Cultivating a green future: how Saudi Arabia is redefining sustainability in the Middle East

Contents

Executive Summary

The Kingdom of Saudi Arabia is charting a bold path to sustainability by:

Becoming an emerging actor in green tech and climate innovation. It is estimated that investors from Saudi Arabia account for 75% of the investments coming from the Middle East to climate tech start-ups across the world[1]. Under the Saudi Green Initiative, the Kingdom is investing more than 180 billion dollars to grow the green economy[2]. Its Public Investment Fund is a founding member of the One Planet SWF Network, which facilitates strategic green investment allocations for mitigating climate change impacts globally[3].

Leading the hydrogen revolution globally. Saudi Arabia is poised to lead the global hydrogen market by 2030. This ambition is backed by the country's planned production of 2.9 million tons of hydrogen annually by 2030 and 4 million tons by 2035[4]. NEOM future city project will include the world's largest green hydrogen plant, worth $8.4 billion[5].

Completing mega projects that are propelling the Kingdom's future-forward sustainable infrastructure. The country's infrastructure projects in the pipeline top $1 trillion[6]. The ultra-ambitious NEOM future city project aims to run completely on renewable energy[7]. The Red Sea Project seeks to balance environmental conservation with sustainable high-end tourism[8].

Guiding and leading the way toward a greener future with vision. The Kingdom's Vision 2030 Strategy and the Saudi Green Initiative provide progress through measurable targets. As of April 2024, eight years since Vision 2030 was launched, 87% of its 1,064 initiatives are completed or on track, 81% of key performance indicators are on target, 105 of the 243 indicators have exceeded their targets for 2024-2025[9]. Over 49 million trees have been planted, and 2.8 gigawatts of renewable energy connected to the national grid, powering over half a million homes[10].

The challenging transition from a historic reliance on hydrocarbons towards a more sustainable future based on sustainable energy sources, more diversified economic structure and business models can be further strengthened by prioritizing the following suggested areas for action:

- Advancing the energy transition by accelerating renewable energy projects.
- Incentivizing business to become more resource efficient through environmental certifications.
- Expanding public transport networks and promoting the use of sustainable mobility options.
- Improving air quality by strengthening monitoring and enforcement mechanisms.

By addressing these areas and continuing to prioritize its green initiatives, Saudi Arabia might set new standards in sustainability, influencing practices both regionally and globally.

1 PWC (2024). Inside Saudi Arabia's Tech Leap: Nurturing homegrown innovation and investment. https://www.pwc.com/m1/en/media-centre/articles/nurturing-homegrown-innovation-and-investment.html
2 Ministry of Economy and Planning (2024). Saudi Minister of Economy and Planning delivers the Kingdom's address during the UN High-Level Political Forum on Sustainable Development 2024. https://mep.gov.sa/en/media-center/news/saudi-minister-of-economy-and-planning-delivers-the-kingdoms-address-during-the-un-hlpf-on-sustainable-development-2024
3 One planet SWF Network (2023. Framework Companion Document 2023. https://oneplanetswfs.org/wp-content/pdfjs/web/viewer.html?file=https://oneplanetswfs.org/download/185/jan-2024/3221/opswf-network_companion_doc_2024.pdf?lang=all
4 Green Hydrogen Innovation Center (2024). Saudi Arabia. https://isa-ghic.org/countries/saudi-arabia#:~:text=General%20Information&text=Saudi%20Arabia%20is%20a%20prime,yr%20by%202035%20(1)%20.
5 Saudi & Middle East Green Initiative (2023). Saudi Arabia announces 300% increase in installed renewables capacity, 43.9 million trees planted since launch of Saudi Green Initiative. https://www.greeninitiatives.gov.sa/knowledge-hub/saudi-arabia-announces-300-increase-in-installed-renewables-capacity-439-million-trees-planted-since-launch-of-saudi-green-initiative/?csrt=17408450312924313569
6 Saudi Infrastructure Expo 2024. https://www.saudiinfrastructureexpo.com/invest-in-saudi-arabia/
7 NEOM. https://www.neom.com/en-us
8 Saudi Infrastructure Expo (2024). https://www.saudiinfrastructureexpo.com/invest-in-saudi-arabia/
9 Saudi Press Agency (2024). Saudi Arabia's Vision 2030: Early Signs of Success. https://www.spa.gov.sa/en/N2089591#
10 Saudi & Middle East Green Initiative (2024). Saudi Arabia establishes annual climate action awareness day. https://www.greeninitiatives.gov.sa/knowledge-hub/saudi-arabia-establishes-annual-climate-action-awareness-day/?csrt=17408450312924313569

Introduction

Saudi Arabia has embarked on a strategic journey to become a leader in renewable energy. To redefine the global energy map and to shift the country's primary reliance on its vast oil and natural gas reserves towards a more diversified economic model, the Saudi Arabian government has launched a range of ambitious initiatives targeting the green transition. Moreover, some large Saudi businesses are also ahead of the curve and investing in visionary innovations to mitigate the impacts of climate change, while the majority of businesses are to be transitioned towards greener operational models.

It is critical for Saudi Arabia to shift towards a more sustainable future, anchored in green practices, as both its landscape and economy are highly vulnerable to the impacts of climate change. By 2050, if global emissions remain high, the country could see agricultural droughts become almost twice as common, an over 40-fold increase in the duration of heatwaves, and a 12.2% hit to GDP[11].

The Kingdom has accelerated its efforts to mitigate the impact of climate change and address the challenges that come with it. Its ambitious Vision 2030, the Public Investment Fund Program, and the Saudi Green Initiative (SGI) are making measurable progress. As of April 2024, eight years since Vision 2030 was launched:

- 87% of its 1,064 initiatives are completed or on track,
- 81% of key performance indicators are on target,
- 105 of the 243 indicators have exceeded their targets for 2024-2025[12].

The economic diversification towards non-oil activities reached an all-time high in 2023, contributing 50% of the nation's GDP. While non-oil exports fell short of the target for 2023 set out in Vision 2030, a figure of 24.1% still represents encouraging progress[13].

The achievements of the Saudi Green Initiative since its launch in 2021, are also promising[14]:

1. "2.8 GW renewable energy has been connected to the Kingdom's grid, generating energy equivalent to powering over 520,000 homes." An extra two million homes are to be powered with renewable energy to achieve the goal of 50% power generation capacity from renewables by 2030.

