



Emerging Trends in Infrastructure

Perspectives from Kuwait
February 2025





Foreword

Enabling transitions

All at one time, we want to change our energy mix, our climate, our economies, our global trade patterns, our cities, our technology and our social equity. And we plan to do it all against a backdrop of a non-stationary environment, divisive geopolitical rhetoric and deep economic uncertainty. It is a mammoth task.

Humanity's success or failure will largely rest on the shoulders of our infrastructure. Infrastructure will be central to the energy transition and achieving our climate adaptation goals. It catalyzes economic growth and facilitates trade. It underpins urban renewal, lays the foundations for digital transformation and — when done well — can help embed social equity.

To achieve this we need to change (and improve) the way we plan, fund, develop and operate our infrastructure. It will require collaboration, new funding mechanisms, innovative regulatory regimes, new construction techniques, broader skill sets and — more than anything — a high degree of flexibility and creativity. Business as usual is not an option. Countries, territories, cities and corporates have to reinvent themselves as well as up-skill and innovate to meet the emerging changes and potential opportunities. Enabling the world's transitions, therefore, must start with a transition in the infrastructure sector.

In this edition of Emerging Trends in Infrastructure, KPMG infrastructure professionals share their view of the eight trends that — in our opinion — have the potential to shape the world of infrastructure in the short-term future. Where there was a choice to be optimistic or pessimistic, we chose the former; we believe humanity can pull together to solve the urgent challenges the world faces.

As always, we hope that this edition of Emerging Trends in Infrastructure inspires readers to think differently about the challenges facing humanity and the opportunities and solutions that could be created by the infrastructure sector to achieve our collective goals.

Contents

Trend 1

A broader focus for the Just Transition

10

Trend 2

A turn in geopolitics

12

Trend 3

The rise of philanthropic capital

20

Trend 4

Towards the Infrastructure Mesh

22

Trend 5

Contracting for technology

28

Trend 6

Driving the energy transition

30

Trend 7

Reforming the regulatory remit

36

Trend 8

The next frontier

42

Featured interviews



Nayef AlHaddad, Manager of Research and Strategic Planning Dept., Kuwait Authority for Partnership Projects, gives his insight on PPPs in Kuwait's infrastructure sector

14



Ibrahim Sattout, Partner, ASAR — Al Ruwayeh & Partners, addresses the state of Kuwait's infrastructure sector's regulatory landscape

24



Yasmeen AlKandari, Co-Founder and CEO, SEEDS Co., talks about the race towards sustainability in Kuwait's infrastructure sector

32



Jassim Al Awadhi, Founder & Initiative Director, Kuwait Commute, talks about the future of public transport in Kuwait

38

Disclaimer: The facts and figures mentioned in the report are true to the time this report was being drafted (late 2024).

Beyond blueprints

Imran Shaik, Director — Deal Advisory and Head of Government and Infrastructure Advisory, KPMG Kuwait, gives an overview of Kuwait's infrastructure sector and the emerging trends

As I summarize *Emerging Trends in Infrastructure: Perspectives from Kuwait*, the words that come to my mind are 'progress' and 'opportunities'. 2024 has been a year of forward thinking and growth for the sector globally, across the GCC region, and in Kuwait.

Moving into 2025, we predict similar trends with a keen focus on the latest technologies, transparency between the market players and the regulators, the rise of philanthropic capital, and equitable sustainability.

The sustainability focus

COP29 concluded in Azerbaijan this year with climate finance as the central theme and a renewed

focus on industrial decarbonization, demand-led decarbonization, energy transition, and revised climate policies.

We believe these findings from COP29 can impact the sector positively as they offer a scope for countries to transition towards cleaner energy in a just and equitable way.

Our report extensively touches on sustainability as a key parameter, as two out of eight trends talk about sustainability and how infrastructure players can push towards it.

Kuwait outlook

Our report shows that 2024 has paved the way for multiple

enterprising projects that may well define the sector in the coming years.

In April 2024, the Kuwait government approved 36 infrastructure projects in its 2024–2025 budget for a combined value of US\$1.4 billion.¹ The country also revealed multiple ambitious projects such as the Medical City (March 2024), Phase 1 of the Kuwait National Railroad Project (April 2024), the South Al-Jahra Labor City (October 2024), and the Redevelopment of Mubarak Port (September 2024).

As we draft this report, Kuwait has nearly 300 ongoing projects, including those in the bid and execution phase, with a net project value of around US\$115 billion.

Furthermore, BMI, in their quarterly



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Imran has advised public sector and private sector clients on a broad range of assignments, ranging from infrastructure advisory, transaction support including valuations and due diligence, strategy development, feasibility studies and business plans. He has experience across a host of sectors, with a focus on infrastructure, real estate, education, healthcare and F&B.

forecast, reported that the construction industry in Kuwait is expected to achieve robust growth of 3.9% in 2024 and 3.4% in 2025, reflecting the return of investment in the vital oil and gas industry as well as progress in large-scale transport and energy infrastructure projects. The residential/non-residential sector will continue to be the mainstay of the construction sector.

The construction sector also has the largest share of the ongoing infrastructure projects in Kuwait, taking 48% of the overall projects with a combined net value of about US\$56 billion.

The sector was also one of the major contributors to the direct investment for Kuwait, taking nearly a 16% share of the total investments made in the country.

The sector ranked third only after information technology (33%) and oil and gas (25%) which witnessed more investments in Kuwait. Having said this, Sinohydro Corporation's direct investment of US\$166 million in the sector was the largest in Kuwait last year.

Apart from the construction sector, we believe the transport sector will be a major area of focus for the government, as it seeks to implement the Kuwait Vision 2035 initiative that aims to transform Kuwait from a petrostate to a logistics and trade hub by 2035.

The government has a clear agenda for developing the transport sector, as 36% of the total project value

currently under construction is concentrated in the transport space.

Future outlook

While the geopolitical situation, combined with the Organization of the Petroleum Exporting Countries (OPEC) cuts (extended till 2026), will play a vital role in the overall infrastructure development, we are hopeful that it will not impact the promises made at COP29 and businesses, regulators, and the government will strive for a win-win partnership that focuses on leveraging technology, innovation, and alternate capital as well as broader policy alignments to drive growth.

We also believe that technology will play a key role in 2025. Kuwait has already partnered with key global technology players for the functional transformation of the governments, and we hope this positive momentum will spread to the overall infrastructure sector.

To conclude, this report is the outcome of a collaboration between some of the top minds from Kuwait and KPMG global teams who used their knowledge, experience and observations on the ground to predict the trends that are expected to reshape the infrastructure sector's future.

We were also fortunate enough to have qualitative discussions with notable individuals from various spectrums of Kuwait's infrastructure sector (see Contents), who provided us with deep insights into how the sector is moving in the country, their contributions towards it, and the

measures that can be taken to make Kuwait a truly remarkable place for the future. I am sincerely thankful to each one of them.

I hope that you will enjoy reading this report as much as our team and I did putting it together.

If you have any questions, feedback, or topics you would like to discuss further, I look forward to hearing them.

Imran Shaik

Director — Deal Advisory and Head of Government and Infrastructure Advisory, KPMG Kuwait

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1. [Zawya, Kuwait's 2024-2025 budget includes \\$1.4bn projects](#)



The global trends



Trend 1

A broader focus for the Just Transition

Change creates opportunity. And, as the world transitions towards a clean energy future, society faces a historic opportunity to ensure that the transition is just, fair and equitable. It is an opportunity we cannot afford to squander. The world would be considerably worse-off if we do.

To date, much of the conversation around the 'just transition' has been focused on jobs. Yet solving the jobs part of the equation may be the easy task. Other industries have gone through similar disruption in the past; governments have a good idea of what it takes to re-skill people and diversify economies. Besides, it now seems clear that the transition away from fossil fuel usage will take some time.¹

The bigger challenge is likely to be in ensuring that investment, development and sustainability outcomes are spread equitably between developed and emerging markets.

The reality is that massive investment will need to be placed into scaling up renewables (as KPMG international's recent report, [Turning the tide in scaling renewables](#) finds, the gap between the investment needed and capital deployed is wide),² improving climate adaptation in high-risk geographies, creating supportive regulatory regimes, developing new economy skills and capabilities, and capacity building, for example. And the developed world is currently capturing the lion's share of those inflows.

The emerging markets are also seeing massive increases in clean energy investment and capacity. It is likely that future investments into traditional energy sources will likely be channeled to the emerging markets where regulations are less clear and where some countries still have not defined their decarbonization

pathways or set net zero targets. Not only could this create an imbalance in how the benefits of the energy transition are spread around the world, it also creates significant risk for Development Finance Institutions (DFIs) and private investors seeking to fund projects in hard to abate sectors in these countries (steel and cement in particular).

As a result, attempts to develop cleaner, more sustainable infrastructure in these markets are being marginalized.

In order to meet the UN SDGs, the world should be ensuring economic development and transition to low carbon happens together rather than at the cost of each other. This would require greater focus on capability development, investment in R&D, promoting alternate industries and creating new pillars of economic growth — decarbonization, energy efficiency, smart infrastructure.

The launch of the Just Energy Transition Partnership (JETP) in Indonesia, is a landmark, long term partnership designed to create an ambitious and just power sector transition in Indonesia. The JETP will focus not only on delivering strong emissions reductions, but also on driving sustainable development and economic growth, while protecting the livelihoods of communities and workers in affected sectors.³

This year will be critical to bridge the divide between the developed markets and emerging nations and build trust by ensuring pilot projects are successfully implemented and are the showcase for future projects.

The 'loss & damage fund' formalized at COP28 is a good start,⁴ but what the world should be ensuring is multi-party commitment to a 'recover & restore' approach that drives

constructive interventions with a view to accelerate sustainable social change.

The infrastructure sector is likely to play a key role. Infrastructure investors will have an opportunity to shape the capital flows. Owners and operators can influence the value expectations. Developers can help ensure supply chains and approaches are diversified and sustainable. Regulators will make sure consumer rights and expectations are being met.

