms to reduce fragmentation and enable coordinated, sustainable change. Similarly, Adeel and Alfahad¹⁷ highlight that public transport's inequitable structure restricts mobility and reinforces class-based disparities and environmental degradation.

Housing policy is another area of concern. Al-Ansari and AlKhaled¹⁸ urge more sustainable urban forms in social housing developments, noting Public Authority for Housing Welfare's (PAHW) plan for a 20 percent renewable energy target in public buildings and smart and sustainable model homes. Vital reforms are needed, as the housing backlog¹⁹ neared 103,000 by 2025,²⁰ increasing future demand for energy.

While a growing body of literature has examined how climate change exacerbates socio-spatial inequalities in Kuwait,²¹ there is limited focus on upstream causes and

¹² 'Barriers Facing the Transition toward Sustainable Energy System in Kuwait', *Energy Strategy Reviews* 38 (November 2021): 100779. Available at: <https://doi.org/10.1016/j.esr.2021.100779> (accessed 9 October 2025).

¹³ 'Diversification in Gulf Hydrocarbon Economies and Interactions with Energy Subsidy Reform: Lessons from Kuwait', OIES paper: MEP 23 (Oxford Institute for Energy Studies, 2019). Available at: <https://www.oxfordenergy.org/publications/diversification-gulf-hydrocarbon-economies-interactions-energy-subsidy-reform-lessons-kuwait/> (accessed 9 October 2025).

¹⁴ Rode et al., 'Resource Urbanisms'; Sharp et al., 'The Quiet Emergency'; Alexandra Gomes et al., 'Reclaiming Public Space in Kuwait's Residential Neighbourhoods: An Applied Policy-Oriented Approach', *LSE Middle East Centre Kuwait Programme Paper Series* 8 (2021). Available at: <https://eprints.lse.ac.uk/108938/> (accessed 21 October 2025).

¹⁵ Gomes et al., 'Reclaiming Public Space in Kuwait's Residential Neighbourhoods'.

¹⁶ Ibid.

¹⁷ Muhammad Adeel & Reem Alfahad, 'Towards an Equitable Transport System in Kuwait: Understanding the Social and Cultural Context of Transport Accessibility', *LSE Middle East Centre Kuwait Programme Paper Series* 14 (2021). Available at: <https://eprints.lse.ac.uk/112988/> (accessed 21 October 2025).

¹⁸ Al-Ansari & AlKhaled, 'Sustainable Urban Forms in the Arabian Gulf'.

¹⁹ Kuwaiti families are entitled to housing or land provided by the welfare state, however, there is a backlog of applications. See more in Sharifa AlShalfan, 'The Right to Housing in Kuwait: An Urban Injustice in a Socially Just System', *LSE Middle East Centre Kuwait Programme Paper Series* (2013). Available at: <https://eprints.lse.ac.uk/55012/> (accessed 21 October 2025).

²⁰ PAHW, 'Existing Housing Applications', *Government of Kuwait* (2025). Available at: https://www.pahw.gov.kw/Downloads/Schedules/Existing_housing_applications20250714.pdf (accessed 31 October 2025).

²¹ Sharp et al., 'The Quiet Emergency'; Barak Alahmad et al., 'Climate Change and Health in Kuwait: Temperature and Mortality Projections under Different Climatic Scenarios', *Environmental Research Letters* 17/7 (2022): 074001. Available at: <https://doi.org/10.1088/1748-9326/ac7601> (accessed 21 October 2025).

mechanisms for encouraging political or civic behavioural change,²² such as car dependency, inefficient building practices, and high energy consumption that reinforce climate change in a self-perpetuating cycle.²³

Although the Government of Kuwait has pledged to transition to a ‘carbon neutral’ economy by 2060,²⁴ there is a lack of clarity about the scope of this commitment and the pathways for its implementation. The state continues to struggle with translating climate goals into actionable strategies. Existing governance structures lack the capacity to evaluate, monitor, and verify progress toward stated objectives,²⁵ and there is a significant policy gap in addressing urban ecological concepts.²⁶

The initial 2012 National Communication (NC)²⁷ provided a descriptive baseline entry into the UNFCCC process, emphasising national circumstances, vulnerability, and sectoral data, with limited emphasis on quantifiable mitigation commitments. It highlighted Kuwait’s arid climate, water scarcity, and fossil fuel dependence, while primarily positioning climate action within the constraints of its hydrocarbon economy. In contrast, the 2021 updated NC²⁸ aligns with the Paris Agreement’s procedural expectations, setting a clear timeframe (2015–2035), adopting the circular carbon economy framework, and introducing a measurable mitigation target: avoiding 7.4 percent of projected emissions by 2035 through renewable energy projects, efficiency improvements, and carbon capture. Despite this progress, ambition remains low compared to global benchmarks, still relying on conditional language, modest reductions, and strong emphasis on national economic vulnerabilities (particularly oil dependence). Together, the two documents reveal Kuwait’s gradual institutionalisation of climate policy without fundamentally altering the centrality of hydrocarbons in its economy.

To address some of these critical gaps, this research focuses on fostering positive change in Kuwait from an upstream perspective (see Figure 1).

²² 2025); Salman Zafar, ‘Climate Change Impacts in Kuwait’, *EcoMENA*, 12 March 2023. Available at: <https://www.ecomena.org/climate-change-kuwait/> (accessed 21 October 2025); Barak Alahmad et al., ‘The Effects of Temperature on Short-Term Mortality Risk in Kuwait: A Time-Series Analysis’, *Environmental Research* 171 (April 2019): 278–84. Available at: <https://doi.org/10.1016/j.envres.2019.01.029> (accessed 21 October 2025).

²³ Jaffar et al., ‘Understanding Energy Demand in Kuwaiti Villas’.

²⁴ NASA, ‘The Causes of Climate Change’, *Climate Change: Vital Signs of the Planet*. Available at: <https://climate.nasa.gov/causes> (accessed 21 October 2025); United Nations, ‘Causes and Effects of Climate Change’, *United Nations*. Available at: <https://www.un.org/en/climatechange/science/causes-effects-climate-change> (accessed 14 November 2025).

²⁵ KUNA, ‘Official: Kuwait’s 2060 Low-Carbon Strategy Based on Economic Pillars, in Partnership with UN’, KUNA, 2 December 2023. Available at: <https://www.kuna.net.kw/ArticleDetails.aspx?id=3125088&language=en> (accessed 21 October 2025).

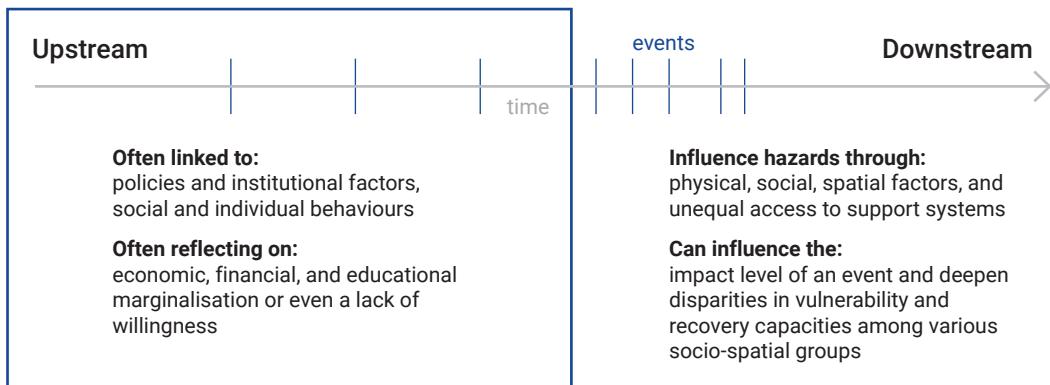
²⁶ Mohamad Alatoom, ‘Policy Paper for the Environment Pillar. Overview of Gaps, Challenges, and Way Forward in Kuwait National Development Plan 2015–2020’, KPPC (2019). Available at: <https://services.paci.gov.kw/card/inquiry?lang=en&serviceType=2> (accessed 21 October 2025).