2. "49+ million trees and shrubs have been planted and 94,000 hectares of degraded land have been rehabilitated - equivalent to over 146,000 football fields."

3. "18.1% of land and 6.5% of marine environments in Saudi Arabia are under protection. More than 1,660+ endangered animals have been rewilded in Saudi Arabia's growing nature reserves."

Additionally, as of 2024, March 27 is marked as the Saudi Green Initiative Day annually to celebrate the country's efforts towards a greener future[15], while an animated character called Namour, an Arabian leopard, has been launched[16] to inspire young kids to be "environmental heroes" by acting to preserve nature and biodiversity.

> In Saudi Arabia, we understand that sustainable progress hinges on creating and capturing opportunities to improve the overall standard of living to enhance quality of life. We are taking a whole-of-economy, human-centric approach to unlocking our inherent potential, under Saudi Vision 2030.
>
> His Excellency Faisal F. Alibrahim, Minister of Economy and Planning, Kingdom of Saudi Arabia at the UN High-Level Political Forum on Sustainable Development 2024

11 G20 Climate Risks Atlas. https://www.g20climaterisks.org/saudi-arabia/
12 Saudi Press Agency (2024). Saudi Arabia's Vision 2030: Early Signs of Success. https://www.spa.gov.sa/en/N2089591#
13 Saudi Press Agency (2024). Saudi Arabia's Vision 2030: Early Signs of Success. https://www.spa.gov.sa/en/N2089591#
14 Saudi & Middle East Green Initiative (2024). Saudi Arabia establishes annual climate action awareness day. https://www.greeninitiatives.gov.sa/knowledge-hub/saudi-arabia-establishes-annual-climate-action-awareness-day/?csrt=17408450312924313569
15 Saudi & Middle East Green Initiative (2024). Saudi Arabia establishes annual climate action awareness day. https://www.greeninitiatives.gov.sa/knowledge-hub/saudi-arabia-establishes-annual-climate-action-awareness-day/?csrt=17408450312924313569
16 Saudi & Middle East Green Initiative (2024). Saudi Green Initiative Launches Namour to Inspire Environmental Awareness Among Youth and Children. https://www.greeninitiatives.gov.sa/knowledge-hub/saudi-green-initiative-launches-namour/?csrt=17408450312924313569

Key achievements from Vision 2030 and the Saudi Green Initiative (SGI) related to sustainability in Saudi Arabia

Saudi Green Initiative

Over
49 million
trees planted

Rehabilitation of
975 hectares
of agricultural terraces

192,400 hectares
of vegetation cover restored

Protected Areas

24.6%
Saudi territory is designated as nature reserves, of which **18.1%** is terrestrial and **6.5%** marine areas

Resettling Endangered Species

The Kingdom has successfully ensured the resettlement of
1,660
endangered animals and the birth of seven Arabian leopard cubs (critically endangered)

Clean Energy Leadership

With the export of clean ammonia to major markets like Japan and Europe, Saudi Arabia aims to become the world's largest hydrogen provider by 2030 with a target of
4 million tons
annually

Renewable Energy Integration

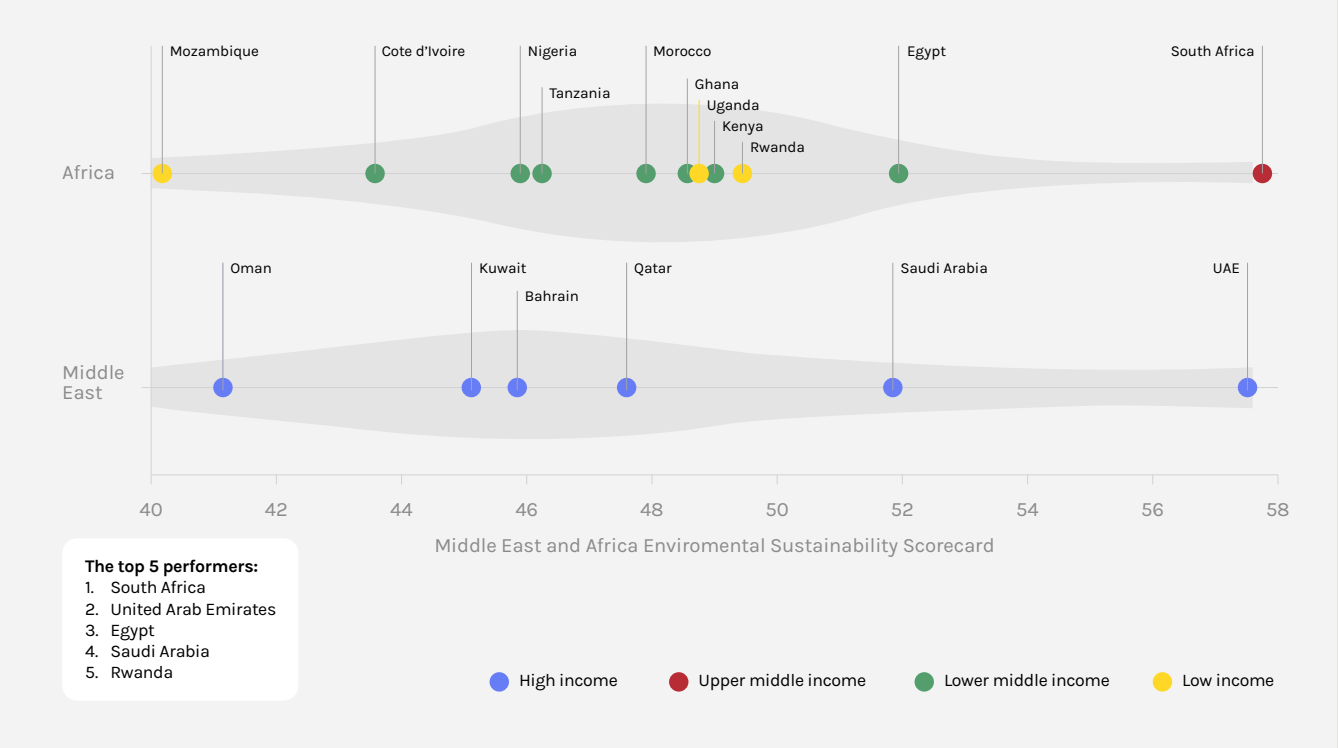
2.8 gigawatts
of renewable energy connected to the national grid, powering over half a million homes

