



مؤسسة الملك خالد
KING KHALID FOUNDATION

Sustainability Opportunities

in the Construction and Building Services and Products Sector

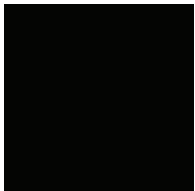


Discussion Paper
2023

Sustainability Opportunities

In the Construction and Building Services and Products Sector

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The digital version includes interactive links to the attached resources.

We Take Responsibility for our Business

We want to build a business sector that is not only satisfied with achieving financial profits, but also contributes to the advancement of its society and country, carries out its social responsibility, achieves the sustainability of the national economy, and provides suitable and stimulating job opportunities for our youth so that they can build their professional future. We will work to support the business sector that has responsibility for the country and companies that contribute to addressing national challenges.

From the text of the Declaration of
«Saudi Vision 2030»

Sustainable Development Goals

Ensure sustainable consumption and production patterns

12.6

Encourage companies, especially large and transnational companies, to adopt sustainable practices and integrate sustainable measures into their reporting cycle.

12 Responsible consumption and production



Goal 12
From the Sustainable Development Goals
(the sixth goal)

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What are the ESG Sustainability Practices?



Responsibility for the Environment

- ▼ Reduce gas emissions
- ▼ Increase green areas
- ▼ Provide care for natural wealth
- ▼ Achieve energy efficiency



Social Development

- ▼ Provide decent job opportunities
- ▼ Make investments in innovative initiatives to address social challenges
- ▼ Volunteer and support non-profit organizations
- ▼ Maintain occupational health and safety



Good Governance

- ▼ Maintain transparency and disclosure
- ▼ Manage risks
- ▼ Engage stakeholders
- ▼ Promote anti-corruption procedures

Introduction

In 2018, King Khalid Foundation held the first developmental dialogue on sustainability practices with the private sector, during which the Foundation presented a discussion paper titled: How do we stimulate sustainability practices in the private sector which was widely attended by business leaders in the Kingdom, decision-makers and specialists. The discussion addressed the concepts of environmental, social and governance (ESG) sustainability practices and ways to stimulate more disclosures about the environmental and social impact of private sector facilities and their relationship with society and stakeholders, including consumers, employees and owners.



Today, the Foundation holds its second developmental dialogue with the private sector, specifically with one of the most influential and significant sectors in the national economy, which is the building and construction services and products sector, to discuss prospects for sustainability practices in more detail at the sectoral level.

Why the building and construction sector?

The best way to select priority sectors in sustainability is to consider their economic, social and environmental impact. Therefore, the first sector that comes to our minds is the building and construction services and products sector, because it is the most influential market in terms of sustainability standards and one of the highest sectors that contribute to the Saudi Vision 2030 and the future of the Saudi economy. In this paper, we review the aspects of this sector's impact on the environmental, social and economic aspects of life in order to accommodate its priority in the sustainability agenda.



Review of the discussion paper:

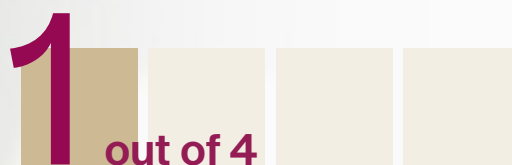
How do we stimulate sustainability practices in the private sector?



1

The Socio-Economic Impact

The sector constitutes the largest share of the Saudi labor market, and therefore it is the most employing sector in the Kingdom. By the end of 2022, the records of the General Organization for Social Insurance indicated that it is the most effective sector in employment. Almost 2.5 million employees out of 9.9 million employees registered in the General Organization for Social Insurance's system belong to the construction sector, constituting a quarter of employees in the private sector.¹