²⁷ Ibid.

²⁸ EPA, Kuwait, ‘National Communication (NC)’, NC 1. (EPA, 2012). Available at: <https://unfccc.int/documents/109653> (accessed 21 October 2025).

²⁹ EPA, Kuwait, ‘National Communication (NC)’, NC 2.

Figure 1: Upstream and Downstream Perspectives on Climate Change



Benchmarking and data availability are essential components for analysing upstream sustainability measures. Atkinson and Gelan²⁹ address data scarcity by constructing a comprehensive greenhouse gas (GHG) emissions inventory for Kuwait,³⁰ highlighting that robust risk analysis and management is vital for assessing development prospects.³¹ In parallel, data is used to examine migrant worker mortality, demonstrating how risk tools can guide policy and decision-making and highlight the disproportionate vulnerability of certain groups to climate change.³² Recent work by Alsahli and Alkandary³³ reinforces this picture, showing that Kuwait's marine, water, land, and health systems face interconnected stressors – rising sea temperatures, salinity, land degradation, dust storms, and heat waves – while adaptation options remain severely limited. However, adaptation is undermined by a widespread lack of awareness, which hinders both data generation and evidence-based policymaking. As Sharp, Alshammari, and Hameed³⁴ note, Kuwait must prioritise public and policymaker awareness of climate change and better integrate these into national planning and policy discourse. Despite formal commitments to ecological transition, climate change remains largely absent from public engagement channels, including schools, media and government.³⁵ This research highlights a significant gap between state-level commitments and realities on the ground, drawing attention to both public apathy and institutional shortcomings in addressing climate challenges.

Building on these studies, this research seeks to examine the political and behavioural drivers that could foster a more sustainable Kuwait. It aims to assess the sustainability

²⁹ Giles Atkinson & Ayele Gelen, 'Sustainability, Natural Capital and Climate Change in Kuwait,' *LSE Middle East Centre Kuwait Programme Paper Series* 12 (2021). Available at: <https://eprints.lse.ac.uk/110972/> (accessed 21 October 2025).

³⁰ Ibid.

³¹ Ibid.

³² Mohammad M. M. Alsahli & Meshari Al-Harbi, 'Environmental Justice in Kuwait Metropolitan Area: A Spatial Analysis of Land-Use Impact on Environmental Quality Variability', *Local Environment*, 2 January 2023. Available at: <https://www.tandfonline.com/doi/abs/10.1080/13549839.2022.2119378> (accessed 21 October 2025); Alahmad et al., 'Climate Change and Health in Kuwait'.

³³ Mohammad M. M. Alsahli & Dhary S. Alkandary, 'Climate Change Vulnerability of Kuwait: A Cross-Sectoral Assessment', *Arabian Journal of Geosciences* 17/6 (2024): 183. Available at: <https://doi.org/10.1007/s12517-024-11992-7> (accessed 21 October 2025).

³⁴ Sharp, Alshammari & Hameed, 'The Quiet Emergency'.

³⁵ Ibid.

potential within three interlinked sectors: housing,³⁶ energy,³⁷ and transport,³⁸ chosen for their relevance to sustainable urban development and their role as barriers to Kuwait's energy transition.³⁹ The research aims to identify barriers and opportunities to sustainable policy, as well as the role of user awareness and behaviour in shaping sustainable outcomes. It seeks to support policymakers and academics in developing a cohesive sustainability framework for Kuwait, offering actionable policy recommendations, tools to raise public awareness and promote behavioural change and explore platforms that facilitate citizen participation in urban sustainability transitions.⁴⁰

Central to the inquiry are key propositional questions: How can governance policies foster more sustainable behaviours? In what ways can Kuwait promote the widespread adoption of sustainable behaviours? And how might mediation tools be leveraged to raise awareness of climate change? Considering these questions, and following the introduction of its Methodological Approach, the report is structured into three primary analytical chapters: (1) Assessment of Governance and Policies, (2) Analysing Behaviour and Needs, and (3) Creation of a Policy-Practice Mediation Tool. The final section, Conclusion and Impact, synthesises insights from the preceding chapters and presents key recommendations aimed at improving the environmental quality of Kuwait's urban landscape while promoting a more resilient Kuwait.

Methodology

This study investigates how governance, behavioural change, and participatory mediation tools can contribute to more sustainable practices in Kuwait, with particular attention to the sectors of energy, housing, and transport. To address these objectives, a mixed-methods design was employed, combining policy analysis, qualitative research, and participatory design in order to generate a comprehensive perspective.

Table 1 presents the research framework, which aligns the central research questions with focus areas, aims, data collection strategies, and analytical approaches.

³⁶ Al-Ansari & AlKhaled, 'Sustainable Urban Forms in the Arabian Gulf'; Sharifa Alshalfan et al., *The Multiplex Typology: Living in Kuwait's Hybrid Homes* (Berlin: DOM Publishers, 2022).

³⁷ Jaffar et al., 'Understanding Energy Demand in Kuwaiti Villas'.

³⁸ Rode et al., 'Resource Urbanisms'; Gomes et al., 'Reclaiming Public Space in Kuwait's Residential Neighbourhoods'; Adeel & Alfahe, 'Towards an Equitable Transport System in Kuwait'.

³⁹ Philipp Rode et al., 'Between Abundance and Constraints: The Natural Resource Equation of Asia's Diverging, Higher-Income City Models', *Land* 9/11 (2020): 11. Available at: <https://doi.org/10.3390/land9110426> (accessed 21 October 2025); Alsayegh, 'Barriers Facing the Transition toward Sustainable Energy System in Kuwait'.

⁴⁰ A prominent example is Décider pour Paris, a platform launched by the City of Paris as part of its participatory governance strategy, 2022. Available at: <https://decider.paris.fr/decider/jsp/site/Portal.jsp> (accessed 21 October 2025). This platform allows residents to propose and vote on projects aimed at improving sustainability and inclusivity across neighbourhoods and the city at large, expanding civic engagement beyond conventional political institutions.

Table 1: Research Framework

Research Question	Chapter	Focus Area	Aims	Data Collection Methods	Analytical Frameworks
How can governance policies foster more sustainable behaviours?	Assessment of Governance and Policies section (Top-down Approach)	Institutional & Policy Landscape	1. Understand the institutional framework and existing policies. 2. Assess policy progress in sustainable urban development. 3. Identify drivers, gaps, and critical elements shaping sustainability in Kuwait	Analysis of 36 key policy documents (English & Arabic) ⁴¹ Engagement with stakeholders, activists, and experts.	Walt & Gilson's policy triangle (analysing policy through content, context, process, and actors)
In what ways can Kuwait promote the widespread adoption of sustainable behaviours?	Analysing Behaviour and Needs section (Bottom-up Approach)	Social Perceptions & Behavioural Change	1. Gather opinions on attitudes, perceptions, and needs regarding sustainable behaviours.	The use of an existing survey promoted by Kuwait Commute ^{42,43} Engagement with stakeholders, activists, and experts.	Realist methodology (identifying mechanisms that can lead to different outcomes and their monitoring processes)
How might mediation tools be leveraged to raise awareness of climate change?	Creation of a Policy-Practice Mediation Tool	Awareness & Mediation Tools	1. Gather input on potential tools. 2. Explore small-scale tools to assess effectiveness of strategies.	Engagement with stakeholders and students ⁴⁴	Participatory design (synthesising co-created ideas into tool concepts)

Data Collection

As seen before, this study integrates top-down and bottom-up perspectives. The top-down component examines Kuwait's environmental policies and governance structures. The bottom-up component explores behavioural attitudes and social perceptions of sustainability. A third dimension bridges these two perspectives through the collective discussions around ideas for a mediation tool intended to connect policy and practice.

⁴¹ Including Kuwait's NDC (2021) and Policy Paper for the Environment Pillar (2019).