Non-Oil Economic Shift

Vision 2030 is driving economic diversification, with non-oil GDP reaching
SAR 1,889 billion
(approximately $510 billion), showcasing the Kingdom's commitment to reducing reliance on fossil fuel revenues

Latest actions and progress from a solid base

Figure 1 Middle East and Africa Environmental Sustainability Scorecard 2023 results

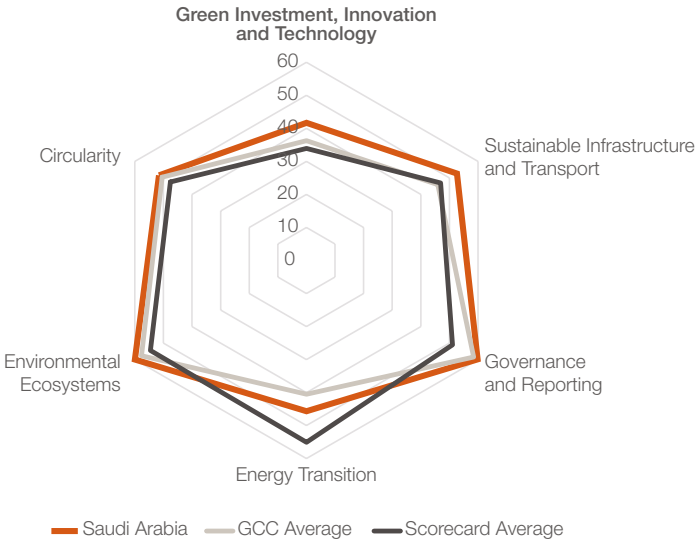


Note: Middle East and Africa Environmental Sustainability Scorecard results are based on six pillars. Scores range from 0 to 100, 100 being the best performer.
Source: MEA ESS (2023)

We are about to explore Saudi Arabia's emerging leadership in environmental sustainability in six areas: green investment, innovation and technology; sustainable infrastructure and transport; governance and reporting; the energy transition; environmental ecosystems; and circularity.

We begin by recapping the results of the Middle East and Africa Environmental Sustainability Scorecard (MEA ESS). The Scorecard is one of the most comprehensive available datasets, which captures public and private sector actions towards environmental sustainability for 17 countries in the Middle East and Africa, published in November 2023 by Agility, a leading global logistics company, in partnership with Horizon Group. Saudi Arabia emerged among the top performers (see Figure 1), with its performance reflecting both strengths and areas for improvement (see Figure 2). The following sections bring the Scorecard's insights up to date with reflections on Saudi Arabia's subsequent and ongoing activities.

Figure 2 Middle East and Africa Environmental Sustainability Scorecard 2023 results for Saudi Arabia

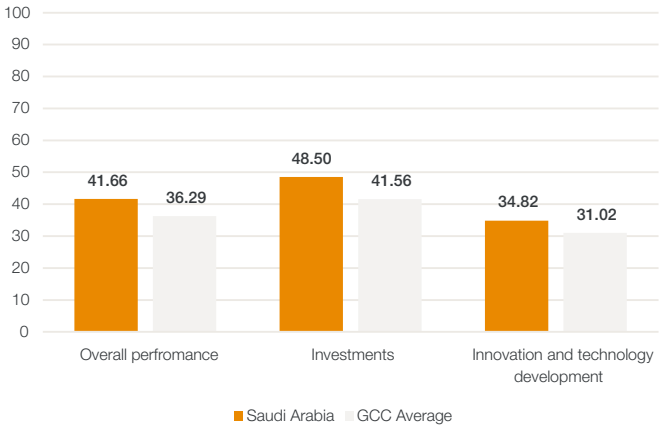


Note: Middle East and Africa Environmental Sustainability Scorecard results are based on six pillars. Scores range from 0 to 100, 100 being the best performer.
Source: MEA ESS (2023)

1) Green Investment, Innovation, and Technology

One of the biggest driving forces behind Saudi Arabia's advancement toward sustainability is its commitment to green investment, innovation, and technology. With a score of 41.66 in this pillar of the Scorecard, the Kingdom exceeded the regional average of 36.29. With a supportive policy environment, it performed well on both components of the pillar – investments, and innovation and technology development.

Figure 3 Results in Green Investment, Innovation, and Technology for Saudi Arabia 2023



Source: MEA ESS (2023)

The Public Investment Fund, Saudi Arabia's Sovereign Wealth Fund, is a leading economic catalyst towards the goals of the Vision 2030. It has been carrying out many developments in strategic investment operations, acquisition deals, infrastructure, and establishing strategic partnerships[17]. PIF completed two green bond issuances that resulted in $8.5 billion in 2023, to finance and refinance its green investments[18]. It is also the founding member of the One Planet Sovereign Wealth Fund (SWF) Network, an investor community, which targets to "increase the efficiency in global capital allocation, thereby contributing towards the smooth transition to a more sustainable, low-carbon economy[19]."

Under the Saudi Green Initiative, the government recently announced plans to invest over $180 billion in growing the green economy and becoming a leader in renewable energy[20]. Such strategic investments will play a foundational role in embedding sustainability deep into the fabric of the country's economy.

Saudi executives surveyed as part of the MEA ESS suggested that 54% of Saudi companies have made plans to introduce new green technologies and tools in their organization. These initiatives range from in-house research and innovation to co-designing green products and services, and collaborating with other companies, academics, and non-profits. Aramco, for example, has pledged $100 million to King Abdullah University of Science and Technology (KAUST) for research and development of economically profitable energy transition and sustainability solutions[21].