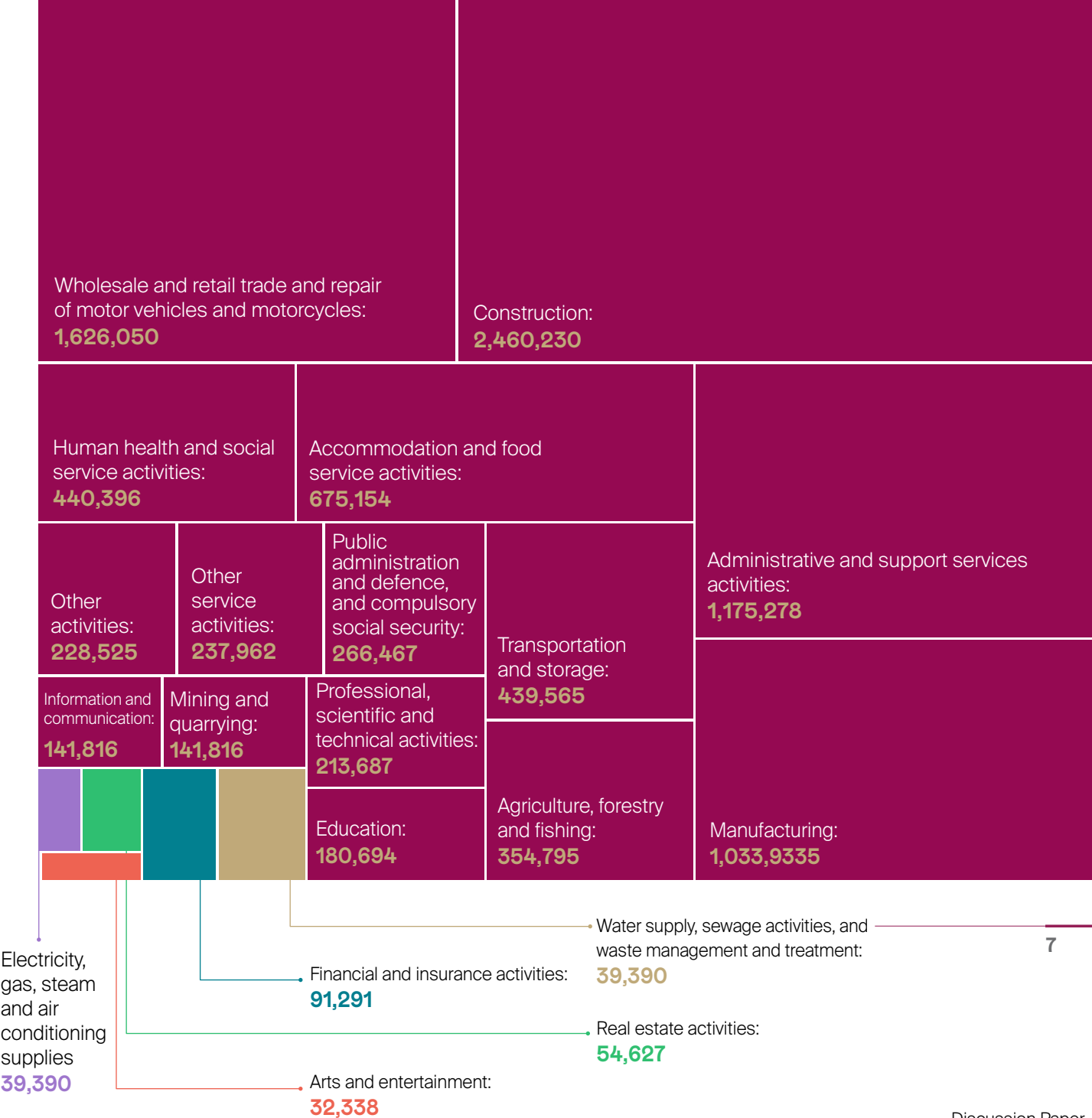
employees in the private sector work in the building and construction field

1. Recorded statistics of the labor market for the fourth quarter of 2022, the General Authority for Statistics, based on the data of the General Organization for Social Insurance

Sustainability Opportunities in the Building and Construction Services and Products Sector



Employees Registered with the General Organization
for Social Insurance by Sector at the end of 2022