Over the coming year, some governments and international organizations are expected to start broadening their definition of 'just transition' and, with it, encourage greater collaboration between nations, sectors and citizens.

Multilateral organizations and collaborative alliances — like KPMG's membership with the WWF and UNDP as part of the Alliance for a Just Energy Transition⁵ — will be critical to driving this change and achieving a balanced outcome. And infrastructure investors, developers and operators are expected to start to pay much more attention to the emerging markets which, in turn, should help put just transition into practice.

1. KPMG in Singapore, Navigating the post-COP28 landscape for global decarbonisation, 2023
2. KPMG international, Turning the tide in scaling renewables, 2023
3. US Embassy & Consulates in Indonesia, United States supports the launch of the Just Energy Transition Partnership (JETP) in Indonesia, 2023
4. WWF, The agreement on the Loss and Damage Fund marks a positive start, now countries must deliver the finance to the vulnerable communities needs, 2023
5. UNDP, The Alliance for a Just Energy Transformation, 2023



Trend 2

A turn in geopolitics

The world is in a state of geopolitical and social upheaval. Facing a range of pernicious challenges — economic, climate, trade, inequality and technological, to name a few — that are impacting people’s day-to-day lives and influencing global political agendas.

As the climate emergency becomes more acute,¹ schisms between various regions of the world deepen, and economic uncertainties and debt challenges start to bite, there may be further fracturing of global consensus and an increase in conflict as countries and territories vie over scarce resources, capital and power. With collaboration, partnership and trust in short supply and geo-political and economic headwinds dominating the headlines, the actual and perceived risks to businesses have grown multi-fold.

More than 40 percent of the world’s population is set to elect new governments this year (including India, Indonesia, South Africa and the US), so expect the rhetoric and uncertainty to rise.

However, there is optimism that the real impacts of the climate emergency and the need for a just transition could inspire some countries, institutions and leaders to put the global good ahead of their national interests and come together to forge new alliances focused on building consensus and forming the foundations for collaboration.

This would be good news. KPMG believes that all stakeholders should come together and drive consensus on critical developmental and climate agendas.

A win-win partnership needs to evolve focused on leveraging technology, innovative and alternate capital as well as broader policy alignment to drive growth. Should the world

veer towards less partnership and collaboration, the impact on the infrastructure sector will be significant.

Infrastructure investors and owners may struggle to square away the uncertainty and regulatory complexity, thereby slowing dealmaking and reducing investment right at a time when the world needs it most.

The cost of projects could increase as construction companies and developers price new risks into their bids. Projects in the developing markets that need it the most may get stalled waiting for policy certainty, government direction and flow of international capital.

This year, some infrastructure players and investors are expected to focus on finding ways to measure, manage and mitigate the risk of uncertainty as a hedge against a shift away from global collaboration.

Additionally, it is hoped that to see leaders and policymakers start to focus on collaboration over competition, global good over national protectionism, and action over rhetoric.

KPMG is cautiously optimistic about the triumph of economics and good policies over protectionism and divisive short-term strategies. In more ways than one, what the world does in 2025 may define the trajectory for the rest of the decade and set the stage for our ability to meet (or fall woefully short of) our net zero and SDG goals.

1. WWF, The Climate Crisis, 2023

By the people

Nayef AlHaddad, Manager of Research and Strategic Planning Dept., Kuwait Authority for Partnership Projects (KAPP), gives his insight on public-private partnerships (PPPs) in Kuwait's infrastructure sector

Give us your perspectives on the private sector's involvement in Kuwait's infrastructure development.

I believe that the local private sector is able to bridge the needs of the public sector and the requirements of international investors.

We have observed that the international private sector has certain specific needs arising from their commitments to global standards, international regulations and their corporate policies. The local private sector may not be subject to many of these obligations as they are yet to be enforced locally.

Additionally, some organizations prefer projects with reduced market risk on the private sector. It has to be understood that government offtake has certain liabilities and risks associated with it, e.g., termination

due to state interest, incumbency in project implementation/operation, etc.

Therefore, it is important for both parties, i.e., the private and the public sector, to assess the risks associated with the projects, evaluate them financially and identify who is best placed to address these based on their respective competencies at the outset.

Which sub-sectors in infrastructure do you believe have the greatest potential for attracting the private sector? Also, talk to us about the international private sector in Kuwait.

The specific sub-sectors are going to be an amalgam of the state's needs and the private sector's appetite.

Currently, both locally and internationally, mega utility projects are eliciting interest from developers due to the exclusive nature of the

contracts whereby market risks are negated and the developers are able to rely on the state's commitment.

This contrasts with projects wherein the cash flow is tied with end-user payments and associated with demand risk.

KAPP also promotes and procures such projects, and the key is to achieve an internal rate of return which is attractive to lenders and developers.

We are also exploring some pilot projects in the social infrastructure sector which may bring some interesting diversity to the investment opportunities for developers.

International private developers continue to be important stakeholders for the success of large and complex infrastructure projects in Kuwait as they bring modern technologies,



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He's currently the Manger of Research and Strategic Planning at KAPP, and has managed multiple local PPP projects and power trading deals between GCC countries. He is also the Chairman of the MENA chapter for the World Association of PPP Units & Professionals (WAPPP).

operating efficiencies and are generally more experienced in undertaking PPPs.

What are your views on the maturity of local players and what can be done to help enhance that?

We are working to diversify our project portfolio to create opportunities whereby local private sector developers who may have limited exposure to PPPs can also participate.

This will lead to growth in the maturity of the Kuwait market in terms of understanding PPP practices.

Kuwait can also learn from the examples of successful policies in the region to ensure that bidders on a project contribute to the local economy.

In addition, some local developers are only interested in specific sectors. Offering projects across sectors will help improve participation from other developers.

While KAPP generally does not insist that international developers partner with local developers (like in the EPC contracts), some of them do so out of their own volition.

Ultimately, it has to be a good combination of opportunities and policies that drives the economic interest and supports it.

When it comes to project finance, local developers face constraints in obtaining financing facilities for large projects due to single obligor limits applicable to local banks in Kuwait.

Perhaps one solution for this might be treating project finance separately from corporate finance, which certainly requires some thought and support from the banking regulator.

Secondly, most of the international developers that come to Kuwait benefit from the support of their state-owned banks or other similar financing entities, which Kuwait does not have, unfortunately.

Establishing such an institution will require considered decision from the appropriate authorities as this will go a long way in supporting the growth of infrastructure projects in Kuwait.

Do you think that the competition and the scale of development in the wider region is affecting how attracted international developers are to Kuwait?

Many projects were either cancelled or put on hold in the past, which led to a loss of credibility among developers for PPP projects in Kuwait.

There has also been a recurrent turnover of decision makers in key institutions, leading to frequent shifts in mindset regarding the project terms, among other things.

While there is considerable project activity in the wider region, Kuwait has a strong pipeline of attractive projects.

It is important to deliver success stories in the form of timely project completion in a satisfactory manner to restore interest and confidence from developers.

Tell us your thoughts about Environment, Social and Governance (ESG) in infrastructure.

In the absence of regulatory requirements for the adoption of ESG, it is left to the discretion of the respective entities to implement international standards on a voluntary basis.

The financial sector in Kuwait has taken a lead on this front with regulators coming up with disclosure requirements for ESG and banks moving towards ESG compliance to meet their international commitments.

The challenge is for the public sector to adopt and implement ESG requirements in a manner that gains acceptance from the private sector participants, as most of these requirements were not considered previously in the procurement of government projects.

Absence of regulatory standards for ESG may lead to inconsistent approaches to implementation, leading to projects that are non-compliant with international ESG standards.

This may pose a hurdle for international developers and financiers.

To avoid such a scenario and the time and costs associated with rework, it is imperative to have clarity on the relevant ESG regulations and addressing them at the outset of the projects' planning stage itself.

How should the infrastructure sector go about ESG adoption?

ESG adoption would need to be gradual and matching the infrastructure asset in question.

For example, it may not be practical to cease thermal power generation, but this can be balanced by introducing renewable energy elements.

Energy is but one aspect and there are several other inputs that go into the projects. For example, on the construction side, the design, energy efficiency, and other such aspects will be considered when it comes to the overall ESG score.

When the concept is developed and it goes into the detailed design for the environmental (E) aspects to be embedded, then there is a higher score on the E.

Social aspect is the benefit that is provided to the society, which would depend on the nature of the project, and this has to be made more focused and explicit.

As for governance, it is the aspect that is based on how the project is being managed, i.e., the interaction between the public, private and the society at large.

Having said that, the E aspect is the one I believe is more important as it is part of the planning.

I met some of the export credit agencies and some of the governmental banks who, unfortunately, had contradictory stances on projects depending on whether they were financing them or

not, and how they will determine to take a position on them depends on their interest and the interests of their benefactors.

There is a huge need for environmental awareness, but we need to go back to what the market is willing to accept, what the state needs and how we can successfully match them.

When it comes to infrastructure projects, it is important that the technological aspects are embedded at the outset of the projects. How are you approaching this?

I feel that the mindset when dealing with contractors or solution providers should be set to offer something that is appropriate and available to both public and government agencies.

While we are always asking for the latest technologies, some public agencies still insist on proven technologies.

They want something that has been in operation and can provide guaranteed delivery of services. They don't want to rely on technology that is new as the state ends up taking all the risk of delivery to its consumers.

This results in a mismatch as manufacturers want to bring latest technologies into the market to achieve efficiencies and create a success story to use as a reference for the next project.

But state agencies cannot afford to let their facilities be used as a pilot project for such purposes.

Similarly, the public agencies want something that's convenient and safe, the lenders want something that's less risky, and the developers want something that's cost-effective.

KAPP's role is of a matchmaker, finding an appropriate balance between latest technologies, proven performance, and ease of financing and implementation.