Under the Saudi Green Initiative, the government recently announced plans to invest over $180 billion in growing the green economy and becoming a leader in renewable energy

17 Public Investment Fund (2021). Public Investment Fund Program 2021 – 2025. https://www.vision2030.gov.sa/media/3bppamn4/2021-2025-public-investment-fund-program-delivery-plan-en.pdf

18 One planet SWF Network (2023. Framework Companion Document 2023. https://oneplanetswfs.org/wp-content/pdfjs/web/viewer.html?file=https://oneplanetswfs.org/download/185/jan-2024/3221/opswf-network_companion_doc_2024.pdf?lang=all

19 One Planet SWF Network (2024). https://oneplanetswfs.org/

20 Ministry of Economy and Planning (2024). Saudi Minister of Economy and Planning delivers the Kingdom's address during the UN High-Level Political Forum on Sustainable Development 2024. https://mep.gov.sa/en/media-center/news/saudi-minister-of-economy-and-planning-delivers-the-kingdoms-address-during-the-un-hlpf-on-sustainable-development-2024

21 Aramco (2024). Aramco plans $100m funding for KAUST to support cutting-edge R&D. https://www.aramco.com/en/news-media/news/2024/aramco-plans-$100m-funding-for-kaust-to-support-cutting-edge-r-and-d

Box 1: Saudi Arabia's innovation surge: uniting businesses and academics for a sustainable, future-ready economy

Figure 4 Introduction of new green technologies or tools by local companies over the next twelve months, Saudi Arabia executives' survey results 2023

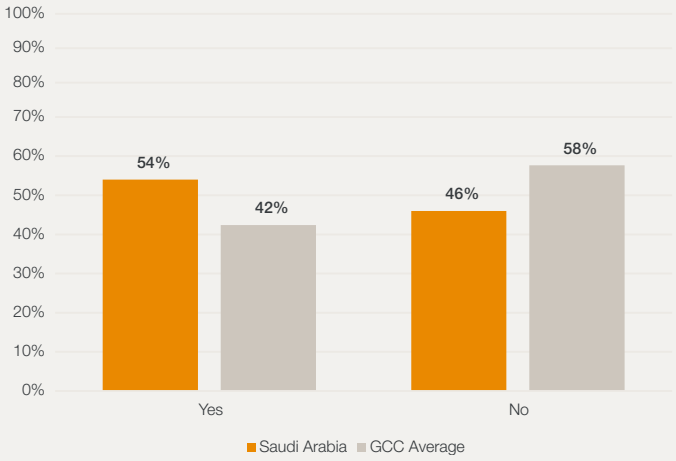


Figure 5 Collaboration with other companies in research and innovation for new green technologies or tools, Saudi Arabia executives' survey results 2023

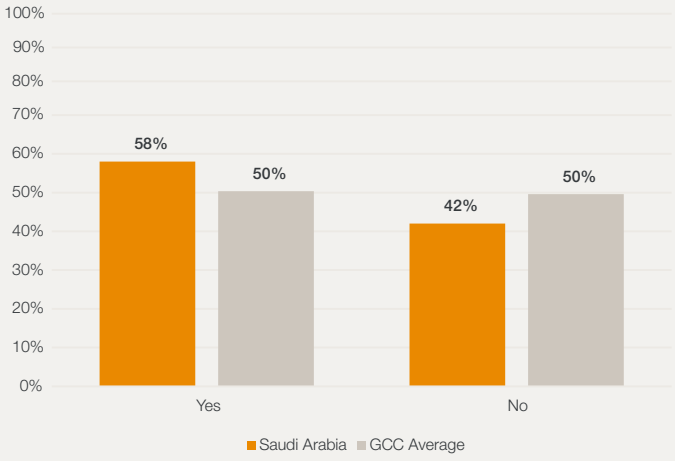
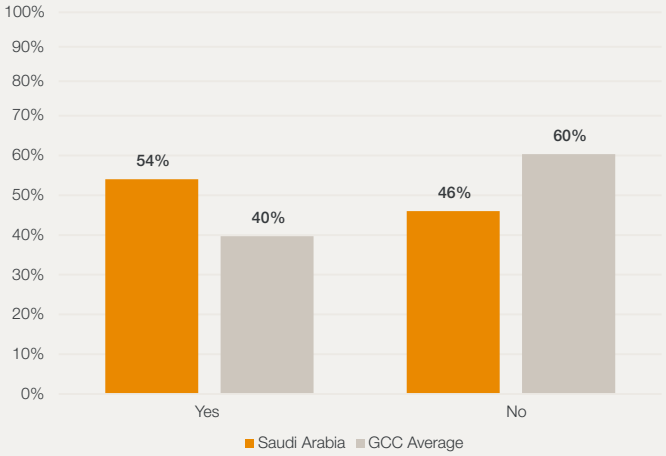


Figure 6 Collaboration with academic partners in research and innovation for new green technologies or tools, Saudi Arabia executives' survey results 2023



Source: Horizon Group Business Executives' Survey 2023

Encouragingly, the survey found that half of Saudi companies have allocated at least 5% of their capital expenditure towards achieving environmental sustainability targets. Another report[22] has since estimated that investors from Saudi Arabia account for 75% of investments from the Middle East to climate tech start-ups across the world: Middle Eastern players had invested $5 billion in climate tech, out of which Saudi investors accounted for $3.7 billion[23].

Mainstreaming sustainability across the country's businesses will be key towards progress. Only 28% of executives who responded to the survey considered climate change to be a significant business concern, with 40% seeing its impact as marginal.

22 PWC (2024). Inside Saudi Arabia's Tech Leap: Nurturing homegrown innovation and investment. https://www.pwc.com/m1/en/media-centre/articles/nurturing-homegrown-innovation-and-investment.html

23 PWC (2024). Inside Saudi Arabia's Tech Leap: Nurturing homegrown innovation and investment. https://www.pwc.com/m1/en/media-centre/articles/nurturing-homegrown-innovation-and-investment.html

Box 2: The estimated impact of climate change and environmental sustainability actions in Saudi Arabia

Figure 7 Climate change, Saudi Arabia executives' survey results 2023

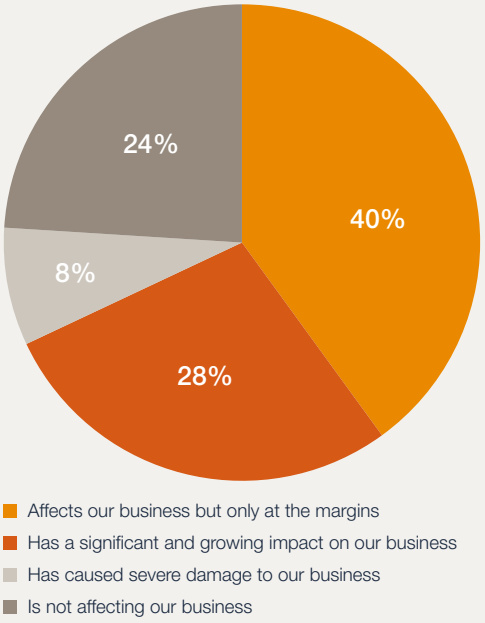


Figure 8 Share of capital allocated towards achieving environmental sustainability targets in the company, Saudi Arabia executives' survey results 2023