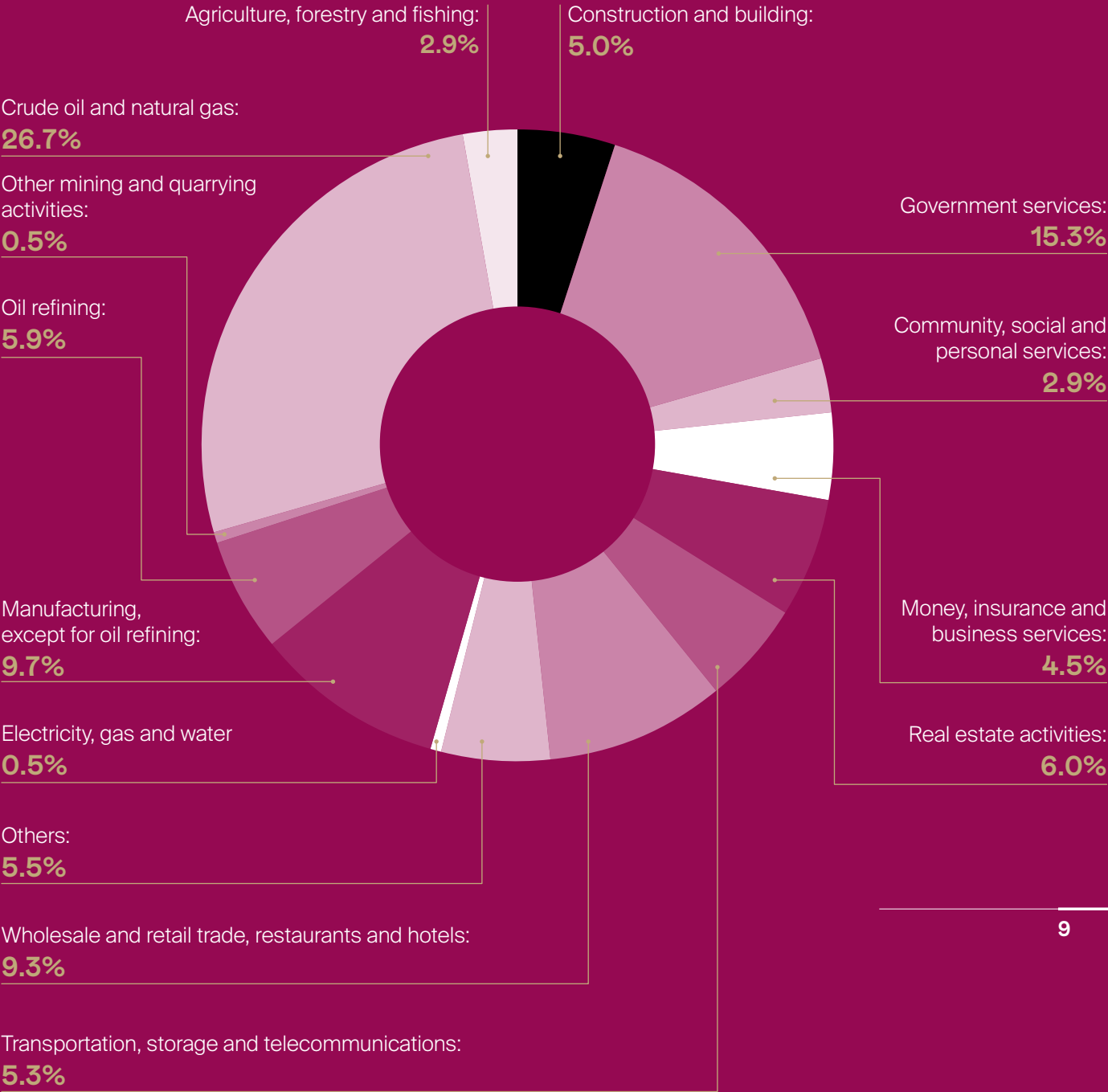
Construction activities also contribute 5% to the Saudi GDP, with a value equivalent to SAR 50 billion during the first quarter of 2023 only. This sector is closely linked with other sectors, due to the services it provides in response to the expansion of capital spending in the oil, industrial, logistical and future economies in the Kingdom, including real estate, urban development, trade, tourism and culture activities. The growth of other economic activities contributes to the increase in demand for building and construction services and products.