When it comes to the development of infrastructure in Kuwait, what are some of the challenges you are seeing?

Currently, the biggest challenge is regaining the trust and interest of the lenders and developers.

At the same time, it is also challenging to find the right time to tap into an opportunity, considering the competition is with other countries in the region.

In addition, there is also a chance that the project you have been awarded or currently participating in may be cancelled or retendered in another format.

This is always running in the back of your mind. As such, we have a lot of legal challenges regarding the cycle of the tender process.

But then, if it is done with transparency and in an effective manner, i.e., everyone has done their due diligence, there is no corruption in the process, fair access and competition and the best bid has won, among others, then everybody will be comfortable about it. Accomplishing this is one of the biggest challenges as it requires a lot of work.

Some people look for an easy way out but don't anticipate the associated risks.

The second challenge is matching the local and international partners. The problem is the local private sector finds it difficult to build consistent relationships with the international ones.

Unfortunately, some of the international entities don't perceive real added value or other major contributions from local partners and are hesitant to tie up.

Therefore, the local private sector has to build their reputation and experience, and ensure they bring genuine added value to the partnership.

Do you think that the turnaround time for projects is something that can be addressed?

We are addressing this right now. This has been a challenge since 2017/18, wherein one major project got cancelled while another one (Umm Al Hayman) made it through against everyone's expectations.

And to be honest, sometimes, getting the agreement signed is a success in itself.

Right now, the tender cycle in Kuwait is about 32–34 months, compared to some countries in Europe that average around 48–60 months due to the local and federal rules, regulations and processes they have over there.

I feel our tender cycle could be optimized better and state agencies could be better aligned

in understanding the strategic importance of these projects, their contribution to the local economy, and the reputation risk for the state.

A well-considered feasibility study takes at least 4–6 months, depending on the complexity of the project, and recruiting an advisor alone takes about 3–4 months. So, overall, it takes about an average of 8–9 months just to establish a project proposal.

We are working diligently on improving and reducing the project overall cycle through the introduction of changes to the current PPP law.

What are some of the projects you are working on? Is there any other feedback that you would like to give with regards to the Kuwait market?

One important project is the high-speed fiber broadband network project. The state is in dire need of improving its IT and telecom infrastructure.

If I am not wrong, only about a third of Kuwait homes have installed optical fiber cables. We are also establishing a joint stock SPC company to fully manage the project and fulfil the state's needs over the next 50 years.

At the same time, we are exploring options with many public agencies in terms of how we can utilize or even establish, say, general solutions for all projects that emphasize digital transformation.

We are also working to enable the social infrastructure projects. These are not necessarily large projects, but also medium- and small-scale projects that are of some value to the

local community and something that would involve the small and medium enterprises as well. We explored that there are a lot of opportunities out there.

There is a very good pipeline of projects coming up. Although I don't have the liberty to announce them now, I can say that we are regaining the trust and the support of the government in tendering these projects and the current pipeline is highly important.

And while we are not doing it right now, we want to push the local financiers to take part of the responsibility and be more accountable.

As for those who are conducting risk assessments at local financial institutions, I would recommend reevaluating their position on these opportunities in light of the guarantees and incentives provided by the state.

We are seeing a positive trend in the market as we are hearing positive things from the bankers and the developers. So, we are also very confident of the current outlook.

You mentioned the challenges organizations face with the government offices when it comes to things such as getting a feasibility study up and running. How can such processes be sped up?

Currently, we don't have a 5-, 7-, or a 10-year plan with the pipeline of projects identified.

If you know what projects are coming in the next, say 5 years, and are looking to file tenders for them in the

next 3–4 years, then it will help if all the public agencies brought them to us at the earliest. We will start working accordingly.

Unfortunately, that rarely happens. I have seen instances where some agencies bring in projects they are looking to release a PPP project tender for in the next three to four months.

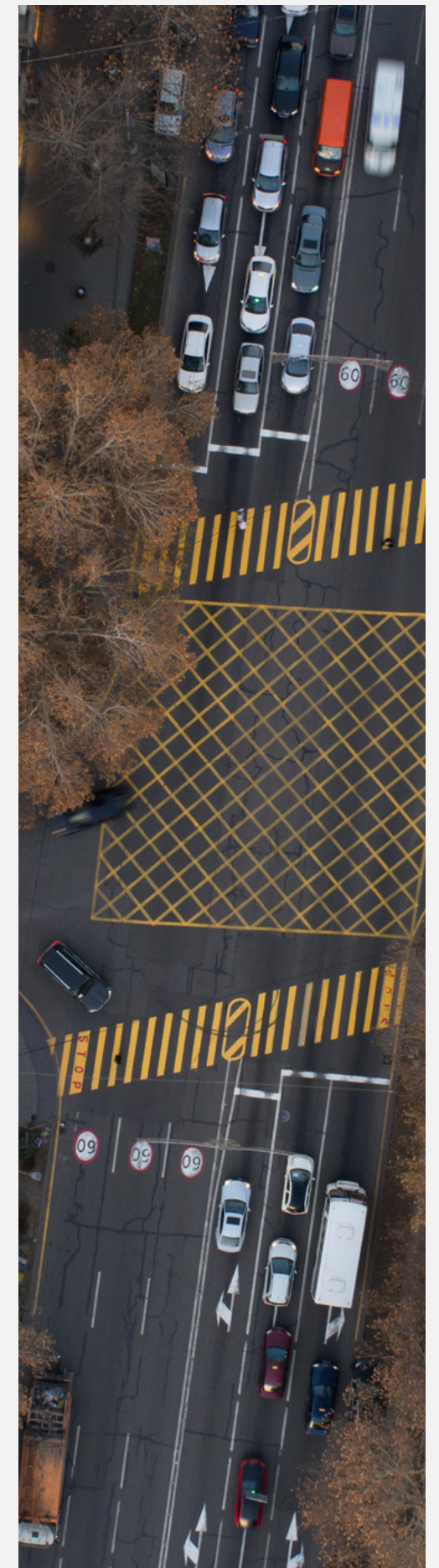
These projects could be feasible for financing by the private sector, but since no studies were carried out for them in advance, the agencies' expectations fall short.

That's because you have to understand a few aspects about such projects, such as how risk sharing can work out, the pricing of the public comparator, what liabilities the state will be burdened with, and how ready the market as well as the stakeholders are.

So, you must start the process in advance — ahead of everything — because we need ample time to review the project, recruit an advisor, assess the feasibility, and market it, among other things.

There is a very good pipeline of projects coming up.

I can say that we are regaining the trust and the support of the government in tendering these projects and the current pipeline is critical.





Trend 3

The rise of philanthropic capital

Even before the pandemic, governments around the world were struggling to fund all the infrastructure they needed.

The fiscal supports and economic impacts of the pandemic have made the task nearly impossible. As evidenced by the revised future development plans HS2 (a high speed rail line) in the UK,¹ even the most developed markets may struggle to find the fiscal space to deliver on all their stated objectives.

As the world approaches the 2030 energy transition milestone (global greenhouse gas emissions need to be cut 43 percent by 2030, compared to 2019 levels, to limit global warming to 1.5°C), it is becoming increasingly clear that exponentially more investment will be needed.

Yet governments simply don't have the budgets to make this a reality.

In the emerging markets, it often falls on the Multilateral Development Banks (MDB) and big national development agencies to bridge the gap.

In part, this is about helping markets and their regulators to improve governance, enhance project preparation capabilities and prioritize pipelines into programs of work that might attract private investors.

MDB funding can only go so far and, at best, can act as a catalyst for mobilizing more capital. And many of the MDBs are limited in how much they can spend.

Their capital increases are dictated by shareholder countries who are also struggling to meet their own domestic budget shortfalls.

Despite their critical role in closing infrastructure gaps in emerging markets, it is unlikely that more capital will flow from shareholders into the MDBs any time soon.

Can philanthropic capital fill the gap?

According to KPMG professionals analysis, the quantum of philanthropic capital being allocated to infrastructure development is rising.

Part of the increased flow is coming from global philanthropic organizations that have always been focused on catalyzing positive outcomes for society. And KPMG member firms are also seeing increased allocations coming from family offices and ultra-high-net-worth individuals seeking to make an impact.

Working in partnership with MDBs and development agencies, these philanthropic investors are using their financial strength and different return expectations to help MDBs crowd more private sector capital into projects using forms of 'blended finance' (a topic high on the agenda at COP28)² where development and philanthropic funds are used to reduce the risk for private capital, thereby making projects more bankable and attractive.

A good example is the recent US\$1.1 billion SDG Loan Fund developed by AllianzGI and Dutch Development Bank FMO.³

The Fund benefits from multiple layers of risk protection including a \$111 million first-loss investment from FMO, which is credit-enhanced with a \$25 million unfunded philanthropic guarantee provided by the John D. and Catherine T. MacArthur

Foundation (MacArthur Foundation). MacArthur Foundation's triple A rated guarantee enabled FMO's first loss investment by resolving key risk and technical factors.

Over the coming year, many MDBs and other multi laterals are expected to place a greater focus on crowding in philanthropic capital as a way to better drive private capital flows. Should they be successful, a greater volume of projects should start to come to market — particularly in the emerging markets.

1. GOV.UK, Press Release, PM redirects HS2 funding to revolutionise transport across the North and Midlands, October 2023
2. KPMG in Singapore, Navigating the post-COP28 landscape for global decarbonisation, 2023
3. The SDG Loan Fund, Blended Finance Fact Sheet, Convergence Blended Capital, 2022



Trend 4

Towards the Infrastructure Mesh

The magnetism of city centers is diffusing. Many city leaders increasingly recognize that storing all of a city's value in the center is creating an imbalance in access and opportunity.

It also seems clear that citizens are looking for a new version of the '15-minute city' where everything is within reach notwithstanding the occasional commute into an office somewhere.