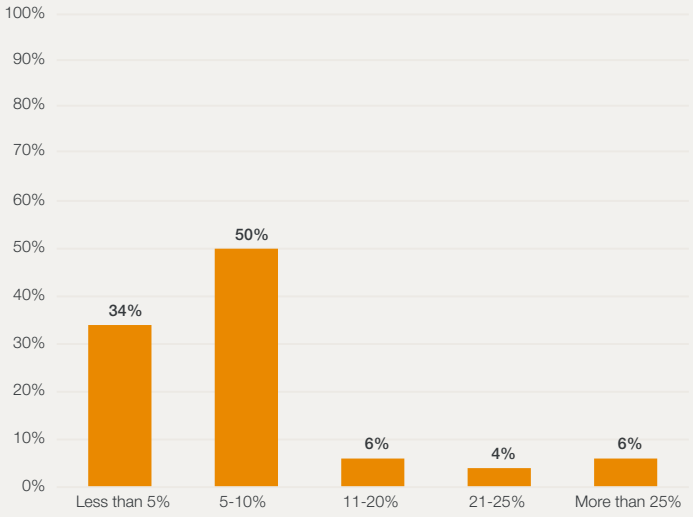
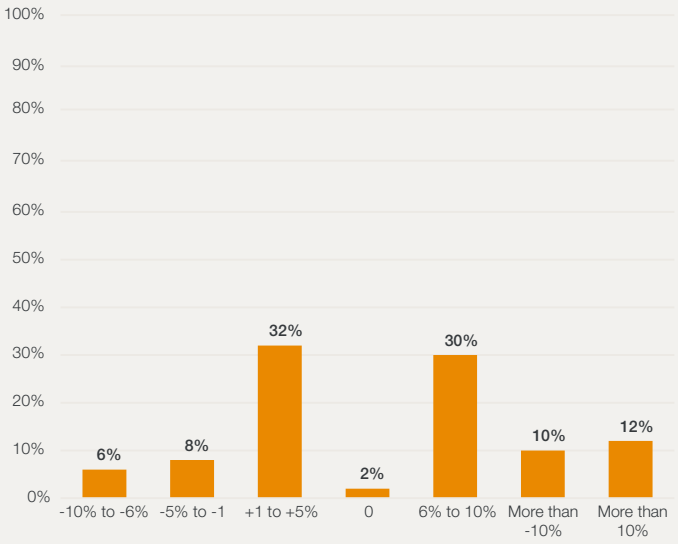


Figure 9 Expected change to company's operating costs in the next twelve months if acting to achieve all environmental sustainability-related targets, Saudi Arabia executives' survey results 2023



Source: Horizon Group Business Executives' Survey 2023

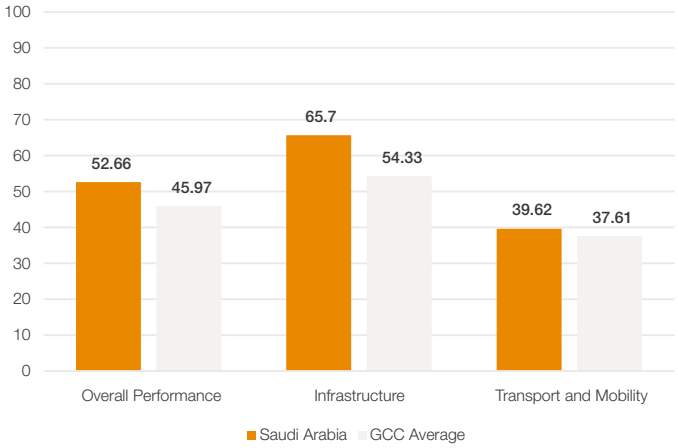
2) Sustainable Infrastructure and Transport

Sustainable infrastructure and transport form the building blocks for any country that aims to develop a greener and more environmentally sustainable society. Scoring 52.66 in this pillar overall, Saudi Arabia surpassed the GCC average in both the infrastructure, and the transport and mobility components.

Saudi Arabia continues to bolster its efforts to develop green-certified buildings, reduce greenhouse gas emissions from buildings, and maintain supportive national infrastructural policies. There is still an opportunity to strengthen business incentives and further intensify efforts in sustainable transport.

A series of infrastructural mega projects under Vision 2030 aim to propel the economy forward while embracing the principles of sustainability. For instance, ROSHN, a government-led real-estate development firm, recently announced a 45,000-seat stadium in Riyadh with efficient technologies for water and energy management and integration of solar panels[24]. The ultra-ambitious NEOM future city project aims to run completely on renewable energy[25]. The Red Sea Project seeks to balance environmental conservation with sustainable high-end tourism[26]. The Red Sea Global in partnership with Zain KSA, initiated the world's first zero-carbon 5G network at the Six Senses Southern Dunes resort at the Red Sea, powered by 100% renewable energy[27].

Figure 10 Results in Sustainable Infrastructure and Transport for Saudi Arabia 2023



Source: MEA ESS 2023

The Kingdom is also promoting public transport through the $23 billion Riyadh Metro project, covering 176km and 85 metro stations to carry 400,000 people every day in driverless trains. The Makkah Public Transport Programme will cover 180km and 88 metro stations to carry the millions of pilgrims who visit the holy city of Makkah (Mecca) each year[28].

The large number of infrastructure projects – estimated at $1 trillion[29] – suggest that sustainable infrastructure will improve in future.