The sector is considered to be one of the expanding growth engines, as planned in the Saudi Vision 2030 and its executive programs. Major contracts worth SAR 4 trillion have been awarded since 2016, driven by unprecedented growth due to the demand from plans to build more than 550,000 housing units, more than 275,000 hotel units, and more than 10.4 million square meters of retail and office space³, in addition to the demand from the expansion of industrial facilities, mining and logistics facilities (such as airports, ports, railways and special economic zones), environmental projects (such as the ambitious projects in the Saudi Green Initiative), and infrastructure projects (such as renewable energy projects, municipal services and smart cities).⁴

His Excellency the Minister of Investment recently stated that the volume of spending in the construction and building sector by this year exceeded SAR 637 billion annually, and that we are still at the beginning of an upward phase that will reach more than SAR 806 billion by 2030.



Relative contribution of economic activities to GDP (%)



The Environmental Impact

Construction and demolition waste (especially random and unauthorized ones) is one of the biggest threats to environmental sustainability in the Kingdom, due to its negative effects on the environment and wildlife, air pollution, and the loss of habitats as a result of the degradation of the natural plant cover, urbanization and roads, harmful outfalls in seawater and their effects on the coastal environment in the Red Sea and the Arabian Gulf.

Unregulated construction operations, such as dredging, landfilling, and dumping of liquid and solid waste cause negative repercussions that have led to the deterioration of the coastal and marine ecosystems in the Kingdom. All of which could have been avoided had construction projects been more concerned with environmental impact and adopted appropriate sustainability practices.

The Kingdom used to incur huge annual costs as a result of environmental degradation in the past, which was remedied by the Saudi Vision 2030, the National Environment Strategy, and the Saudi Green Initiative. In 2014, a World Bank study estimated the cost of environmental degradation on the national economy at SAR 86 billion annually, or the equivalent of 3% of the GDP.⁵

The construction sector is also one of the most influential on energy efficiency and consumption in the Kingdom. The sector contributes to the construction of buildings, which in turn consume 29% of the primary energy consumed in the Kingdom. In addition, the sector represents a huge demand for resources and requires high consumption-intensive inputs, especially cement and iron. These types of products constitute a global challenge in the future of facing climate change and the world's ability to reach zero neutrality, as cement production causes 7% of global greenhouse gas emissions⁶, while iron production is responsible for 9% of greenhouse gas emissions.⁷



The total annual cost of environmental degradation

The total annual cost of environmental degradation amounted to SAR 86 billion in 2014, equivalent to 3% of the GDP.

The main causes of environmental degradation:



The deterioration of health and quality of life represents

%48

of the total damage

(equivalent to 1.5% of GDP).

The deterioration of natural resources represents

%52

of the total damage

(equivalent to 1.6% of GDP).

The cost of environmental degradation in 2014 (SAR billion)



* Global damage associated with climate change include floods, droughts, sea level rise, decreased food production, species extinction, migration, etc.

Governance and National Priorities

Sustainability has been at the heart of the Saudi Vision 2030 since its launch. Today, Kingdom initiates a new era by announcing its objective to reach zero neutrality by 2060. This announcement comes within the framework of the Vision's broader ambitions to accelerate the transition to clean energy, achieve sustainability goals, and lead a new wave of investments in this field.