⁴² The team had access to the Kuwait Commute Survey Results, 'Report', *Kuwait Commute* (2023). Available at: https://assets.publishing.service.gov.uk/media/60f7fdf7d3bf7f56824cc634/Brief_introduction_to_realist_evaluation.pdf (accessed 14 November 2025).

⁴³ The 'Kuwait Commute' initiative is a grassroots movement launched in mid-2018 by Jassim Al-Awadhi. It was created with the goal of promoting safe, convenient, eco-friendly, and inclusive public transportation – starting with a pilot bus loop in Kuwait City. See also Imran Shaik, 'In Conversation with Jassim Al Awadhi', KPMG, 4 February 2025. Available at: <https://kpmg.com/kw/en/home/insights/2025/02/emerging-trends-in-infrastructure/in-conversation-with-jassim-al-awadhi.html> (accessed 21 October 2025).

⁴⁴ This included online and in-person brainstorming and interactive discussions using whiteboards, as well as sticky notes, to collect and discuss ideas for possible tools.

To ensure diverse perspectives, four forms of engagement were conducted, as summarised in Table 2:

Table 2: Forms of Engagement

Type of Engagement	Format	Date(s)	Participants
Expert consultations	Advisory Board ⁴⁵ meetings (online and in presence)	9 April to 21 May 2025	Three members from Kuwait Commute, EPA, and KISR
Stakeholder consultations	Workshop (online)	9 April 2025	Nine institutional and academic representatives from sectors including housing, energy, transport, and economy, including Kuwait University, KISR, Kuwait Green Building Council, Dasman Diabetes Centre and SEEDS Academy
Activist consultations	Interviews (online)	6 February to 13 June 2025	Five environmental and inclusion, equity and participation activists
Student engagement	Class session (in presence)	14 May 2025	Seven architecture undergraduate students

These methods were complemented by the review of 36 key policy documents in both English and Arabic, alongside regulatory texts, press and online media sources, and findings from relevant household surveys.⁴⁶

Analytical Frameworks

Policy Analysis

The evaluation of governance and policy frameworks applied Walt and Gilson's⁴⁷ policy triangle,⁴⁸ which analyses policy through four interrelated dimensions – context, content, process, and actors – and was selected for its ability to capture the institutional complexity and sectoral fragmentation of Kuwait's policy landscape, assessing not only the substance of policies but also the dynamics of their development, implementation, and impact.

Behaviour Analysis

The investigation of social perceptions and behavioural change adopted a realist methodology.⁴⁹ Realist evaluation asks: what works, for whom, under what circumstances, and

⁴⁵ The members of the Advisory Board were selected for their specific and recognised expertise in the three topics.

⁴⁶ As the Kuwait Commute Survey Results.

⁴⁷ 'Reforming the Health Sector in Developing Countries: The Central Role of Policy Analysis', *Health Policy and Planning* 9/4 (1994): 353–70. Available at: <https://doi.org/10.1093/heapol/9.4.353> (accessed 21 October 2025).

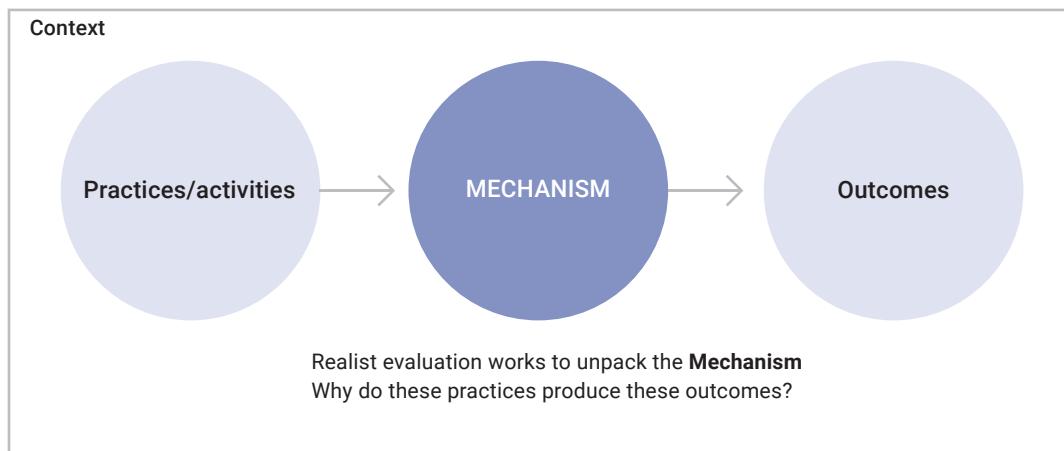
⁴⁸ Gill Walt et al., “‘Doing’ Health Policy Analysis: Methodological and Conceptual Reflections and Challenges”, *Health Policy and Planning* 23/5 (2008): 308–17. Available at: <https://doi.org/10.1093/heapol/czn024> (accessed 21 October 2025); Nihal Ekin Erkan, ‘A Framework Proposal for Analysis of Urbanization Policy’, *European Scientific Journal, ESJ* 13/14 (2017): 14. Available at: <https://doi.org/10.19044/esj.2017.v13n14p24> (accessed 21 October 2025).

⁴⁹ Lee Mona, ‘Introduction to Realist Evaluation’, *PAN*, 3 April 2017. Available at: <https://paninbc.ca/2017/04/03/introduction-to-realistic-evaluation/> (accessed 21 October 2025).

how?⁵⁰ This approach is particularly suited to interventions that produce context-dependent outcomes.⁵¹

In this study, the framework was adapted to focus on potential mechanisms – termed opportunities – that could enable sustainable behavioural change in Kuwait. The evaluation examined practices, mechanisms, and outcomes (see Figure 2), mapping how behavioural interventions could be designed and monitored to better sustain behavioural change.

Figure 2: The Realist Evaluation of Policies⁵²



Participatory Design for Mediation Tools

The final component of the methodology employed a simplified participatory design analysis⁵³ to explore the creation of mediation tools that could bridge policy and practice. This shorter chapter examines how stakeholder engagement can inform the creation of practical mediation tools. Input from students and stakeholders was synthesised into potential concepts for digital platforms or communication tools that can raise awareness, foster behavioural change, and support real-time, data-driven decision-making. If developed, some of these platforms could also serve as policy generators by aggregating real-time user data and offering location-specific insights to support more sustainable practices at the local level.

⁵⁰ Nick Tilley, 'Realistic Evaluation: An Overview', *ResearchGate*, January 2000. Available at: https://www.researchgate.net/publication/252160435_Realistic_Evaluation_An_Overview (accessed 21 October 2025).

⁵¹ Ibid.

⁵² Adapted from Mona, 'Introduction to Realist Evaluation'.

⁵³ Andres Lombana Bermudez, 'Participatory Design: Tools and Techniques for Re-Imagining Digital Transformations', *vVvAlog*, 17 June 2022. Available at: <https://andreslombana.net/blog/2022/06/16/participatory-design-tools-and-techniques-for-re-imagining-digital-transformations/> (accessed 14 November 2025); Peter Wacnik et al., 'Participatory Design: A Systematic Review and Insights for Future Practice', *Design Science* 11 (September 2024). Available at: <https://doi.org/10.48550/arXiv.2409.17952> (accessed 14 November 2025).

Methodological Limitations

This study was primarily propositional (see research questions in Table 1) identifying challenges to propose suggestions for a more sustainable Kuwait. Consequently, it does not address why some existing policies and strategies are not being implemented or debated; an issue for future, complementary research.

Other limitations include potential biases from the qualitative approach, the reliance on existing survey data limiting question design, and minor interpretative challenges across Arabic and English sources. Nonetheless, using multiple methods and perspectives enhanced the reliability and validity of the findings.