At the same time, there is a continued shift towards infrastructure decentralization.

Mini-grids and solar panels are popping up to take the pressure off large base-load generation facilities.¹ Mobility as a Service providers are extending the reach of mass transit and bridging the final mile. Digital healthcare is moving services into homes and out of hospitals.

This is a fundamentally different world for infrastructure planners and investors.

Rather than focusing on building massive trunk infrastructure and expanding existing networks, an opportunity is emerging to instead focus on incentivizing businesses, consumers and users to mesh their own assets into the infrastructure that is already in place.

And for existing infrastructure providers and owners to mesh their assets more effectively into the holistic infrastructure network.

It's a big opportunity. Greater connectivity between public and private infrastructure will lead to greater value of the whole. Done right, it is about making better use of the assets that are already in place.

At the same time, an infrastructure 'mesh' approach allows governments to address some of the resilience issues that naturally come from putting all your eggs in one basket.

This does not, however, suggest that government can simply sit back and let consumers take on the burden of developing and paying for urban infrastructure.

There are many infrastructure assets and services that will remain solely within the government's remit — either due to cost or complexity. Governments will also need to ensure that the connectivity infrastructure is available, sustainable and effective enough to allow meshes to form (upgrading the electricity generation network to accommodate decentralized renewables, for example²).

Regulators will need to update and adapt their capabilities in order to address the range of technology and business model challenges they now face.

Regulation works well in highly concentrated sectors where a handful of companies can be held to account. Reengineering regulation to suit a decentralized market where consumers are feeding into the system and paying their own replacement costs will be much trickier. New mechanisms will need to be found.

That being said, new cities, could see a significant advantage by setting the stage for distributed infrastructure right from the start by designing and implementing based on decentralized models delivered through effective partnerships.

Infrastructure designers and developers will also need to rethink their approaches to incorporating whole system thinking into their designs and connectivity into their models. The days of building monolithic, industrial-era, single-purpose assets are coming to a close. Infrastructure players will need to adjust accordingly.

This year, expect more governments to start talking about the 'infrastructure mesh' (though maybe not in those exact words). And expect infrastructure players to start evolving in response.

1. World Bank, Solar Mini Grids Could Power Half a Billion People by 2030
2. KPMG International, The role of energy and utilities in achieving net zero cities

By the book

Ibrahim Sattout, Partner at ASAR — Al Ruwayeh & Partners, addresses the state of Kuwait's infrastructure sector's regulatory landscape

What have been the key changes to Kuwait's regulatory and contractual framework for private sector participation in infrastructure projects?

The first law to have regulated the PPP sector in Kuwait was the BOT Law No. 7 of 2008 on BOT projects.

This law was subsequently replaced by the IWPP Law No. 39 of 2010 (which remains in effect and was issued to regulate large-scale PPP schemes in the water and electricity sector), and the PPP Law No. 116 of 2014, which established the Kuwait Authority for Partnership Projects (KAPP) as a successor to the Partnerships Technical Bureau established under Law No. 7 of 2008.

Both the IWPP Law and the PPP Law were passed because the government realized that Law No. 7 of 2008 did not fully meet international standards and practices.

In addition to the IWPP and PPP Laws, a specialized law on

privatization was issued in 2010, which is the Law No. 37 of 2010 Regulating Privatization Programs and Transactions. While this law remains in effect, to our knowledge, there is only one example of its implementation, which is the privatization of North Shuaiba power and water plant. No other examples exist of privatization programs that have been successfully completed in Kuwait.

Separately, another specialized authority which is playing a major role in smaller scale PPP projects, is the Public Authority for Housing Welfare established under Law No. 47 of 1993 (PAHW). PAHW, in combination with the PPP Law (and its own Investment Resolution) launched a number of mixed use real estate development investment opportunities structured as PPPs.

In addition to the specialized laws previously noted, we should mention Law No. (49) of 2016 which regulates public tenders in Kuwait.

From a contractual standpoint, we note that only two PPP projects have taken place thus far in Kuwait, i.e., Az Zour North 1 IWPP and Umm Al Hayman wastewater treatment plant.

At present, there are couple of projects in the pipeline. KAPP recently issued the RFP for Az-Zour North Phases 2 and 3.

In addition, KAPP released the results of prequalification phase for Al Dibdibah Power and Al Shagaya Renewable Energy – Phase III–Zone 1 Solar PV IPP project, and the fixed telecommunications network development project, respectively.

In our view, these projects will generally rely on standardized documents and agreements, which should minimally differ from one another depending on the nature of the project being contemplated.



Ibrahim is a Partner at ASAR and has been with the firm since October 2005. Prior to joining ASAR, Ibrahim worked as an associate at Raphaël and Associates (Beirut, Lebanon) between October 1993 and August 2000 and as an international legal counsel at Gulf Bank KSCP (Kuwait) between October 2000 and September 2005. Ibrahim's practice includes advising on complex and landmark transactions in Kuwait in the areas of banking and finance, capital markets, project finance and PPP projects, private equity, restructuring and bankruptcy, mergers and acquisitions, and commercial and corporate law, along with international arbitration. Ibrahim has been recommended as a leading lawyer in Kuwait from Legal 500, Chambers and Partners and International Financial Law Review.

How does it compare to developed markets like the UK and Singapore currently?

As noted earlier, only two projects reached financial close since the promulgation of the first BOT law (no. 7 of 2008).

As such, Kuwait differs from sophisticated markets with long-standing infrastructure development practices in a way that its PPP laws and regulations are still fairly recent by comparison, and have not been comprehensively tested in practice, as evidenced by the limited number of PPP projects which have successfully reached commercial operation.

Furthermore, and while there is a growing tendency towards taking sustainable development into account in infrastructure development projects, this remains a fairly recent shift which lacks clear and well-detailed government-driven policies.

That said, we believe Kuwait is keen to learn from the experience of sophisticated jurisdictions, and there are ongoing discussions on the need to update the PPP Law to ensure its compliance with international standards and criteria.

What are some of the challenges international investors face when evaluating infrastructure projects in Kuwait?

International investors could face a number of challenges when considering participating in projects in the infrastructure sector in Kuwait.

- Among such challenges are the foreign investment regulations which require foreign investors to form partnerships with local

entities, which can be challenging.

- Another hurdle that foreign investors face is the complexity of Kuwait's regulatory framework, with frequent changes in policies and procedures in the tendering process.
- In addition, regulatory approval process can be slow and cumbersome due to bureaucratic hurdles. This can lead to delays in project implementation which, in turn, affects costs and timelines of infrastructure projects.
- With regard to energy projects, there is a lack of a clear and comprehensive general policy for decarbonization which sets out all the standards and requirements with which the investor and the project it bids for must comply. When investors consider whether to bid for a project in Kuwait, it is imperative that they are equipped with comprehensive knowledge of the requirements from the outset. Expecting investors to commit resources, engage legal and financial advisers, and undergo prequalification processes without clear insight into the standards and requirements they must meet is both burdensome and inefficient.

What steps can be taken to make infrastructure projects in Kuwait more appealing to international developers and investors?

Among the key steps that can be taken to make projects in the infrastructure sector more attractive to international developers and investors, are the following:

- Firstly, political and economic

support for PPPs is essential to build local and international confidence which, in turn, encourages private sector participation. To make PPPs truly attractive to the private sector, it's important to combine regulatory frameworks, risk allocation mechanisms, and investment incentives.

- A well-defined policy supporting PPP projects is crucial. A central component of this approach is the creation of a dedicated "one-stop shop," such as KAPP, to serve as the main coordinator for PPP projects, ensuring they are executed with coherence and efficiency.
- Additionally, a thorough review of the existing PPP legislation is necessary, and for this purpose it is essential to take into account the lessons learned throughout the last decade. Paramount in this regard is the need to improve decision-making processes, reduce delays, and strengthen PPPs against potential political disruptions.

- Reforming the existing investment laws to make them more investor-friendly, facilitating the process of granting foreign investment incentives and exemptions and expanding their scope. While the parliament promulgated Law No. 1 of 2024 which amends Article 31 of the Public Tenders Law to provide that a foreign party appropriately registered as a service provider/contractor may participate in government tenders directly and without a Kuwaiti agent/partner,

the executive regulations are not yet issued and as such, it is difficult to assess how this new law will be implemented.

- Moreover, it's critical to establish a robust capacity-building framework across various government agencies so as to enhance the skills and expertise of government officials, thereby improving the efficiency and effectiveness of processes crucial for the successful tendering and execution of PPP projects.
- In terms of renewable energy projects, it is essential to ensure transparency and accessibility so that decarbonization and sustainability requirements are established at the onset of the bidding process, ensuring that potential bidders are fully informed before they embark on the application process. This could be partly achieved by issuing a clear and comprehensive general policy for decarbonization and sustainability which sets out all the standards and requirements with which the investor and the project it bids for must comply.

Green energy and Environmental, Social, and Governance (ESG) principles are significantly transforming the infrastructure sector worldwide. How do you see these being implemented in the policies and the regulatory framework in Kuwait?

The New Kuwait Vision 2035 is very clear about reducing reliance on fossil fuels and moving towards renewable energy. Furthermore, at COP 27, the Kuwaiti government

confirmed its intent to reach net zero carbon emissions in 2060, with a commitment to deliver net zero carbon emissions in its critical oil and gas sector a decade earlier, by 2050. These objectives were reiterated in COP28. Kuwait is also moving forward to achieving New Kuwait Vision by ensuring that 15 percent of the local electricity is from renewable energy by 2030.

Among the recent legal changes reflecting the Kuwaiti government's growing interest in ESG principles is the recent amendment to the law establishing the Ministry of Electricity and Water, which changed its name to the Ministry of Electricity, Water and Renewable Energy and granted it authority for the regulation of renewable energy projects in Kuwait. Additionally, the Kuwaiti government has recently signed a Memorandum of Understanding (MOU) with the Chinese government to accelerate the development of the Kuwaiti renewable energy sector through joint cooperation between the two countries. Said MOU now has the force of law after its ratification pursuant to Decree No. 60 of 2024.