National Standards for Sustainability

وزارة التجارة
Ministry of Commerce



In 2020, the Ministry of Commerce issued the **"National Standards for Sustainability"**, which are the criteria for preparing sustainability reports for companies. The Ministry, through these standards, stimulates the practices of disclosing the environmental, social and economic impacts of the activities of the Saudi private sector. The important transparency of these reports and being a source of information related to companies' performance in a way that demonstrates the true performance compared to goals and aspirations constitute an important mechanism for monitoring the development and achievement of the Sustainable Development Goals at a national level. The standards provide basic requirements, which together constitute the mandatory disclosures that companies that prepare sustainability reports in accordance with the Saudi national standards must disclose according to the Comply or Explain Approach. In the event of non-disclosure of the standards, the company shall provide a mandatory explanation for such non-disclosure of each standard.

The disclosures - one of the first recommendations of the first dialogue held by King Khalid Foundation - aim to enable companies, shareholders, boards of directors, employees, customers and consumers to notice the social, environmental and economic impact of the company's activities in a transparent manner, and to support them with the necessary information to exercise their roles and responsibilities for enhancing the company's environmental, social and economic performance.

The number of Saudi companies publishing sustainability reports increased from 14 in 2015 to 110 in 2021.⁸

110
Saudi
companies
published sustainability
reports in 2021

8. Report of Indicators of Sustainable Development Goals
(Indicator 12.6.1), the General Authority for Statistics.





The Saudi Building Code

was launched in

2018

Saudi Building Code

The National Committee for the Saudi Building Code aims for the Code to be a scientific and engineering reference at the national and regional levels, and to be one of the most important national means to improve the safety of buildings, rationalize energy and achieve sustainability for our national projects, to reflect positively on the components of the building and construction sector, including its governmental and private institutions, consulting companies, the contracting sector and consumers. The Code covers the minimum conditions and requirements for building and construction to ensure safety, public health and sustainability.



According to the National Committee for the Saudi Building Code, the matter is becoming increasingly important in the Kingdom of Saudi Arabia due to its geographical nature and the different climates in its different regions, including a desert climate in the interior and high humidity in areas near the sea. The Kingdom is also characterized by intense heat in most seasons, its soil that contains a high percentage of harmful salts, and the seismic phenomena in some coastal areas. Such factors and many others clearly affect the safety and sustainability of facilities and the protection of citizens. Therefore, the Building Code is important to raise the quality of construction and sustain the Saudi economy by ensuring the safety of facilities and their residents and setting requirements that determine the foundations of correct studies and methods appropriate to the conditions and capabilities of the Kingdom, which helps and enables engineers, technicians and citizens to carry out their work properly and securely.⁹



Public Investment Fund



Today, the contracting sector is undergoing radical transformations with the transition of programs and projects of the Saudi Vision 2030 to the implementation and realization phase, the most important of which is pumping in new investments and imposing appropriate governance that guarantees the sustainability of national companies operating in the field of construction and building, especially after the acquisition of a number of leading companies by the Public Investment Fund. The Saudi Vision 2030 Program of the Public Investment Fund has considered the building and construction services and products sector as one of the priority sectors, and launched the initiative of “Strengthening the Kingdom’s Position as a Leading Country in the Construction and Building Services Sector to Support the Aspirations of the Fund’s Real Estate Projects.” The Fund works on this by securing supply chains and focusing on strategic products and services, heavy equipment, concrete, cement, tiles and other basic industries.¹⁰

The Fund worked on many promising projects in the field of waste management, such as the establishment of the Saudi Investment Recycling Company (SIRC), which will contribute to achieving the Kingdom’s goals by removing approximately 94% of municipal solid waste from landfills by 2035, according to the targets of the Saudi Green Initiative. The Company also made an important achievement in 2019 by acquiring Global Environmental Management Services “GEMS”, so to grow its business in the area of management of hazardous industrial waste. SIRC recently completed the construction of several stations for the recycling of construction and demolition waste in Riyadh.¹¹

The Saudi Vision 2030 works on a set of ambitious goals that will boost demand, in an unprecedented way, for construction products and services, including increasing the capacity for pilgrims, expanding the percentage of citizens owning homes, making huge infrastructure investments in Saudi cities, and restructuring the health, social and educational care sectors.