Assessment of Governance and Policies

This section presents the results of the assessment of existing environmental policies in Kuwait, focusing on the three central themes of energy, housing, and transport. Supported by Walt and Gilson's policy triangle (see Methodology section), it identifies key policy drivers, gaps, and barriers (summarised in Figures 3–5), followed by a set of proposals for amendments and benchmarking strategies to enhance the country's sustainability framework.

Energy

Kuwait's energy sector is undergoing a period of rapid transformation. The country's exceptionally high per capita electricity consumption – estimated at 15,590 kWh – is among the highest globally and is projected to triple by 2030 if current patterns persist.⁵⁴ However, its challenge lies on its extreme peak demand during summer, which forces the government to maintain vast, underutilised generating capacity. This structurally inefficient system has already seen demand outpace supply on several occasions, leading to power outages and increased risks of grid instability.⁵⁵ In response, balancing energy production and consumption while diversifying energy sources has become a national priority. Kuwait has set a target of generating 50 percent of its electricity from renewable sources by 2050.⁵⁶ However, neither the formulation of this target figure is clear nor is its feasibility, particularly in the context of projected urban growth and continued reliance on fossil fuels.

Following the overview of recent developments, this sub-section will focus on the political and policy context shaping the country's energy transition⁵⁷ (see Figure 3), resulting

⁵⁴ Mariam Alsaad, 'The Unsustainability of Kuwait's Energy System: Examining Kuwait's Energy Problem', *LSE Middle East Centre Blog*, 11 February 2021. Available at: <https://blogs.lse.ac.uk/mec/2021/02/11/the-unsustainability-of-kuwait-s-energy-system-examining-kuwait-s-energy-problem/> (accessed 21 October 2025).

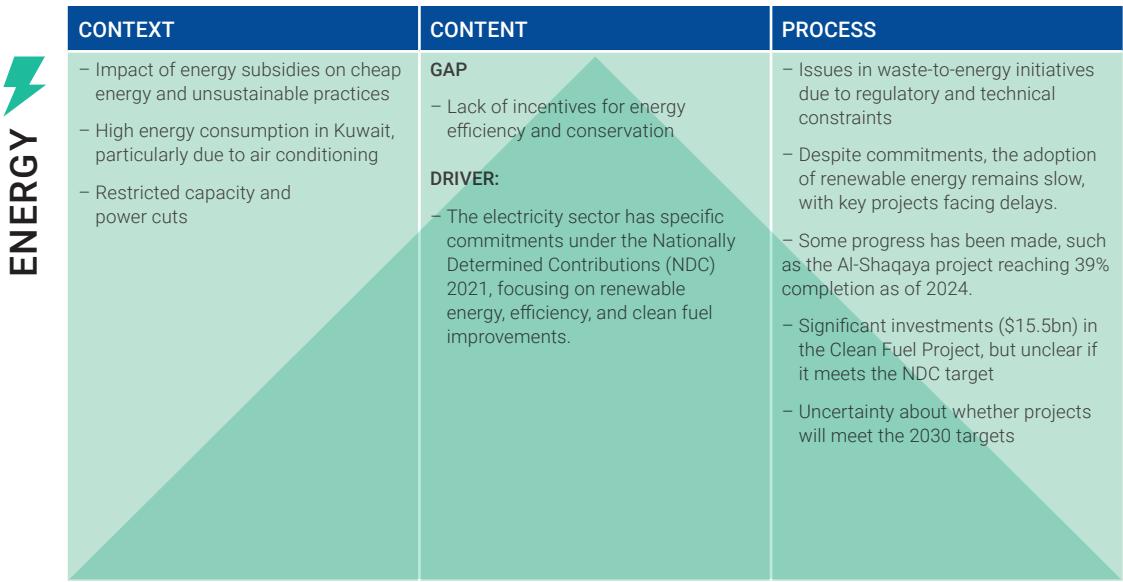
⁵⁵ Reuters, 'Kuwait Implements Power Cuts as Demand Outstrips Restricted Capacity', *Reuters*, 2 April 2025. Available at: <https://www.reuters.com/business/energy/kuwait-implements-power-cuts-demand-outstrips-restricted-capacity-2025-04-02/> (accessed 21 October 2025).

⁵⁶ Kuwait Times, 'Kuwait to Launch Shagaya, Eyes 50% Renewables by 2050', *Kuwait Times*, 11 May 2025. Available at: <https://kuwaittimes.com/article/27522/kuwait/other-news/kuwait-to-launch-shagaya-eyes-50-renewables-by-2050/> (accessed 21 October 2025).

⁵⁷ Although highly relevant, this study will not include an analysis of the energy associated with desalinated water, the primary freshwater source in Kuwait, which is produced using fossil fuels.

from the policy analysis and interviews, as well as proposed policy improvements and changes emerging from the project engagement with stakeholders, activists, and experts.

Figure 3: Energy Sector Policy Analysis



As illustrated in Figure 3, key barriers include strong energy subsidies (context), lack of incentives to change (content) and weak regulatory enforcement (process).

As an oil-dependent state, Kuwait has committed to translating international sustainability pledges into domestic action. Nonetheless, policy analysts and scholars have raised concerns that some of the targets set by the government often replicate external models without sufficiently adapting to Kuwait's specific environmental, institutional, and socio-economic context.⁵⁸ Along with this, the responsibility to achieve it falls across multiple entities, yet neither the entities nor the specific roles or sub-targets have been identified, which presents an additional challenge to accountability and compliance.⁵⁹ This often leads to the risk of setting targets and standards that are difficult to achieve or sustain (aiming for a target that is not achievable due to lack of appropriate structure and institution can also deteriorate intention and willingness to act)⁶⁰ and to an overreliance on carbon credit trading mechanisms,⁶¹ rather than structural reforms.

Kuwait's fragmented institutional setup lacks a central body for climate action, unlike

⁵⁸ Manfred Hafner et al., 'Low-Carbon Energy Strategies in MENA Countries', in *The Energy Sector and Energy Geopolitics in the MENA Region at a Crossroad: Towards a Great Transformation?*, eds Manfred Hafner, Pier Paolo Raimondi & Benedetta Bonometti (Cham: Springer International Publishing, 2023). Available at: https://doi.org/10.1007/978-3-031-30705-8_4 (accessed 21 October 2025).

⁵⁹ Ibid.

⁶⁰ Yousef M. Al-Abdullah et al., 'Evaluating the Energy Transition for Kuwait: Modeling Kuwait's Energy Future and Decarbonization Challenges', *Energy and Climate Change* 6 (December 2025): 100189. Available at: <https://doi.org/10.1016/j.egycc.2025.100189> (accessed 21 October 2025).

⁶¹ Consultancy-me.com, 'Gulf Will Need to Embrace Carbon Offsetting to Meet Climate Goals', 9 May 2023. Available at: <https://www.consultancy-me.com/news/6173/gulf-will-need-to-embrace-carbon-offsetting-to-meet-climate-goals> (accessed 21 October 2025).

its neighbours. The UAE empowers a single ministry to lead climate policy, Saudi Arabia drives decarbonisation through high-level national programmes like the Saudi Green Initiative (SGI), and Oman advances its goals via the Oman Sustainability Centre. In contrast, Kuwait's approach remains siloed. Key entities such as the Ministry of Electricity, Water and Renewable Energy (MEWRE), the Kuwait Petroleum Corporation (KPC), and the Environment Public Authority (EPA) operate within distinct mandates that often create competing priorities. The EPA, in particular, functions primarily as a regulator, not a national strategist. This fragmentation is also reflected in Kuwait's climate documentation: the 2021 Nationally Determined Contribution presents modest mitigation pledges aimed at international positioning, while the 2021 National Adaptation Plan assigns sectoral responsibilities for domestic resilience. Taken together, these reveal a two-track approach where international compliance and domestic planning proceed in parallel but without integration. Without a powerful, overarching authority to reconcile these efforts, Kuwait's climate policy remains a collection of disjointed initiatives that lack coherence, limiting both implementation and international alignment.