Furthermore, one of the key renewable energy projects of Kuwait is the Shagaya Project, which is planned to be finalized by 2030. This project, which is the brainchild of the Kuwait Institute for Scientific Research, consists of a solar PV park with a 10MW energy production capacity. Moreover, state-oil companies have been contemplating several PV solar plants for a number of years; in fact, our law firm is currently advising on a renewable energy plant project being undertaken by the Kuwait Oil Company.

This shift towards renewable energy reflects a global tendency and makes sense for Kuwait given its substantial solar and wind resources.

We are optimistic that Kuwait would make such transition and achieve its goals in the near future, thanks to the determination of its leaders, government and people.



Trend 5

Contracting for technology

Every year, this publication predicts that the infrastructure sector will finally embrace digital, innovation and technology. And while there have certainly been some pockets of digital transformation seeping into the infrastructure sector, progress has been comparatively slow versus other sectors.

So why do KPMG professionals think things will change this year?

Some of our optimism is based on the technology landscape. Generative AI showed us that disruptive technologies can emerge and go mainstream in months or even weeks.

The uptake of digital twins in asset management and design demonstrates that industry has the capacity and desire to transform. Demand for digital services from users and consumers is amplifying the pressure.

Recognizing potential funding shortfalls and environmental objectives, many governments and asset owners see technology as a way to maximize the value of existing assets and investments.

There is also pressure rising from investors and owners who recognize that technology can enhance the sustainability and resilience of their assets.

They don't just expect to see technology embedded into designs, they also want to know how the assets will absorb or integrate new (and possibly as-yet unimagined) technologies in the future.

There is some cause for skepticism that this trend will materialize in the next year. The reality is that it has taken decades for the construction

industry to adopt things like Building Information Modeling (BIM), modular construction and digital twins. Margins for construction companies remain tight and there are few demand-side incentives to encourage them to invest in technologies that aren't either mandated or evaluated in their contracts.

That they will suddenly become innovation evangelists seems far-fetched. However, there is some room for optimism. Over the past few years, a growing number of governments and international institutions start to think much more critically about how they might more appropriately contract for innovation and technology.

New models and approaches are being developed which, if proven successful, could unlock a wave of innovation across the sector.

There are also pockets of innovation to be found around the world. Many construction companies in Asia, for example, are using IoT technology, digital dashboards and AI-enabled cameras to drive operational improvements.

In some markets, these types of technologies are becoming business as usual in the design phase.¹ KPMG member firms have global experience in helping clients navigate innovative and technology forward approaches.

A client was supported in developing a framework for Digital Twin development to support the development of transport digital twins. While for another client, a KPMG member firm wrote the full business case to successfully draw down funding to establish the testbed program.

Perhaps the greatest catalyst to this trend materializing is capability and capacity development. Procurement leaders need to properly understand the value technology provides and how to contract for it.

Regulators need to develop the right mechanisms to support it and govern it. Contractors and developers need the capabilities to integrate and operate it. Consumers need the digital skills to use it. And while the market for these types of skills is tight, it is slowly expanding.

We believe that modern construction methods and technologies like Digital Twins will increasingly become embedded in the sector, and the real benefits of AI will start to show in the next couple of years.

Real improvements in terms of construction efficiency, operational improvement, and innovative design will emerge.

We also expect to see significant action and adoption driven by innovation in other sectors such as fintech for payments (toll road), logistics infrastructure (better fleet management), hospitals (effective patient online care and information management) and governance (e-gov).

Technology will also be an important enabler to fast tracking sustainable and green infrastructure. We are confident that technology will remain an enabler and key driver for growth. Don't expect it to fall off our list of top trends any time soon.

1. KPMG International, 14th Global Construction Survey, 2023



Trend 6

Driving the energy transition

At COP28, nearly 200 nations agreed to triple renewable energy capacity and double energy efficiency by 2030¹ in order to meet international Net Zero goals as outlined in the Paris Agreement.²

As noted in KPMG's Turning the tide in scaling renewables, that will require a massive amount of capital investment — more than governments can supply alone. There is also increasing recognition that — in a world of growing uncertainty and disruption — the energy priorities for many governments also include security, access and affordability. And that means that hydrocarbons will continue to be a key source of energy for the foreseeable future (according to the 2023 Statistical Review of World Energy report, in association with KPMG and Kearney, hydrocarbons still accounted for 82 percent of energy supply).³

More prudent attitudes are prevailing. Rather than calling for an end to hydrocarbon-based energy generation, many observers are now suggesting a rapid shift towards transition fuels and that any new generating capacity be primarily renewable. They are advocating for the oil and gas industry to more rapidly develop and implement carbon capture, utilization and storage technologies.

They are encouraging the formation and standardization of carbon credit markets. They note the need for greater allocations to the emerging markets in order to encourage clean development.

The launch of the Cement and Concrete Breakthrough by Canada and the UAE addresses a critical area of urban emissions. Cement, accounting for about 7 percent of global emissions, is a sector in urgent need of decarbonization. This initiative aims to speed up progress towards net-zero cement by fostering investment and

collaboration across the value chain, including novel solutions like carbon capture and innovative materials.⁴

Unfortunately, the path to Net Zero is becoming increasingly complicated. Government incentives are distorting market dynamics. Protectionism in the form of incentives, industrial policy and trade wars are driving competition between nations. Budget deficits and concerns about possible recessions are reducing fiscal space for investment.

Market risks are growing, particularly in those regions most exposed to the climate crisis. And all of this against a backdrop of increasingly violent and destructive weather events that create a need for further investments in resiliency or adaptation strategies. In markets where governments have made firm commitments to meet their Paris Agreement goals, the need for aggressive policymaking is clear but in some cases needs to be balanced against other short to mid-term policy priorities.

The Green Public Procurement Pledge, signed by countries like the United Kingdom, United States, Canada, and Germany, commits to using low and near-zero-emissions steel, cement, and concrete in public procurement. This pledge is a significant step towards reducing emissions in the construction sector and developing harmonized emissions accounting standards for construction materials.

Energy transition is going to be a journey that requires wide ranging collaboration between governments and the private sector. KPMG professionals hope that the participation of oil producing countries at COP28 brings divergent perspectives, but is also a recognition that might bring practicable approaches to help deliver on the goal.

COP28 ended with a promise to 'transition away from' them⁵; expect delegates to COP29 to want to revisit what that means. And expect infrastructure planners and investors to be listening closely to the dialogue.

At the same time, investors should be expected to ramp up their pressure through capital allocation. Regulators will get better at forcing the issue. Consumers will become more open to shouldering the financial costs. And global institutions will create innovative mechanisms and programs to help drive capital towards energy transition initiatives in the emerging markets.

One such innovative project that a KPMG member firm is advising on is the Cirebon IPP ETM pilot project in Indonesia. The 660-megawatt coal-fired power plant (CFPP) Cirebon-1 in Indonesia will likely be retired almost 7 years earlier than scheduled as a result of discussions with the plant's owners and the Government of Indonesia under the Energy Transition Mechanism (ETM) program of the Asian Development Bank.

As the focus shifts to operationalizing the renewables and efficiency goals agreed at COP28 and realities of the energy transition start to hit home, expect to see everyone become more prudent about what must be achieved and the tradeoffs that must be made.⁶

1. [KPMG in Singapore, Navigating the post-COP28 landscape for global decarbonisation, 2023](#)
2. IEA, Tripling renewable power capacity by 2030
3. [Energy Institute, in association with KPMG International and Kearney](#)
4. Canada.ca, Canada launches the Cement & Concrete Breakthrough initiative at COP28, New release, 2023
5. WWF, COP28: Key takeaways from the UN climate summit, 2023
6. WWF, COP28: Key takeaways from the UN climate summit, 2023

For the future

Yasmeen AlKandari, Co-Founder and CEO, SEEDS Co., talks about the race towards sustainability in Kuwait's infrastructure sector

Talk to us about SEEDS and the motto behind it.

SEEDS Co. is a homegrown Kuwaiti company with a bold vision: to transform the conventional built environment into spaces that coexist with nature and support the well-being of our communities.

Our motto, 'Growing a Greener Future,' reflects this mission, inspiring us to create tangible solutions for a sustainable Kuwait. In a country where environmental challenges are increasingly urgent — such as high energy and water consumption — SEEDS is working to pioneer change.

Our three pillars of service — green building solutions, sustainability solutions, and events — are designed to address these challenges head-on.

We help shape projects that meet global sustainability standards

like LEED and GSAS, while also guiding businesses towards carbon neutrality and Environment, Social and Governance (ESG) leadership.

But what makes SEEDS unique is our connection to the community. Through carefully curated events, we aim to engrave sustainability into the Kuwaiti culture.

These events go beyond awareness — they foster a sense of responsibility and inspire individuals to integrate sustainable practices into their daily lives.