%94
of solid waste
will be removed from
landfills by 2035
through recycling
solutions.

Shareek Program



برنامج تعزيز الشراكة
مع القطاع الخاص
PRIVATE SECTOR PARTNERSHIP
REINFORCEMENT PROGRAM

In 2022, His Royal Highness Prince Mohammed bin Salman, Crown Prince of Saudi Arabia, inaugurated the Private Sector Partnership Reinforcement Program “Shareek”, marking the leap in capital investments that the Kingdom will witness, led by the Public Investment Fund and the National Investment Strategy, with a total cost of SAR 12 trillion until 2030.¹²

10. Public Investment Fund Program 2025, the Saudi Vision 2030



11. The most prominent projects of the Public Investment Fund



12. News of the launch of the Private Sector Partnership Reinforcement Program, CNBC Arabia



المركز الوطني لتنمية
القطاع غير الربحي
National Center for
Non-Profit Sector



Saudi Non-profit Sector

46

**NGOs and
community
associations** working in
the construction industry

More than 46 NGOs and community associations operate in the construction and building industry, most of which are in the field of developmental housing, in addition to specialized scientific, professional and service associations operating in urban sciences, design, engineering services, restoration and development, and real estate brokerage. A group of associations are active in the construction and building work directly to fulfill the needs of the lower-income groups of economic housing units, and employ engineers and technicians specialized in architecture, construction and implementation. However, most associations still lack support, funding, and empowerment, and suffer from poor partnerships with the private sector.

SCA

الهيئة السعودية للمقاولين
Saudi Contractors Authority

Saudi Contractors Authority (SCA)

The work of the Saudi Contractors Authority was launched, which aims to advance the building and construction sectors to enable the next era of urban renaissance in the Kingdom in a sustainable manner. The Authority worked on a study to transform the contracting sector into an industry in line with the orientation of the Ministry of Municipal and Rural Affairs and Housing in modern and sustainable construction techniques, and projects of the Public Investment Fund in bringing off-site construction technology to the Kingdom.

Saudi Aramco



Leading Saudi companies lead the global research and development field in building and construction technologies. The Saudi private sector companies make huge investments in implementing decarbonization solutions for construction products and materials. This included Saudi Aramco's establishment of a center of excellence in non-metallic building materials in the United States of America in cooperation with the American Concrete Institute and another center of excellence in innovations and technologies for non-metallic solutions in building and construction in China in cooperation with China Building Materials Academy.



Saudi Aramco bets on the ability of non-metallic products and polymers to provide innovative applications in building and construction, including the product of rebar made of Glass Fiber Reinforced Polymer (GFRP) to be used as an alternative to traditional steel rebars. The Company already recently built a 22-kilometer concrete channel to ward off floods and drain rainwater in Jazan Economic City, by using GFRP rebars for the concrete instead of steel rebars, making it the world's largest project using new non-metallic materials. These innovations are distinguished by their low cost of purchase and installation compared to traditional rebars, consumption of much less materials compared to steel bars, less human resources, fewer materials required for their extension, resistance of corrosion resulting from water and chemicals, and reduction of carbon dioxide emissions.¹³

Non-metallic solutions applications are a sustainable alternative to building inputs.

13. **Saudi Aramco expands the adoption of non-metallic materials in its construction,**
Saudi Aramco



سابك
sabic

SABIC



One of the pioneering national initiatives in this field is SABIC's "Home of Innovation" Initiative. It is a place and a program at the same time. The building, having received the first platinum-class LEED certification in the Middle East, is one of the most sustainable buildings in the Kingdom, and the program it encompasses is a key SABIC growth initiative that combines marketing, innovation and technology to bring together global and local partners, advance local development, and support the National Industrial Strategy and the Saudi Vision 2030.

The Saudi private sector bets on research and development opportunities in sustainable building applications.