Many current energy policies in Kuwait focus on scaling up renewable energy. However, setting targets alone is seen as insufficient. A successful transition requires the development of a broader enabling environment, including regulatory frameworks, an energy market capable of managing fluctuating renewable supplies, and investment in infrastructure. Furthermore, decades of highly stable and heavily subsidised energy supply have shaped consumer expectations and investment patterns, creating a behavioural inertia that complicates the shift to a flexible and decentralised system as the renewable one. In this context, the private sector (through businesses and corporations) is seen as having an important role to play, particularly in advancing technologies and developing sub-markets for energy services.

Another critical area of reform is energy subsidies. Low energy costs coupled with weak building codes and poor appliance efficiency standards have led to higher consumption, with economic costs to the government (Kuwait's tariff is the world's sixth lowest).⁶² Hence, it is often hypothesised that even modest adjustments in energy pricing could potentially influence consumption habits and promote conservation. However, the effectiveness of such policies is highly dependent on the price signal's ability to overcome the low elasticity of demand typical in high-income countries and counteract deeply embedded socio-cultural consumption norms. Therefore, for pricing reform to be a viable tool for energy conservation, it would need to be designed and implemented as part of a broader framework of structural and behavioural interventions and accompanied by awareness campaigns to prevent public resistance.

Building on this premise, pricing reforms must be designed to be socially and politically viable. Such reform must be founded on the principle of equity and should distinguish between essential use and excess consumption,⁶³ thus ensuring that a subsidy adjustment

⁶² Osamah Alsayegh et al., 'Distortionary Effects of Kuwait's Cheap Electricity and the Case for a Just Reform', *Baker Institute*, 29 January 2025. Available at: <https://www.bakerinstitute.org/research/distortionary-effects-kuwait's-cheap-electricity-and-case-just-reform> (accessed 21 October 2025).

⁶³ For example, subsidising only a base level of energy consumption, benchmarked against sustainable averages, while charging market rates for excess use.

does not compromise homeowners' access to essential services such as adequate cooling for thermal comfort, lighting, and potable water. This would require parallel investment in practical solutions, such as energy-efficient buildings and appliances, and policies that promote behavioural change.

For instance, Kuwait's building stock was developed under the assumption of low-cost energy. Future building codes should promote energy-efficient materials and designs adapted to Kuwait's climatic conditions and urban form. The MEWRE has a long-established building code that can serve as a strong policy template for reducing energy demand.⁶⁴ Such a model could be paired with incentives for renewable technology adoption, including subsidised rooftop solar installations, which could help reduce long-term government expenditure.

Public engagement is also essential. Educational campaigns can help shift behaviour by promoting the use of smart meters (only recently implemented and still with limited reach⁶⁵), enforcing appliance labelling, and raising awareness of consumption levels. At present, the dominant absence of metering systems limits both user understanding and policy effectiveness.

In summary, while investment in renewable energy and alternative fuels is increasing, there is insufficient attention on demand-side reduction and long-term systemic reform. A shift in focus is needed – from subsidising energy prices to incentivising sustainable behaviours. Current net-zero efforts remain concentrated in the oil and electric vehicle sectors, while energy efficiency in buildings and everyday consumption continues to be overlooked.

Housing

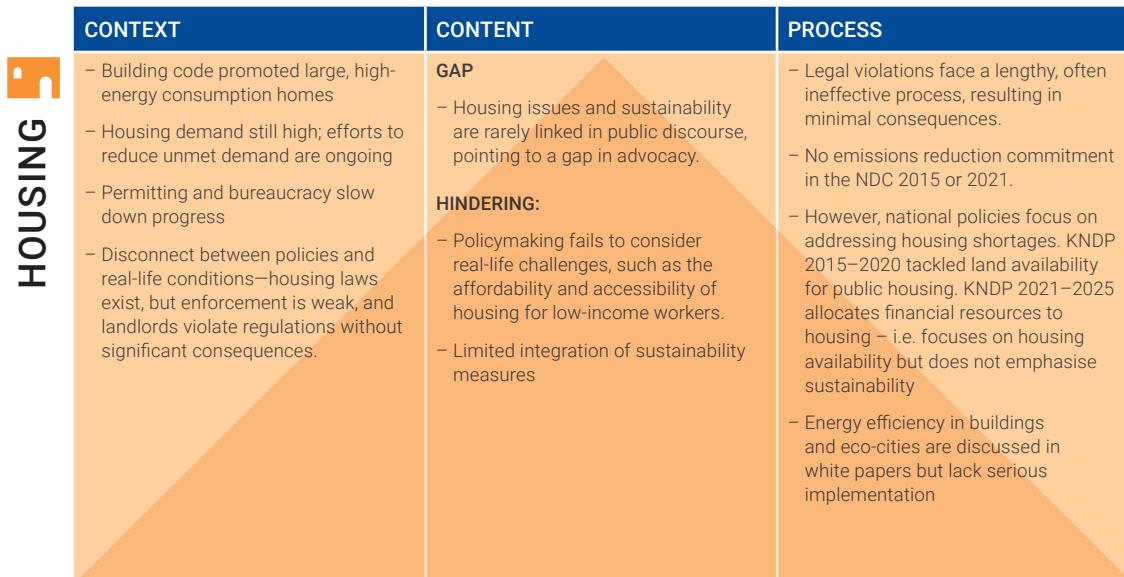
Kuwait's current housing strategy prioritises provision over sustainability. Planned developments in Al-Khairan, Nawaf Al-Ahmad, and Al-Sabriya are expected to deliver approximately 170,000 residential units across a range of typologies, though no deadline has been announced.⁶⁶ However, the urgent demand for housing continues to drive decision-making, often at the expense of more sustainable and integrated policy approaches. Figure 4 shows the political and policy context shaping the country's housing sector transition.

⁶⁴ Mazin Kellow, 'Kuwait's Approach to Mandatory Energy-Conservation Standards for Buildings', *Energy* 14, no. 8 (1989): 491–502. Available at: [https://doi.org/10.1016/0360-5442\(89\)90115-1](https://doi.org/10.1016/0360-5442(89)90115-1) (accessed 21 October 2025).

⁶⁵ Jonathan Spencer Jones, '500,000 Smart Meters for Kuwait's Phase 2 Rollout', *Smart Energy International*, 24 July 2024. Available at: <https://www.smart-energy.com/industry-sectors/smart-meters/500000-smart-meters-for-kuwait-s-phase-2-rollout/> (accessed 21 October 2025).

⁶⁶ 'Kuwait Fast-Tracks Three New Cities in Major Expansion Push', *Times Kuwait*, 29 April 2025. Available at: <https://timeskuwait.com/kuwait-fast-tracks-three-new-cities-in-major-expansion-push/> (accessed 21 October 2025).

Figure 4: Housing Sector Policy Analysis



As seen here, key barriers include construction types and building codes (context), and housing affordability, which often override sustainability challenges rather than addressing them in parallel (content).

Addressing housing challenges in Kuwait requires structural reforms, particularly in land allocation policies. Existing practices tend to support low-density, mono-functional developments. Promoting mixed-use zoning and higher-density living could contribute to more efficient land use and urban sustainability. One potential measure includes the introduction of maximum residential space caps; for example, defining a maximum number of square metres per person, as the average space per capita in Kuwait exceeds that of many neighbouring countries.⁶⁷ In parallel, regulation is needed to prevent the overbuilding of residential plots, which often leads to encroachments onto public space and informal subdivisions. Street-level interventions such as regulating sidewalk parking, common in many urban contexts, could be introduced through licensing or pricing mechanisms.