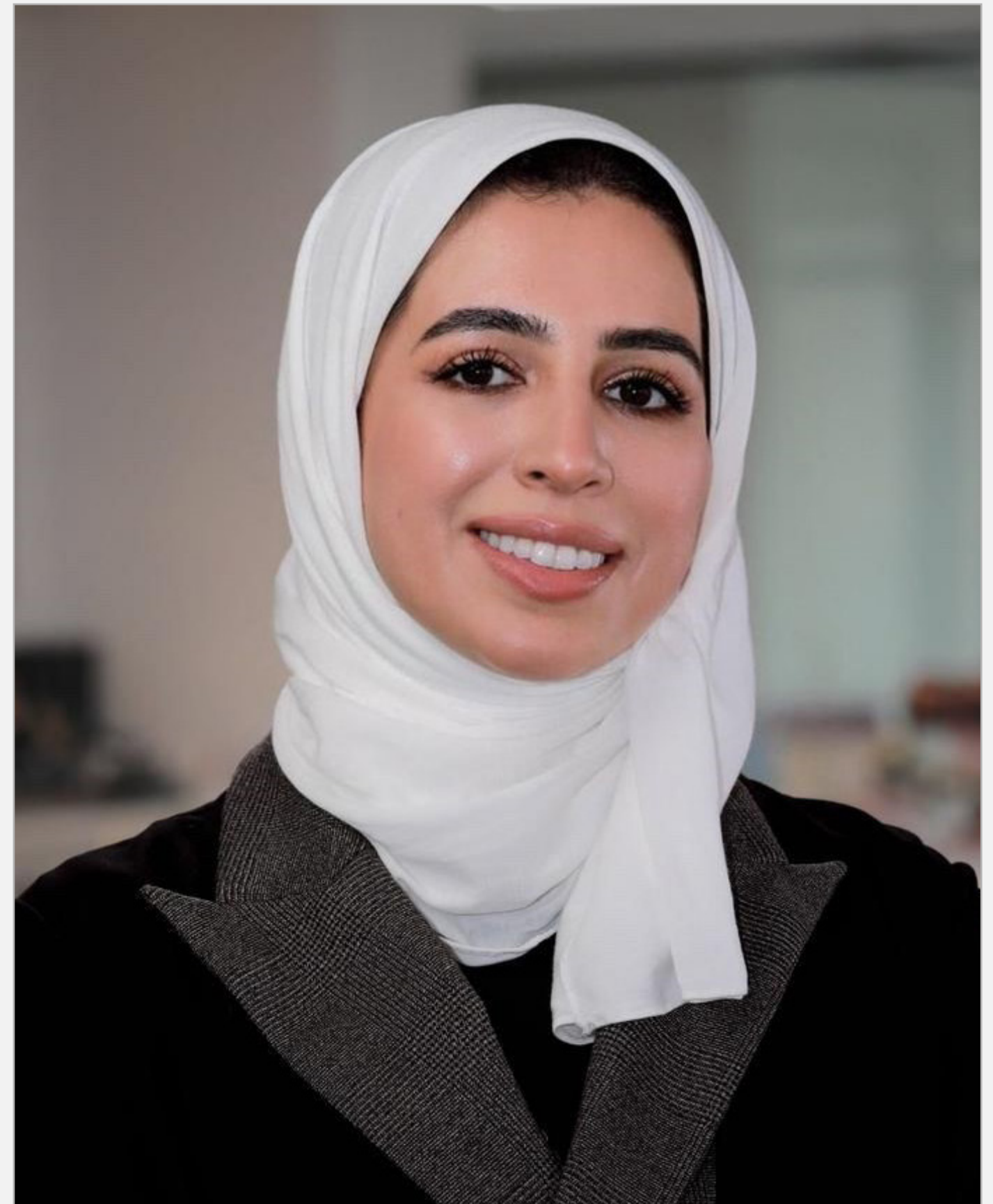
SEEDS is part of a larger movement for Kuwait's future, one aligned with Vision 2035 and its goals for sustainable development. While our roots are firmly planted in Kuwait, our vision extends across the MENA region.

By expanding our expertise and services to neighboring countries, we aim to address shared environmental challenges and inspire a regional shift towards sustainability.

As SEEDS grows, we remain committed to driving tangible change at home in Kuwait, setting a benchmark for the region and beyond.

How would you say green solutions are shaping up in Kuwait's infrastructure sector? What can be done to accelerate their use over the more conventional 'grey infrastructure' concepts?

Kuwait's infrastructure sector is seeing a growing awareness of green solutions, driven by global environmental trends and local challenges, including resource scarcity and climate vulnerability.



Yasmeen AlKandari, a green building and sustainability expert, leads SEEDS Co., Kuwait's first company dedicated to green building services. A USGBC Faculty Member specializing in LEED, GSAS, and EDGE, Yasmeen and her partner earned the Visa She's Next Award in 2023 for leading the best female-led sustainability business in Kuwait.

Projects like NEOM in Saudi Arabia and renewable energy developments in the region have set benchmarks for integrating sustainability into infrastructure.

However, green solutions in Kuwait remain in their infancy. Accelerating their adoption requires addressing key barriers: education, policy, and cost perception.

Awareness campaigns can help dispel misconceptions about the affordability and feasibility of green solutions. Policies and incentives, such as green procurement mandates or tax benefits, could make sustainable practices more attractive.

Furthermore, integrating sustainability into academic curricula and professional training can equip stakeholders with the knowledge to champion green initiatives.

Do you believe equitable green growth — evenly dispersed — could solve some of Kuwait’s infrastructure problems?

Equitable green growth has the potential to address many of Kuwait’s infrastructure challenges, including urban sprawl, resource inefficiencies, and socio-economic disparities.

By evenly distributing green infrastructure — such as community gardens, efficient public transport, and renewable energy projects — across regions, Kuwait can enhance accessibility, improve quality of life, and support the economy.

Investments in green infrastructure foster resilience, reducing dependency on centralized utilities

and mitigating risks like energy and water shortages. Beyond environmental benefits, these projects stimulate economic growth by creating jobs in emerging industries, such as renewable energy, sustainable construction, and environmental technology.

This, in turn, strengthens local economies and diversifies Kuwait’s job market.

Green growth also aligns with Kuwait’s Vision 2035 goals for sustainable development, promoting both environmental stewardship and economic prosperity.

However, achieving equity requires careful urban planning and policy-making to ensure underserved communities benefit equally from green investments.

With the right strategies, equitable green growth can be a transformative force, fostering sustainability while driving economic opportunities for all.

Environmental compliance is becoming increasingly important. Share your thoughts on the role bigger corporations can play to meet and manage the related regulatory requirements.

Large corporations play a pivotal role in advancing environmental compliance and reducing carbon emissions.

By adopting renewable energy, enhancing operational efficiency, and transitioning to low-carbon materials, they can meet regulatory requirements while driving cost savings and operational efficiencies.

In Kuwait, energy, construction, and manufacturing sectors are well-positioned to lead this shift.

These actions not only mitigate environmental impact but also improve return on investment (ROI). Energy-efficient practices lower utility costs, while ESG initiatives attract investors seeking to invest in sustainable businesses.

Transparent ESG reporting builds trust and enhances market competitiveness, further boosting long-term profitability while assessing the opportunities and risks that a business may have.

By embedding sustainability into their core strategies, corporations reduce risks, enhance their reputation, and align with Kuwait’s Vision 2035, achieving both environmental and economic gains.

There is an element of skepticism around the adoption of green technologies in the infrastructure industry. How do you see this influencing the sector in Kuwait?

Skepticism around green technologies often stems from misconceptions about cost, reliability, and practicality. In Kuwait, where conventional ‘grey’ infrastructure has long been the norm, this skepticism can slow adoption.

However, as global success stories emerge and the long-term benefits of green technologies become apparent, attitudes are gradually shifting.

To overcome skepticism, the sector needs demonstrable case studies and pilot projects that highlight the carbon

reduction, operational, and strategic benefits of sustainable technologies.

Although green technologies’ financial return of investment studies are giving long-duration results in Kuwait, green technologies are enhancing asset depreciation value, improving ESG performance, and attracting international investors and stakeholders who prioritize sustainability.

Collaborative forums where stakeholders can share experiences and learn from regional successes can further accelerate adoption.

Clear communication about returns on investment as carbon reduction and alignment with national sustainability goals, such as Kuwait Vision 2035, is vital.

Looking at a three-year horizon, what are some measures infrastructure stakeholders can take to fulfill their ESG/ sustainability goals?

Over the next three years, infrastructure stakeholders in Kuwait can prioritize several measures to achieve ESG and sustainability goals:

- **Policy alignment:** Adopting and exceeding local environmental standards while incorporating global best practices into projects.
- **Energy and water efficiency:** Implementing renewable energy systems, such as solar panels, and water-saving technologies in development.

- **Material selection for construction and manufacturing:** Using low-carbon, locally sourced, and recyclable materials minimizes emissions, reduces waste, and supports local economies, directly contributing to sustainability goals like carbon neutrality and resource efficiency.

- **Data-driven decisions:** Leveraging technology to monitor energy consumption, emissions, and waste, ensuring compliance and progress tracking.

- **Stakeholder engagement:** Assessing, educating, and involving clients, contractors, and the public in sustainability initiatives to create a collective sense of ownership.

These actions will not only help meet ESG targets but also position infrastructure stakeholders as leaders in a rapidly evolving industry.

Transparent ESG reporting builds trust and enhances market competitiveness, further boosting long-term profitability while assessing the opportunities and risks that a business may have.

By embedding sustainability into their core strategies, corporations reduce risks, enhance their reputation, and align with Kuwait’s Vision 2035, achieving both environmental and economic gains.



Trend 7

Reforming the regulatory remit

Regulation used to be all about consumer protection. Regulators wanted to ensure that critical services were affordable, that access was secure and that assets were being replaced appropriately. Now things have become a lot more complex.

Regulator scope has expanded to include risks like cyber security, resilience, decarbonization and innovation. And more is on the horizon. The big question is whether regulators should be taking on these new roles and areas of focus. Many would argue that these topics are actually the remit of politicians and policymakers, not regulators.

Regulation is best used in slow-changing, highly-concentrated sectors where risks are known and controllable. New and emerging areas like Generative AI and decarbonization challenge the model.

It is not surprising that regulators are struggling to cope. While there are some regulators that move quickly to get their arms around key issues (particularly in Asia), there are also many that are reluctant to intervene on a topic unless they have a clear political remit to do so, meaning they often aren't tasked to the job until it is too late.

Regulators sometimes lack the technical skills, particularly when it comes to emerging issues and technologies. This means that, even when they have a clear policy steer, they don't always have the capabilities or capacity to manage it appropriately. Current regulatory models are also limiting regulators' ability to deal with the increasingly difficult trade-offs that are being expected to be made.