Figure 11 List of Mega Projects in Western Saudi Arabia

Project Name	Project Value	Total Value of Commissioned Projects to Date	Total Area	Completion Date
NEOM	$500 Billion	$237 Billion	26,500 sq km	2030
RUA ALMADINAH	$37 Billion	$8.8 Billion	1.5 Million sqm	2030
JEDDAH ECONOMIC CITY	$30 Billion	$1.7 Billion	5.3 Million sqm	TBC
KING ABDULLAH ECONOMIC CITY	$27 Billion	$13 Billion	1.7 Million sqm	2028
RED SEA GLOBAL	$23.6 Billion	$21 Billion	28,000 sq km	2030-35
JEDDAH CENTRAL	$20 Billion	$4.5 Billion	5 Million sqm	2030
ALULA	$15 Billion	$6.5 Billion	22,500 sq km	2027
MASAR MAKKAH	$9.8 Billion	$8.34 Billion	1.38 Million sqm	2030
KNOWLEDGE ECONOMIC CITY	$8 Billion	$3.35 Billion	6.8 Million sqm	2025
THAKER MAKKAH	$7 Billion	$1.3 Billion	4 Million sqm	2030
JABAL OMAR	$5.6 Billion	$4 Billion	2 Million sqm	2026
MARAFY	$5 Billion	$400 Million	4 Million sqm	TBC
SHAMS AL AROUS	$2 Billion	$500 Million	863,000 sqm	2025
ROSHN	$1.9 Billion	$1.8 Billion	4 Million sqm	2026
SEVEN	$1.4 Billion	$400 Million	4 Million sqm	2026

Source: Knight Frank, MEED Projects

24 ROSHN (2024). ROSHN Announces Iconic 45,000-Seat Stadium in Southwest Riyadh. https://www.roshn.sa/en/news/ROSHN-Stadium
25 NEOM. https://www.neom.com/en-us
26 Saudi Infrastructure Expo 2024. https://www.saudiinfrastructureexpo.com/invest-in-saudi-arabia/
27 One planet SWF Network (2023. Framework Companion Document 2023. https://oneplanetswfs.org/wp-content/pdfjs/web/viewer.html?file=https://oneplanetswfs.org/download/185/jan-2024/3221/opswf-network_companion_doc_2024.pdf?lang=all
28 Saudi Infrastructure Expo 2024. https://www.saudiinfrastructureexpo.com/invest-in-saudi-arabia/
29 Saudi Infrastructure Expo 2024. https://www.saudiinfrastructureexpo.com/invest-in-saudi-arabia/

3) Governance and Reporting

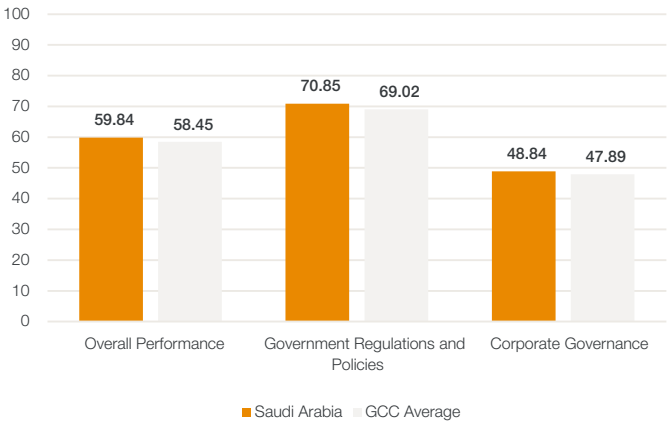
Governance and reporting are vital to sustainability because they provide the framework for accountability and transparency to ensure that environmental goals are met, both at the national and corporate levels. Saudi Arabia performed well in this pillar, scoring 59.84 – higher than the GCC average. It performed especially well in the government regulations and policies sub-pillar, achieving a score of 70.85, with corporate governance presenting an opportunity for improvement.

Sustainability is continuing to gain traction across the Middle East, with most companies incorporating ESG into their strategies and an increasing number of Chief Sustainability Officers being appointed. This momentum is particularly strong in Saudi Arabia, with growing interest in renewable energy and sectors such as oil, gas, and petrochemicals adopting new trends of sustainability. An increasing number of companies, e.g. the Saudi Arabian Oil Co., publish annual metrics on environmental impact, water consumption, hydrocarbon spillage, sulphur oxide emissions, and direct and indirect carbon emissions[30].

Ongoing government initiatives that contribute to ensuring sustainable business practices include the Greenhouse Gas Crediting and Offsetting Mechanism (GCOM)[31]. Aligned with the Nationally Determined Contributions (NDCs) submitted to the United Nations Framework Commission on Climate Change (UNFCCC), GCOM offers incentives to domestic entities to take action on reducing emissions to reach the Kingdom's Net Zero 2060 target. Saudi Arabia has also launched the Green Financing Framework to urge green project investments from both public and private ventures to climate and environmental finance[32]. The Public Investment Fund, due to its continuous efforts, increased its Governance, Sustainability and Resilience (GSR) score from 40% in 2021 to 92% in 2023, and jumped to rank #7 globally out of 100 Sovereign Wealth Funds assessed, being the best in the Middle East[33].

> Sustainability is continuing to gain traction across the Middle East, with most companies incorporating ESG into their strategies

Figure 12 Results in Governance and Reporting for Saudi Arabia 2023



Source: MEA ESS 2023

Box 3. Champions of Sustainability: Saudi Arabia's new era of corporate collaboration

Saudi Arabia's groundbreaking Sustainability Champions program aims to revolutionize corporate sustainability. Led by the Ministry of Economy and Planning, the program brings together 19 industry giants, including Saudi Aramco and SABIC, to share expertise across sectors and mentor other businesses in adopting sustainable practices. These "Champions" will drive the Kingdom's transition to a greener economy. A key part of Vision 2030, the program sets a new standard for corporate collaboration and environmental stewardship.

30 PWC (2023). Saudi Arabia's extraordinary approach to making sustainability commonplace. https://www.pwc.com/m1/en/media-centre/articles/saudi-arabia-extraordinary-approach-to-making-sustainability-commonplace.html

31 KSA Ministry of Energy (2024). Saudi Arabia Launches Groundbreaking Greenhouse Gas Crediting and Offsetting Mechanism to Advance Global Climate Goals. https://www.moenergy.gov.sa/en/MediaCenter/ClimateWeek/Pages/KSA-Launches-GHG-Crediting-and-Offsetting-Mechanism-GCOM.aspx

32 KSA Ministry of Finance (2024). The Kingdom of Saudi Arabia's Green Financing Framework. https://ndmc.gov.sa/investorsrelations/Documents/Green-Financing-Framework-KSA-16April2024.pdf

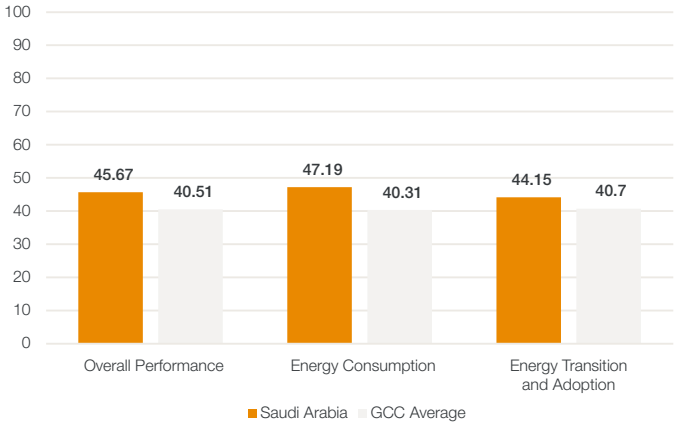
33 One planet SWF Network (2023. Framework Companion Document 2023. https://oneplanetswfs.org/wp-content/pdfjs/web/viewer.html?file=https://oneplanetswfs.org/download/185/jan-2024/3221/opswf-network_companion_doc_2024.pdf?lang=all

4) Energy Transition

Saudi Arabia's performance in energy transition is a story of progress with significant potential for growth, in light of its high dependence on hydrocarbons. With a score of 45.67, the Kingdom surpassed most of its GCC peers, but lagged behind the overall Scorecard average.