Diversifying housing typologies is a priority. The market is currently dominated by two primary forms: single-family villas⁶⁸ and high-rise apartment buildings. Introducing more typologies in between, such as townhouses and mid-rise residential blocks, into the building code would support more adaptable, compact, and resource-efficient forms of urban living. Moreover, housing policy must better address the needs of migrant workers, who often reside in overcrowded or substandard accommodation. Providing more dignified

⁶⁷ In Kuwait, villas have a larger average size (approximately 590 m²) compared to those in Qatar (approximately 310 m²). See Sahin Akin et al., ‘Archetype-Based Energy and Material Use Estimation for the Residential Buildings in Arab Gulf Countries’, *Energy and Buildings* 298 (November 2023): 113537. Available at: <https://doi.org/10.1016/j.enbuild.2023.113537> (accessed 21 October 2025).

⁶⁸ Although some single-family homes have been repurposed to create multiple smaller living units – thereby increasing housing availability for those on the waiting list – this has created challenges in areas not planned for higher densities, such as strain on infrastructure and limited parking.

and sustainable housing options would improve living conditions while reducing pressure on infrastructure and urban services. On a broader scale, achieving environmental justice (i.e., fair spatial distribution of green spaces and other services across suburbs) will also increase society's resilience to climate change.⁶⁹

Improving the energy performance of Kuwait's building stock is essential for any effective climate and energy strategy. Retrofitting existing residential and commercial buildings represents a critical opportunity to reduce energy waste and align with national sustainability objectives as outlined in the energy sector analysis. This is especially urgent given the high cooling demand and energy intensity of current construction practices.

The government should also invest in demonstrative green housing projects that incorporate renewable energy technologies and high-performance building designs. Such developments could act as flagship models of sustainable urbanism, moving policy beyond aspirational language toward implementation and measurable impact. Finally, robust quality control is essential to ensure compliance with sustainability goals. This requires systematic building inspections carried out by professionals trained specifically in environmental performance and energy efficiency. Building local institutional capacity in this area will be critical for the long-term success of any policy reform.

Transport

Kuwait's public transport infrastructure remains underdeveloped, relying solely on bus services.⁷⁰ Despite buses being fully air-conditioned by 2016, long-standing underinvestment has led to a significant decline in usage since 1980. Table 3 illustrates the extent of this decline.

Table 3: Bus networks and usage comparison 1980–2016

	1980	2016
Number of routes	40	19
Air-conditioned routes (%)	8.3	100
Daily users (pers.)	212,000	87,349
Population (pers.)	1,369,757	3,925,487
Ridership (%)	16.57	2.23

Source: Kuwait Commute

However, that decline seems to relate quite closely to the bus route conditions linked to car-based development as shown by the Kuwait Commute survey (where 74% of respondents were Kuwaitis).⁷¹ The survey shows that approximately one-third of participants

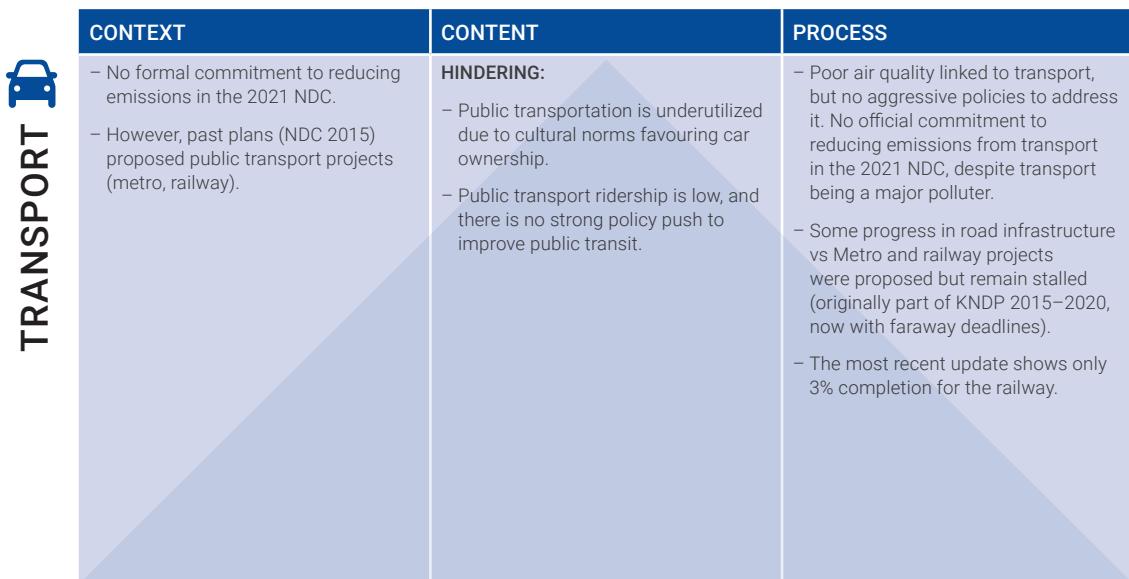
⁶⁹ Ali Mohamed Al-Damkhi et al., 'Integrating Environmental Impact Assessment within Kuwait Master Plans as a Tool for Human and Ecological Risk Control', *Human and Ecological Risk Assessment*, 10 October 2008. Available at: <https://doi.org/10.1080/10807030802387846> (accessed 21 October 2025); Alsahl and Al-Harbi, 'Environmental Justice in Kuwait Metropolitan Area'.

⁷⁰ Rode et al., 'Resource Urbanisms'; Gomes et al., 'Reclaiming Public Space in Kuwait's Residential Neighbourhoods'.

⁷¹ Kuwait Commute Survey Results.

reported spending 2–3 hours in traffic daily, and 17% reported more than 3 hours. The most common complaints included congestion and lack of parking. Yet, public transport remains largely absent from public discourse as a viable alternative. Only 26% of respondents knew of a bus stop near their residence, while 47% said there was none, and 27% were unsure. Despite this, the majority expressed openness to using an improved bus system. Notably, 78% had used public buses abroad, suggesting behavioural change is possible if service quality improves. Figure 5 shows the political and policy framework shaping the country's transport sector transition.

Figure 5: Transport Sector Policy Analysis



As illustrated in Figure 5, key barriers include no formal commitment to emission reduction in public transport, and limited investment in the sector (context and process) and car-centric development (content).

Policy analysis reveals that transport remains the weakest sector in Kuwait's climate commitments, while private vehicles remain widespread, fuel-intensive, and a major source of greenhouse gas emissions. Beyond environmental impacts, Kuwait's car-centric system contributes to public health concerns, including obesity and air pollution.⁷² These inter-related challenges require a coordinated, long-term vision for sustainable mobility, yet current government strategies remain fragmented and unclear.

Infrastructure and urban design are central to addressing these challenges. At present, neither bus stops nor major destinations are accessible by foot, undermining the potential for public transport uptake. Car dependency is deeply embedded in daily life, as illustrated by a survey respondent: 'Even if the bus is there, the car is closer'.⁷³ Although walkability and sustainable transport are beginning to appear in new city plans, these are often limited to isolated enclaves disconnected from the broader urban fabric. In the absence of an integrated, city-wide mobility strategy, such efforts have limited systemic impact. One major barrier to public transport adoption is the low cost of fuel and car ownership, which

⁷² Gomes et al., 'Reclaiming Public Space in Kuwait's Residential Neighbourhoods'.

⁷³ Kuwait Commute, Kuwait Commute Survey Results.

discourages modal shift. However, increasing congestion is beginning to erode the social stigma historically associated with bus use. This presents an opportunity for behaviour change, provided that efficient and affordable alternatives are introduced. Cooperative societies (Co-Ops),⁷⁴ embedded within residential neighbourhoods, could serve as natural hubs within an expanded bus network.

Governance fragmentation further limits progress. The public bus system falls under the Kuwait Investment Authority,⁷⁵ which treats it primarily as a financial asset. It would require government regulation to ensure effective oversight and coordination. Public transportation should be a governmental priority and better integrated with urban planning. Operational inefficiencies are also evident: some routes require passengers to purchase separate passes for different operators, deterring regular use. A unified fare system and better coordination are urgently needed. Moreover, Kuwait could benefit from implementing demand-responsive transport, flexible services adjusted to real-time demand, especially in new developments. However, this model requires structural support, such as dedicated bus lanes. Without such infrastructure, buses remain subject to the same congestion as private vehicles, limiting their attractiveness and reliability.