The traditional 'RPI-X' model might keep customer bills low, but it does not incentivize the scale and pace of investment that is required for challenges like the energy transition

and building climate resilience. This year, expect this debate to come to a head in many markets. It will start with continued challenges that force politicians and regulators to have a more sober and collaborative conversation about what regulation can and cannot do.

That will require politicians to take more responsibility for many of these issues. That should lead to a level of regulatory reform, supported by a concerted effort on the part of regulators and governments to develop new models that incentivize more investment and innovation.

This will require not only an infusion of new skills and talent capable of managing emerging technologies and creating innovative mechanisms. It will also require regulators to be given greater breadth of responsibility within clearer political parameters.

At the same time, investors and capital markets will need to recognize that different flavors of regulation can work in different markets. Expecting developing nations to adopt the regulations of the developed nations — or withholding funding until they do — will not empower emerging market regulators but rather undercut them. While it may not be as immediately noticeable, this should be expected to be a strong trend in 2024.

Demand for robust and effective regulation across a range of fast-moving trends will force the issue up the agenda.

Regulators will take the opportunity to adapt and upskill. Also, regulatory activism should be expected to increase (similar to what happened with antitrust regulations) with a focus on driving growth across sectors while balancing consumer, investors and environmental stakeholder expectations.

On the go

Jassim Al Awadhi, Founder & Initiative Director, Kuwait Commute, talks about the future of public transport in Kuwait

Tell us about Kuwait Commute.

It is an initiative we started to raise awareness about public transportation, with the vision to create a public transportation system that is safe, convenient, efficient, inclusive, and ecofriendly.

At the start, we want to have a bus loop in Kuwait City to show the importance of public transport, and because it is easier to establish the system here, owing to its low risk of failure. What I mean by this is, you don't have to worry about creating bus lanes and building guard rails, among other things. Also, Kuwait City's longest road is 5 kilometers, so the vehicles will not reach high speeds. All in all, you will require less infrastructure.

We started this by getting information about the status quo. We sat with the stakeholders, City Bus, KBTC,

KGL, the Ministry of Communication, the Ministry of Public Works, Kuwait Municipality, relevant officials, and some ministers, among others, because we wanted to understand what their roles were in this situation and what they needed in terms of regulations and requests from us to implement the changes required at least to get towards the beginning of the journey.

Kuwait Commute is included in the Fourth Kuwait Master Plan. It took us six years to get there but we wanted to ensure that we had a framework with the highest success rate and was independent of the person in charge. So, we went through the Kuwait Master Plan, told them we want to start with a bus system in Kuwait City, and we took it from there.

What are the views of people in Kuwait with regards to public transport?

They are accepting it. This is based on a survey we conducted with Service Hero, where nearly 2,200 people participated.

However, we found out that there also exists a negative view around public transport. We also conducted research to see if the culture of public transport existed in Kuwait and nearly 80% of the participants said they used public transport. This means that the culture public transportation is there and we are not teaching people something new.

Of this, 60% of the Kuwaitis who took the survey, i.e., 74% percent of the total sample, welcomed the idea of using public transport when it is available.

But the problem is that there are not enough routes. For example, if I want to go to Souk Sharq in a bus, I cannot. That's the challenge.



Kuwait Commute is a volunteer initiative established by a group of young public policy enthusiasts. The aim is to get people excited about public transportation in Kuwait and to educate them along the way about the economic, environmental and social benefits of a thriving public transportation system.

I feel, you can go about solving this by creating routes that serve the population of an area. For example, most blue-collar workers reside in specific areas and providing them with dedicated routes will help their commute as they generally don't intend to prolong their trips by going to other areas.

This way, you are shortening the trip for both demographics, offering them need-based routes, providing them with better service, and encouraging them to take public transport.

What are the biggest challenges for the bus system in Kuwait?

I would say it is the lack of an active entity that puts forward routes, controls quality, and supports public transportation by expanding and improving the network. This is the biggest challenge — lack of regulation. Many of Kuwait's challenges can be solved with the right regulatory framework.

For instance, drivers are not only burdened with operation concerns but also financial challenges that lead them to drive more sharply — and, in many cases, they need to hit a sales target which often causes friction between the bus drivers and the traffic.

So, if you can offer adequate subsidies, then that would help pay the driver healthily, ensure they are safe and stick to sanctioned routes, give them the peace of mind, and encourage them to drive calmly. It would also help if the government provided us with a counter that all public bus operators could take their complaints to without having their businesses interfered with.

Similarly, for challenges pertaining to the adoption of public transportation, such as lack of sidewalks and poor weather conditions, can be addressed through proper regulations. For example, if you regulate the bus stops to front-of-the-door, it will make more sense for the entity to have a bus stop as they will get about 50 people. So, it's economically better to have public transport.

Luckily, the regulatory authority is there with all the legal mandates, but they have not done anything about it in a long time. So, we, along with the Ministry of Interior, understood that there is an issue with licensing. We agreed to provide them with a framework and (or) support their framework but, in return, asked for their support in developing the public transportation system.

The second challenge is the chicken and egg situation, where the chicken comes before the egg. This is because people need to use the system first to believe it.

The third challenge is lack of cohesion between the stakeholders. I believe that if you want to do something right then you must do it with balance. And, in Kuwait, I feel there is no reason to compromise on any of the stakeholders as the system is very small. There is enough room to include everybody and at different capacities.

What role can technology play in public transport?

It is very important. I will give you an example. Before there was CCTV, you would have to take public transport at your own risk. Now you don't. A camera is always monitoring the activities and if someone is causing

a problem, then they will be caught and dealt with accordingly. That's why part of what we want to do through regulations, essentially, is have the public transportation system policed by the government to further enhance the reliability and effectiveness of the current security and (or) surveillance systems, such as CCTVs, among others.

When it comes to technology in payments, we are dealing with lack of regulation again. We don't have an on-ground entity to ensure all bus operators use their standardized payment system. Having one such entity would also ensure that buses are clean, follow a particular schedule and more. And if there are any inconsistencies, the regulator will deal with them.

Technology could also play a huge role in terms of scheduling as you'd have data with regards to a person's starting point and destination.

Unfortunately, there is no collective database; only those gathered by individual service providers. In fact, the regulatory challenge is such that most of the bus stops in Kuwait are not authorized. So, we don't have accurate data to make effective data-backed decisions.

What are you doing differently as Kuwait Commute?

After conducting some research, we are now on the mission to create a bus loop in Kuwait City. This is because it's only 21 square kilometers, has a high population density, everybody comes here, and one does not require additional infrastructure to operate.

What we are doing differently is

starting with the user as the main stakeholder. We went out, spoke to them, frequented the routes and found out that there is a big gap in terms of service quality.

One of the issues is that the buses only stop on major roads, which is not safe for the drivers, for the traffic, and (or) for the passengers. We also realized that, when it comes to public transportation, buses will never go out of need.

We spoke to all the stakeholders to understand why we are in this situation where people don't want to use buses to meet their daily commute needs. What we understood was that there is a gap in terms of regulations.

At the moment, the public transportation system is in a vicious cycle of excessive competition with minimum regulation.

As a result, we deal with challenges such as buses taking unofficial routes. So, we took this into consideration and looked for other public transportation models that were relevant to Kuwait. London was the closest because it has private operators, and the system is managed by the state.

Things are well-managed and there is a system/timetable in place to ensure that. And because the state wants the operators to provide the public service, they need to subsidize.

This way, they enable the public bus operators to provide public service and, in return, benefit strategically in the form of less health insurance costs, reduced accident rates, less subsidies for fuel, better use of real estate, and more.

As an organization, what are your future plans with respect to mobility?

One of things we want to take up is bus stops. Given bus stops are not licensed, we want to work on licensing them to present them in a framework for service and maintenance, security, and expansions of the bus network, among other things, which are necessary for people to trust and use public transportation.

We got the approval from the Kuwait Municipality to build it, but the issue is that they may have to remove a few obstacles in those areas. These obstacles are essentially anything that is on the pavement without the necessary approval.

We also want to help facilitate monetization of the bus stops, having some ad space, without contradicting the billboards in the street. We want to do that to ensure we aren't stepping on anyone's toes and to make it less burdensome for the government to provide the public transportation system.