Saudi Arabia's score of 47.19 on capturing energy consumption exceeded the GCC average, showing the country's efforts in managing energy use more efficiently. The challenge remains in the broader shift towards a more diversified economic model and more sustainable energy sources, where a score of 44.15 for energy transition and adoption placed the country just slightly above the regional average.

Figure 13 Results in Energy Transition for Saudi Arabia 2023



Source: MEA ESS 2023

With the announced net zero target by 2060 and a goal to reduce carbon emissions by 278 million tonnes per annum (mtpa) by 2030, companies are preparing for the energy transition. The executives' survey revealed that 47% of Saudi businesses are actively targeting CO2 emissions reduction, compared to 45% across the GCC, while 57% are addressing other greenhouse gases such as methane and nitrous oxide – significantly outperforming the 39% GCC average.

Saudi Arabia has set out the ambition of producing 2.9 million tons of hydrogen annually by 2030 and 4 million tons by 2035, which would make it the world leader. Saudi Arabia is supporting clean energy solutions abroad by exporting blue hydrogen in the form of blue ammonia, used for energy generation, to countries including Japan, South Korea, China, Thailand, and Europe. It also has a preliminary agreement with South Korea to develop green hydrogen[34]. NEOM will include the world's largest green hydrogen plant, worth $8.4 billion[35].

The Ministry of Energy has launched a first-of-its-kind geographical survey project for renewable sites in the country, targeting a 300% increase in installed renewable capacity[36]. Saudi companies are installing 12,000 stations to measure solar and wind energy in regions of the country totalling 850,000 sq.km, an area roughly equivalent to the size of the UK and France combined. The nation's shift towards sustainable energy is additionally highlighted by the Sudair Solar plant project, with 3.3 million panels in the desert harnessing solar energy to power 185,000 homes[37].

> Saudi Arabia's performance in energy transition is a story of progress with significant potential for growth

34 Green Hydrogen Innovation Center (2024). Saudi Arabia. https://isa-ghic.org/countries/saudi-arabia#:~:text=General%20Information&text=Saudi%20Arabia%20is%20a%20prime,yr%20by%202035%20(1)%20

35 Saudi & Middle East Green Initiative (2023). Saudi Arabia announces 300% increase in installed renewables capacity, 43.9 million trees planted since launch of Saudi Green Initiative. https://www.greeninitiatives.gov.sa/knowledge-hub/saudi-arabia-announces-300-increase-in-installed-renewables-capacity-439-million-trees-planted-since-launch-of-saudi-green-initiative/?csrt=17408450312924313569

36 KSA Ministry of Energy (2024). The Ministry of Energy launches the unprecedented Geographical Survey Project for Renewable Energy Sites in the Kingdom of Saudi Arabia. https://www.moenergy.gov.sa/en/MediaCenter/News/Pages/Ministry-launches-groundbreaking-survey-for-renewable-energy-sites-in-Saudi-Arabia.aspx

37 New York Times (2024). Saudi Arabia Eyes a Future Beyond Oil. https://www.nytimes.com/2024/05/29/business/saudi-arabia-renewable-energy-solar-wind.html

5) Environmental Ecosystems

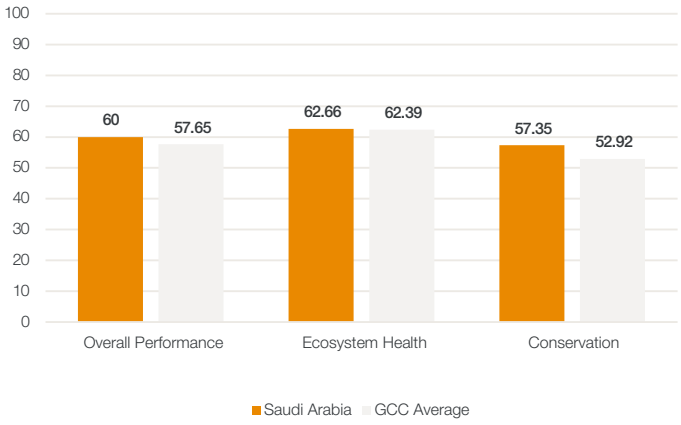
Maintaining the health of ecosystems is critical for preserving biodiversity, combating climate change, and supporting life on Earth. With a score of 60, Saudi Arabia surpassed most of its peers regarding the health of its environmental ecosystem and its conservation efforts.

Efforts underway include the Saudi Green Initiative, through which 43.9 million trees and shrubs have been planted and 94,000 hectares of degraded land restored; the goal for 2030 is over 600 million trees and 8 million hectares[38]. The government has also allocated 24.6% of the country's territory to natural reserves, of which 18.1% is terrestrial and 6.5% marine areas[39]. Saudi Arabia is set to advance itself further as a sustainability champion in the Middle East by hosting the 16th session of the Conference of the Parties (COP16) of the United Nations Convention to Combat Desertification (UNCCD) in December 2024. The event brings together governments, businesses, and civil society to discuss key challenges that impact land and provide sustainable solutions[40].

Saudi Arabia is highly vulnerable to climate change, with 95% of its terrain classified as desert and the remaining habitable and productive land at risk of degradation. The Kingdom's efforts to combat its climate challenges include the Middle East Green Initiative (MGI), with a budget of $2.5 billion to supports projects on promoting sustainable land management and restoring degraded lands[41]. Close to $3.2 trillion is projected to be used to finance blue economy projects that seek to protect oceans while maintaining sustainable growth[42].