Policy reforms could also include pricing of currently subsidised road use and fuel, as well as regulations on vehicle ownership. Introducing vehicle emissions standards, analogous to energy efficiency labels for appliances, would help incentivise cleaner and more efficient vehicles. Finally, reducing parking availability in Kuwait City's Central Business District could discourage car use and make space for alternatives such as electric trams. High-frequency bus routes connecting major commercial hubs like The Avenues and 360 Mall would further encourage a shift to public transport. As one survey respondent asked: 'Why don't we have public transport like other cities?'⁷⁶ The public appears ready for change – now policymakers must follow.

Analysing Behaviour and Needs

This section explores the behavioural and institutional dynamics that inhibit sustainability-oriented action and perpetuate unsustainable practices in Kuwait. To guide this analysis, an adapted version of the realist evaluation methodology (see Methodology section) was applied.

Figure 6 presents a comparative analysis of current and proposed scenarios from the perspective of various actors – institutional bodies, advocates/activists, and the media – each of whom could influence behavioural change in Kuwait. The figure functions as a matrix, where practices and outcomes (shown with lighter tones) reflect the existing situation and relationships, while opportunities and measurements (shown in darker tones) represent potential changes and monitoring mechanisms for each actor.

⁷⁴ Kuwaiti public organisations established in each block to serve residents, mainly through local grocery and convenience stores.

⁷⁵ Two of the three bus companies are private.

⁷⁶ Kuwait Commute, Kuwait Commute Survey Results.

Figure 6: Comparative Analysis of Actors' Involvement in Behaviour Change

	INSTITUTIONAL	ADVOCACY/ACTIVISM	MEDIA
EXISTING RELATIONSHIP Practice	<ul style="list-style-type: none"> International agreements & financial incentives as sustainability drivers Lack of economic & political urgency in sustainability efforts – existing policies prioritise economy, security, interests over sustainability Bureaucratic inefficiencies: weak enforcement, lack of accountability, slow policymaking Disconnection between real-life challenges & public discourse Energy subsidies contribute to unsustainable practices Social class & economic hierarchies influence sustainability policies & rights Systemic discrimination against vulnerable populations 	<ul style="list-style-type: none"> Advocacy & NGOs prioritise awareness over policy lobbying Legal constraints & lack of advocacy culture limit activism Community-based initiatives tackle real-life issues (e.g. legal clinics, advocacy groups) Bottom-up approaches (storytelling, workshops, role-playing) engage diverse social groups. Intergenerational discussions & grassroots education are trying to shape social norms 	<ul style="list-style-type: none"> Higher trust in personal networks Social media self-restraint
EXISTING RELATIONSHIP Outcomes	<ul style="list-style-type: none"> Policies overlook real-life challenges Limited integration of sustainability measures Lack of enforcement of the 'polluter pays' principle Focus on aesthetics over systemic change Permitting & bureaucracy slow progress Crisis-driven responses over long-term planning Officials show interest but fail to act Government efforts remain reactive, not proactive 	<ul style="list-style-type: none"> Lack of translation of sustainability into tangible issues Insufficient lobbying on sustainability concerns Community-based initiatives fill policy gaps and support vulnerable groups (labour & environmental issues) Training and bottom-up approaches address cognitive dissonance in employer-employee relationships (e.g. with women). 	<ul style="list-style-type: none"> WhatsApp holds more influence than traditional social media Suppression of critical voices has reduced sustainability discussions on social media.
POTENTIAL MECHANISM Opportunities	<ul style="list-style-type: none"> Avoiding controversial politics may ease policy integration Rethinking energy subsidies for sustainability Need for regulatory adjustments & better incentives Implement & enforce the 'polluter pays' principle with disincentives Government endorsement boosts public trust & engagement Consider policies through the lens of vulnerable populations Ensure open, centralised access & public monitoring of sustainability initiatives 	<ul style="list-style-type: none"> Greater support for advocacy and bottom-up approaches at various levels Intergenerational discussions and grassroots education can help communities redefine social norms and expectations. Development of tools or methods to translate sustainable goals into tangible issues 	<ul style="list-style-type: none"> WhatsApp as a tool for advocacy, communication, and engagement in sustainable change Explore the role and use of other media that focus on different interests and demographics
POTENTIAL MECHANISM Measurement	<ul style="list-style-type: none"> Existence & levels of advocacy Assess economic & political costs/benefits of sustainable interventions vs. inaction Evaluate administrative & resource efficiency (e.g. enforcement workers per process) Measure transparency & accountability Analyse regulatory burden (e.g., overlapping policies & documents) Track adoption & development rates of initiatives & projects 	<ul style="list-style-type: none"> Levels & existence of advocacy Measure sustainable impact of advocacy actions Assess levels of engagement/participation in advocacy (e.g. number of bottom-up sustainable initiatives) Create a 'dictionary' or 'tool' to translate sustainability into tangible issues 	<ul style="list-style-type: none"> Assess transparency & accountability in media and social media platforms

The results of this analysis highlight the critical role of government action in shaping public behaviour. Currently, many policies remain reactive rather than anticipatory and often suffer from weak enforcement. One interviewee noted that this regulatory absence triggers a chain of unsustainable behaviours across sectors. As it stands, Kuwaiti government efforts appear to lag behind those of national businesses – particularly banks and corporations – which are adopting sustainability measures to remain competitive both domestically and internationally. This gap in ambition places Kuwait at a disadvantage when compared to neighbouring Gulf states such as the UAE and Qatar.

Institutional structure is another key constraint. Although the centralised-nature of decision making in Kuwait has its advantage in creating overarching national policy-making possible, it is limited in responding to the local context and its needs. For example, while Kuwait Municipality has its governorate branches, its regulations – which include building codes and waste management – fail to respond to the different needs of particular governorates, missing on opportunity of empowering the branches to become more creative and competitive. This is compounded by a general lack of sustainability awareness at the local level, limited capacity-building efforts, and an absence of incentives or frameworks encouraging municipal innovation. Hence, recognising that many sustainable initiatives need to be designed and implemented at the local level, it is important to empower locally led adaptation and sustainability actions.

While the proposals identified in Figure 6 are broad, they can be translated into tangible government policy actions. For example, regulatory reforms could mean introducing efficiency standards for building materials, appliances, and vehicles – as already applied in other contexts – which could significantly raise public awareness of the environmental impact of consumer choices.

In contrast, Kuwait's civil society is well-organised, with strong social capital and experience in public advocacy. It plays a vital role in raising awareness, promoting engagement, and supporting vulnerable groups and uses digital platforms, particularly WhatsApp to disseminate its efforts. Academic institutions also contribute to this ecosystem. These civic actors represent an important resource for building a bottom-up approach to behavioural change. Compared to top-down policies, which often lack public traction, grassroots engagement has the potential to make sustainability initiatives more robust and inclusive.

Yet, a persistent challenge lies in translating civil society proposals into government policy. Bridging the divide between grassroots actors and decision-makers is inherently political. Typically, change requires either internal incentives or external pressure. The latter often depends on forming coalitions with enough influence to capture policymakers' attention and align sustainability goals with national agendas or public relations priorities.

During the project workshop, participants were asked who should lead Kuwait's sustainability transition. The most common response was 'everyone.' The government was widely viewed as the primary actor responsible for setting the agenda and providing incentives. Local institutions and the private sector were also recognised as important, while civil society ranked lower – despite its demonstrable capacity. Interestingly, several participants identified municipality branches as potentially strong leaders, contingent on being equipped with the necessary tools. As one participant remarked: 'Who should lead and who is actually doing it are different questions in Kuwait.'

This section, mainly summarised in Figure 6, illustrates the potential sustainable roles of Kuwait's government and civil society in influencing behaviour change, supported by measurement mechanisms for close monitoring. It also highlights the importance of social and other media in shaping behaviour and in promoting sustainable initiatives in Kuwait.