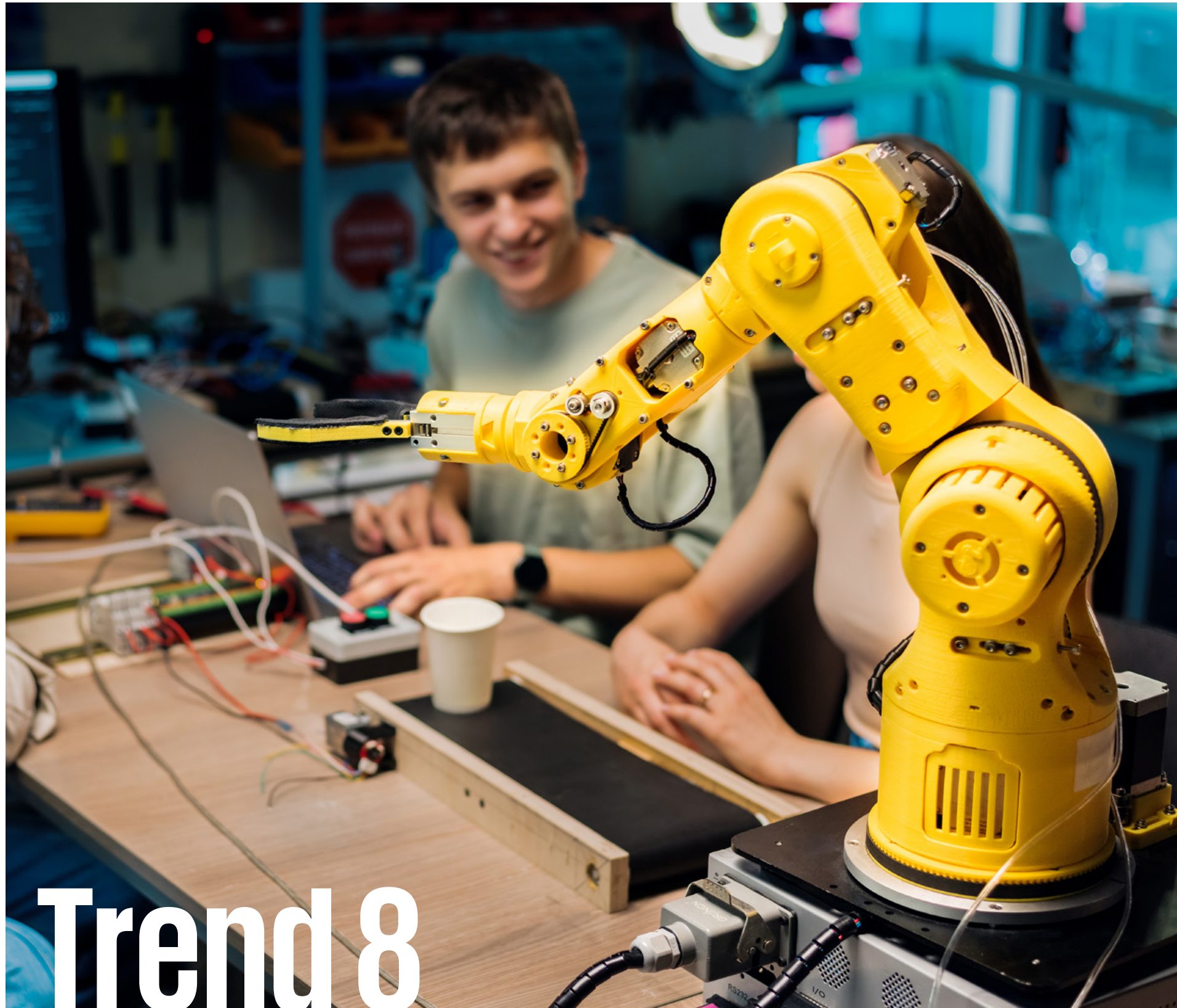
How do we make this vision a reality?

So, we conveyed the issue to the respective authorities and requested that we started with buses because they will have a very big impact when there are other transportation systems in place.

This is because for every one person using the metro, there will be two using buses.

We believe that if you make Kuwait 100% accessible with buses, then it will be easier for you to develop the metro as you will be able to move around some obstacles more freely and further optimize the routes, among other things.

Once we have an effective bus system in Kuwait City, we can replicate it in the commercial hubs, link them together and then focus on other transportation systems.



Trend 8

The next frontier

Just 20 years ago, space was the sole domain of governments. Nobody else had the capital or capability to take on such a mammoth task. But no longer. Today, it's private companies like SpaceX and its competitors that are pushing the boundaries of space exploration and development. Who would have thought?

At a more terrestrial level, similar rapid technological disruption is upending the status quo across infrastructure sectors. Consider, for example, the rapid adoption of contactless ticketing on metros. Or the introduction of automated vehicles.

Technological progress (or, if you prefer, disruption) is happening in shorter cycles with greater impact. If you are responsible for planning, operating or owning an asset with a 50-plus year lifespan, this might be disconcerting. In a world of big technological leaps, it can be challenging to plan for the long-term with any degree of certainty.

The answer is flexibility. For example, infrastructure owners and designers should be thinking about how they might repurpose and adapt their assets to serve alternative purposes in the future.

Are there design elements that you could include today that would allow the asset to be repurposed if and when it becomes tactically obsolete?

Technological flexibility will also be important. That might mean using open data and design principles to allow new technologies and tools to be bolted on in the future. Or perhaps contracting for services and outcomes rather than specific technologies or assets.

Governments will also need to be more flexible about ownership. One lesson from the emergence of the space industry is that the

lines between public and private infrastructure provision are rapidly blurring. In this case, the US government saw the writing on the wall and was flexible enough to partner with the commercial space industry to advance national objectives including space exploration, national security, combating the climate crisis, and international partnerships, including building commercial space stations, in-space assembly and manufacturing, extracting and using resources on the Moon, addressing the hazard of space debris, and fueling stations in orbit.¹

That gave them much greater flexibility to execute on their objectives using the best technologies available at any given time.

Now it seems there are no infrastructure areas too big or too risky for the private sector to take on, and no public agenda that the private sector cannot influence. Saving the world is as much a mission for the private sector as it is for the public sector (better yet, working together). Over the next few years, expect to see governments and infrastructure planners place greater emphasis on creating flexibility in their infrastructure designs and assets. It won't stop a new technology from disrupting your plans. But it will allow you to make better use of your existing investments for longer and give you the confidence that — when disruption does come — you will have options for dealing with it.

1. White House, FACT SHEET, U.S. Novel Space Activities Authorization and Supervision Framework, 2023

How KPMG can help

Global infrastructure insights with local experience

As public and private sector organizations pick up the pace of action on the energy transition, service modernization and economic growth, KPMG professionals can bring the insights, tools and capabilities organizations need to create, quantify and execute their strategies more efficiently and effectively.

KPMG infrastructure professionals seek to harmonize local expertise with a global perspective.

Understanding the nuances of local markets, so member firms can tailor approaches that resonate with specific regional needs while drawing upon leading practices from KPMG firms' operational footprint. This helps ensure that the advice provided is both locally relevant and global in scope, allowing organizations to navigate their unique challenges while staying on top of global trends.

With more than 2,500 infrastructure professionals in 120 countries and territories providing deep sector expertise across critical projects like digital infrastructure, roads, rail, ports and energy infrastructure, KPMG member firms can help you overcome challenges at each stage of the asset lifecycle for both new and existing infrastructure.

Whether planning, procuring, delivering, operating or transitioning, KPMG infrastructure professionals take an integrated approach with strategic, commercial and technical capabilities to help deliver projects

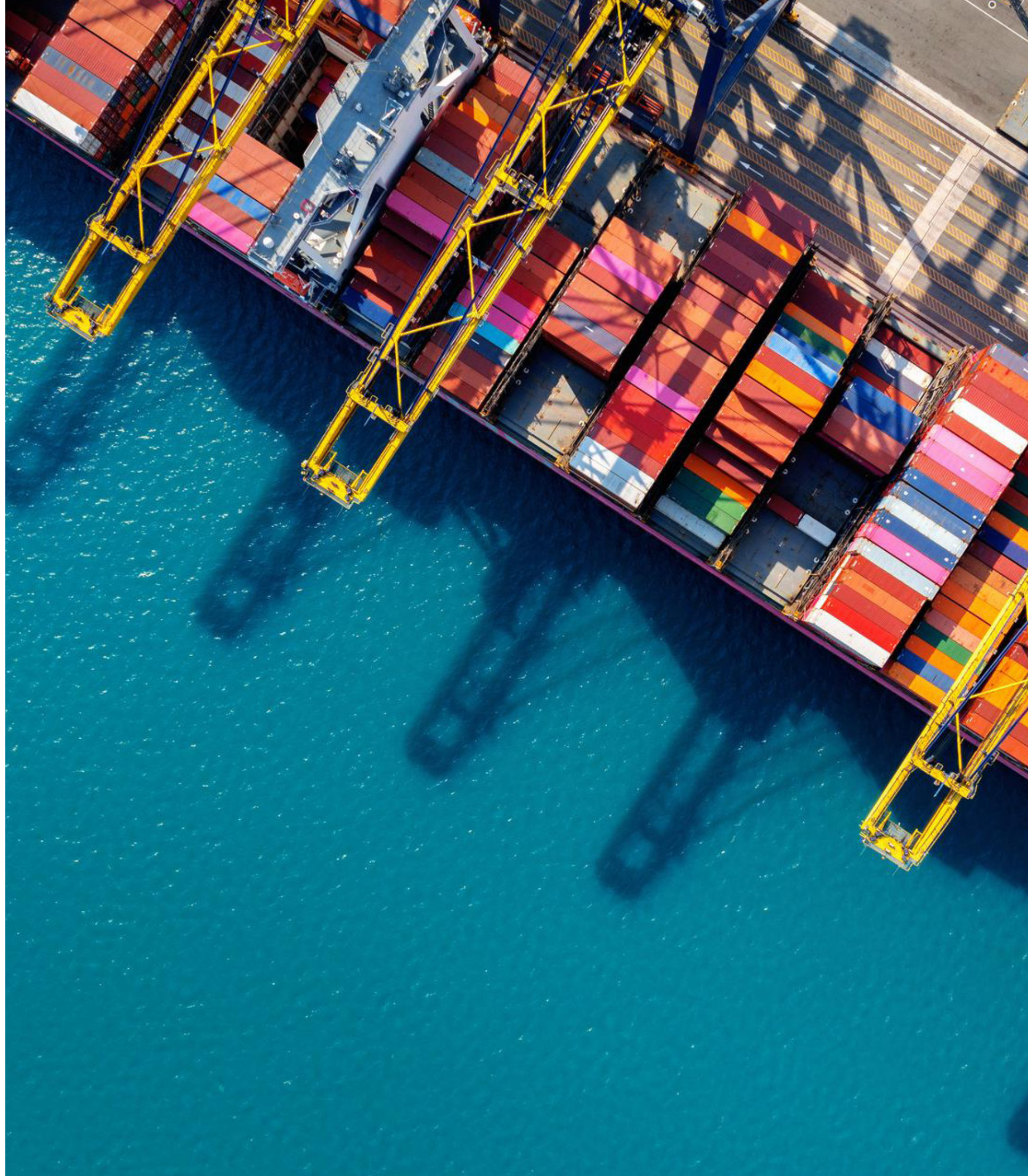
that are environmentally sustainable, socially impactful and drive lasting economic growth.

KPMG Kuwait

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