To further drive innovation in this field, Vision 2030 has introduced specialized start-up accelerators, venture builders, and investment funds. Competitive funding for R&D is set to increase by 600% under the Research Development and Innovation Authority (RDIA)[43]. These efforts go a long way towards building resilience to climate change.

Figure 14 Results in Environmental Ecosystems for Saudi Arabia 2023



Source: MEA ESS 2023

> Saudi Arabia surpassed most of its peers regarding the health of its environmental ecosystem and its conservation efforts

38 Saudi & Middle East Green Initiative (2023). Saudi Arabia announces 300% increase in installed renewables capacity, 43.9 million trees planted since launch of Saudi Green Initiative. https://www.greeninitiatives.gov.sa/knowledge-hub/saudi-arabia-announces-300-increase-in-installed-renewables-capacity-439-million-trees-planted-since-launch-of-saudi-green-initiative/?csrt=17408450312924313569

39 Saudi Press Agency (2024). Saudi Arabia's Vision 2030: Early Signs of Success. https://www.spa.gov.sa/en/N2089591#

40 NCCD 16th session of the Conference of the Parties (2024). https://www.unccd.int/cop16#:~:text=The%20sixteenth%20session%20of%20the,we%20treat%20it%20like%20dirt."

41 World Bank (2024). Fostering a sustainable future: the role of land restoration in Saudi Arabia. https://blogs.worldbank.org/en/arabvoices/fostering-a-sustainable-future--the-role-of-land-restoration-in-saudi-arabia#:~:text=The%20Kingdom%20of%20Saudi%20Arabia,10%25%20of%20the%20Kingdom's%20land

42 World Economic Forum (2024). How Saudi Arabia is unlocking the power of the blue economy. https://www.weforum.org/agenda/2024/01/saudi-arabia-unlocking-power-blue-economy/

43 World Economic Forum (2024). How Saudi Arabia is unlocking the power of the blue economy. https://www.weforum.org/agenda/2024/01/saudi-arabia-unlocking-power-blue-economy/

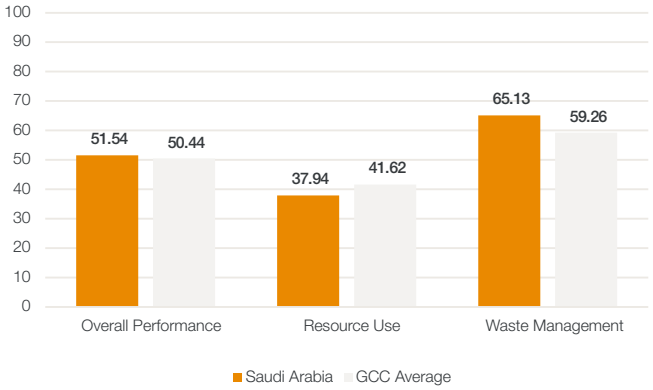
6) Circularity

Embracing circularity is essential to promote efficient use of resources and waste management, ensuring our consumption patterns protect our planet. Saudi Arabia's performance in circularity, with a score of 51.54, placed it above the GCC average. It showed strength particularly in waste management though with more room for growth in sustainable resource use.

The Circular Carbon Economy National Program[44] is boosting the Kingdom's performance in this area. Its strategic goals on removing carbon emissions, creating socio-economic benefits, and presenting the Kingdom as a leader in climate action all help promote responsible production and consumption.

A challenge remains in resource use in companies, which often do not have resource efficiency plans and environmental certifications. Nevertheless, the country as a whole has been making improvements.

Figure 15 Results in Circularity for Saudi Arabia 2023



Source: MEA ESS 2023

Box 4. Saudi Arabia has announced a bold plan to boost recycling to 95% and create 100,000 jobs

In a bold move towards a greener future, the Ministry of Environment, Water, and Agriculture has launched a plan to boost Saudi Arabia's recycling rate from around 3 to 4% at present to as high as 95%. This transformative plan, aligned with Vision 2030 and driven by the National Environment Strategy, aims to recycle 100 million tonnes of waste yearly through 65 initiatives. Supported by an investment of SAR55 billion (approximately $14.9 billion), it is projected to add SAR120 billion (approximately $32.4 billion) to GDP and create over 100,000 jobs.

By 2040, the Kingdom aims to divert 90% of waste from landfills through recycling, composting, and waste-to-energy projects. The government has also pushed for circular socio-economic practices through strong policy and regulatory frameworks, including its municipal waste management system[45]. By progressing on its responsible resource usage and waste management efforts, Saudi Arabia can continue to strengthen its sustainability impact.

> By 2040, the Kingdom aims to divert 90% of waste from landfills

44 Circular Carbon Economy National Program. https://www.cce.org.sa/Pages/Home.aspx
45 KSA National Center for Waste Management (2024). Strategic Master Plan Overview. https://mwan.gov.sa/en/strategic-plan

Conclusion: Pathways to a more sustainable Saudi Arabia

Saudi Arabia has clearly embarked on a journey towards a more sustainable future with shifts to sustainable energy sources, more diversified economic structure and business models. Recently the country has announced ambitious targets and initiatives, e.g. the Saudi Green Initiative.

While its performance in the Scorecard reflects the numerous sustainability initiatives carried out by both government and businesses as of mid-2023, subsequent advances have further accelerated the Kingdom's sustainability impact. In particular, Saudi Arabia's forward-thinking approach to economic diversification and climate mitigation and adaptation is reflected in its continued commitment to investing in clean technology, infrastructural megaprojects rooted in sustainability, and expansion of renewable energy use.

By prioritizing the following suggested areas for action, Saudi Arabia could further enhance its sustainability efforts:

- Advancing the energy transition by accelerating renewable energy projects.
- Incentivizing greater corporate resource efficiency through environmental certifications.
- Expanding public transport networks and promoting the use of sustainable mobility options.
- Improving air quality by strengthening monitoring and enforcement mechanisms.

As the Kingdom continues to refine its strategies and cultivate its path towards a green future, it is well on its way to not only meeting but potentially exceeding its ambitious Vision 2030 targets. By addressing areas of potential improvement and further expanding its green initiatives, Saudi Arabia might set new standards in sustainability, influencing practices both regionally and globally.

Acknowledgements

This white paper was prepared by Horizon Group, Switzerland, commissioned by Agility. The research team consisted of:

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Design and artwork: Links Design Ltd.

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