Creation of a Policy-Practice Mediation Tool

This final section explores concepts for designing practical mediation tools – digital or non-digital, to support decision-making, incentivise behavioural change or foster dialogue between citizens and the state. Tools can improve participation and behaviour change while supported by more fundamental and structured reforms of policy and governance.

The aim of this section is to illustrate a variety of ideas for tools that can enable communication and encourage behavioural change, while being piloted and refined in collaboration with local communities, businesses, and institutions. With this gap in mind, the study applied a simplified participatory design analysis (see Methods section) to engage Kuwaiti stakeholders and university students in co-designing concepts for mediation tools that better align behaviour with sustainable policies. Using whiteboards, participants were invited to suggest features for such a tool and to classify them along two axes: how open or closed, and how informative or engaging the tool should be.

Figure 7 presents a summary of the responses. The results reveal a range of proposed tools, including digital platforms that interface with government institutions, integrate social media engagement, track resource consumption, or provide behavioural incentives such as rewards. This variety demonstrates not only the creative potential of stakeholders and the diversity of mediums, but also the need for tools that are both functional and socially engaging. Examining the suggested ideas highlights the importance of understanding the context through place-based and culturally appropriate concepts, for example, the use of social media by younger generations (students) or the national video campaigns proposed by stakeholders as part of the government's role.

Figure 7: Workshop Participants and Students' Suggested Tools

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INFORMATIVE AND PROFESSIONAL

ENGAGING AND FUN

<p>⚡ Energy:</p> <ul style="list-style-type: none"> – Live electricity and water consumption data – Allowing people to impose regulations – Sustainability guideline for homeowners – Energy and water consumption/savings tracker for neighbourhoods and commercial buildings <p>🌿 General:</p> <ul style="list-style-type: none"> – National video campaigns promoting sustainability driven by the Government <p>🚗 Transport:</p> <ul style="list-style-type: none"> – Commuter bus app 'with more rewards!' 	<p>🚗 Transport:</p> <ul style="list-style-type: none"> – Community led design of shared public spaces – Walking tours or sustainable buildings and spaces <p>🌿 General:</p> <ul style="list-style-type: none"> – Social environmental campaigns for teens and young adults – Awareness programs in schools using champions video series on what it means to be sustainable in Kuwait (localised knowledge) – Localised community Charrette for making their neighbourhood more sustainable – Local neighbourhood events and initiatives
<p>⚡ Energy:</p> <ul style="list-style-type: none"> – Sending online electricity and water bills via MEW app along with information about the household's position relative to neighbourhood averages <p>🏢 Housing:</p> <ul style="list-style-type: none"> – Technical seminars and training on green building standards and building codes – Policy and business forums 	<p>🌿 General:</p> <ul style="list-style-type: none"> – To raise awareness. Collaborate with Seenjeem website V-thru and KFH walking 1km or carpooling to receive rewards – Give people seeds (Froyo, Coop, Abdulrahman Aljassem)
<p>⚡ Energy:</p> <ul style="list-style-type: none"> – Ask older people in each household to turn the lights off <p>🚗 Transport:</p> <ul style="list-style-type: none"> – Parking in one location for carpooling <p>🌿 General:</p> <ul style="list-style-type: none"> – Use influential blogs, Instagram and TikTok (e.g. 248am, inspirededibles, project lifestyle, and visit Kuwait) – Create exclusive pop-up incentivised by sustainability practices (e.g. recycling x number of bottles) 	<p>Workshop participants</p> <p>Student's engagement</p>

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These sets of ideas, which extend beyond energy, housing, and transport into more flexible approaches that can be adapted to other sectors (see 'General' in Figure 7), serve not only as channels for disseminating information but also as mechanisms for gathering public feedback, building trust, and incentivising sustainable behaviour. Whether developed as standalone apps or embedded into existing civic platforms, these tools should aim to support a systemic shift toward more inclusive and adaptive urban governance.⁷⁷

These types of tools, along with higher levels of community engagement, can be very helpful in facilitating bottom-up initiatives, promoting behaviour change, and increasing the uptake of green solutions, even though the root causes of challenges in energy, urban planning and housing, and transport require active involvement and commitment from policymakers, institutional actors, and corporate leaders.

Although BADER,⁷⁸ Kuwait's existing Green Urban Development Initiative, shows some progress toward sustainable urban transformations through government-private sector collaboration, it still lacks the participatory mechanisms of international models. For example, *Décider pour Paris*,⁷⁹ a Parisian participatory budgeting tool, enables residents, regardless of nationality, to propose and vote on projects, integrating public deliberation into policy-making. In contrast, BADER restricts civic involvement to state-reviewed submissions, limiting the collective ownership and emotional investment in place – elements crucial to fostering sustainable urban culture.

The results of this exercise highlight the complexity and potential of sharing goals, ideas, and stories in creating tools that foster collective ownership and promote a more sustainable culture, and help build a more resilient Kuwait.⁸⁰

Conclusion and Impact

This project highlights the limitations of Kuwait's current sustainability policies and monitoring mechanisms, alongside a general lack of public awareness around environmental issues. It identifies the structural and behavioural factors shaping the country's sustainability landscape, particularly across energy, housing, and transport. It offers proposals for both policy reform and behaviour change – grounded in coordinated government action, civic mobilisation, and media engagement. This includes potential mediation tools to bridge the gap between citizens and institutions, suggesting methods and providing actionable pathways for enhancing public engagement and aligning behaviours with sustainability goals.

⁷⁷ Note: another key output of this project is the development of a participatory tool.

⁷⁸ 'BADER', 2025. Available at: <https://gudi.gov.kw/> (accessed 21 October 2025).

⁷⁹ Ville de Paris, 'Décider Pour Paris'.

⁸⁰ See examples of current and past sustainable initiatives in Kuwait in Alexandra Gomes et al., 'Shaping an Eco-Kuwait: Exploring Sustainability Initiatives to Drive Change', *LSE Middle East Centre Blog*, 8 July 2025. Available at: <https://blogs.lse.ac.uk/mec/2025/07/08/shaping-an-eco-kuwait-key-sustainable-initiatives/> (accessed 21 October 2025).

The findings show that the lack of sustainable policies and investments burden the government, society, and businesses alike, highlighting the need for a systemic approach. The analysis underscores urgent needs: subsidy reform, effective incentives, stronger monitoring systems, and clear, measurable sustainability targets. Crucially, for either policy or behaviour to shift, viable and just alternatives must be made available. Institutional capacity must also be strengthened, and existing housing and development models revisited to ensure alignment with climate and equity goals. Achieving a modal shift in transport will require a balance between comfort, sufficiency, and system-wide efficiency. The study also highlights the pivotal role of civil society in catalysing change, as meaningful governmental responses tend to occur only when public pressure is applied through broad coalitions or influential actors.

Finally, the demonstrated interdependence of the housing, transport, and energy sectors further reinforces the need for a systems-based approach to sustainability policy. This is essential, as sustainable progress can only be accelerated when it is combined with the enabling roles of institutions, advocacy, and the media.

Cross-cutting approaches could include centralised coordination, equitable subsidy and pricing reform, building codes and standards, behavioural engagement and awareness, demonstration and pilot projects, public access and transparency, and support for vulnerable populations. This study emphasises the pivotal role of data and communication in enabling any of these approaches. Without reliable data, stakeholders cannot fully understand issues, gather evidence, make predictions, invest wisely, or establish regulations and policies that drive sustainability. Likewise, without effective communication, it becomes difficult to translate concerns into actionable policies or to foster collaboration between civil society and institutions.

In summary, this research shows that aligning governance, infrastructure, people, and resources is vital to Kuwait's sustainable future. It advances academic enquiry, raises environmental awareness, and promotes social and spatial equity. Through its tools and policy recommendations, the study aims to drive lasting change toward a more just and sustainable Kuwait.

Research Team

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