The initiative highlights the building materials sector in order for the new materials and technologies to replace traditional methods, thus enabling smarter and greener buildings. SABIC believes that the steady growth of the population means an increasing need for places to live, work and learn; however, these needs should be met in addition to the need for buildings to be efficient in terms of space, energy use and cost. The initiative is in line with national priorities and the Saudi Vision 2030, starting from advanced building materials, electromechanical systems, high-performance thermal insulation combined with effective air conditioning systems, to 3D printing, all of which are accomplished using the latest technologies in the field of information modeling and project management, and aim to help in making future cities bigger, better and most importantly integrating them with sustainability.¹⁴



NEOM

NEOM identified the building, construction and design sector as one of the priority sectors, through its endeavor to integrate technology into the building, construction and design operations at all its stages, leading to sustainability applications in building and construction and ensuring the reduction of emissions and waste in the construction phase of cities and regions within NEOM.¹⁵

Today, the building and construction sector is initiating a new phase of change to be compatible with the challenges of the twenty-first century and global aspirations regarding the goals of zero neutrality and the sustainability goals set by the Saudi Vision 2030 and the Saudi Green Initiative.



Sustainable Building Program

The program is one of the initiatives launched by the Housing Program under the supervision of the Ministry of Municipal and Rural Affairs and Housing. It is concerned with verifying compliance with sustainability standards in residential and commercial buildings and neighborhood communities, raising the efficiency of energy and water consumption and improving the quality of life. The program issues guides on sustainable building and ways to continuously examine it.¹⁶



National Center for Environmental Compliance

It is the center concerned with monitoring compliance with environmental laws and standards. This includes setting and preparing environmental standards and regulations to achieve maximum benefit from and protect environmental resources from degradation. In addition, the main competences of the Center are to issue permits and licenses for environmental activities, especially the environmental permit for construction after completing the classification and evaluation of the activity and the environmental impacts expected from each project with an environmental impact, and to determine the environmental conditions and requirements that are essential to be adhered to during the construction phase. According to the implementing regulations for environmental permits for the establishment and operation of activities, the Center requires the preparation of environmental impact assessment studies and an environmental impact management plan for activities with a high potential for environmental impact.¹⁷



15. Construction and design sector, NEOM



16. The Program's official website



17. National Center for Environmental Compliance

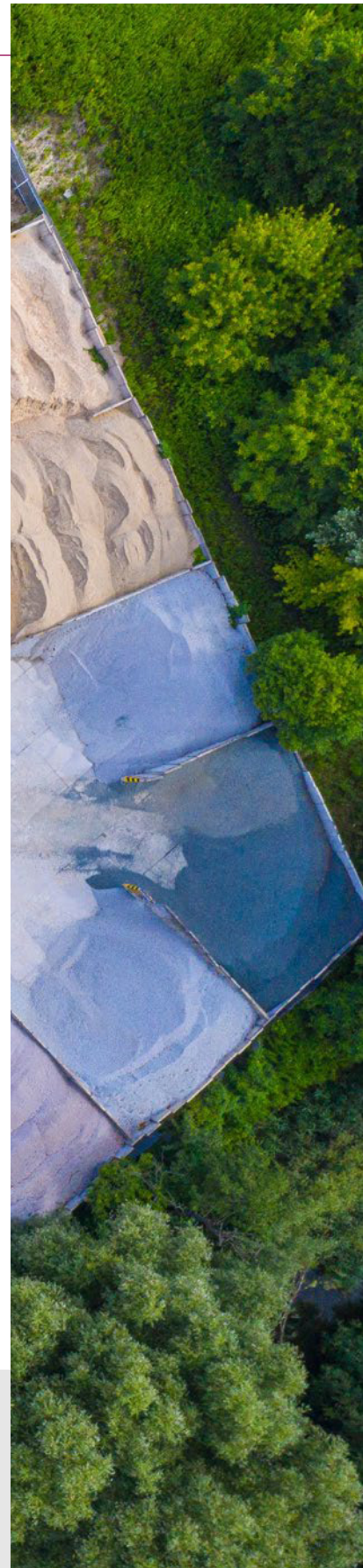


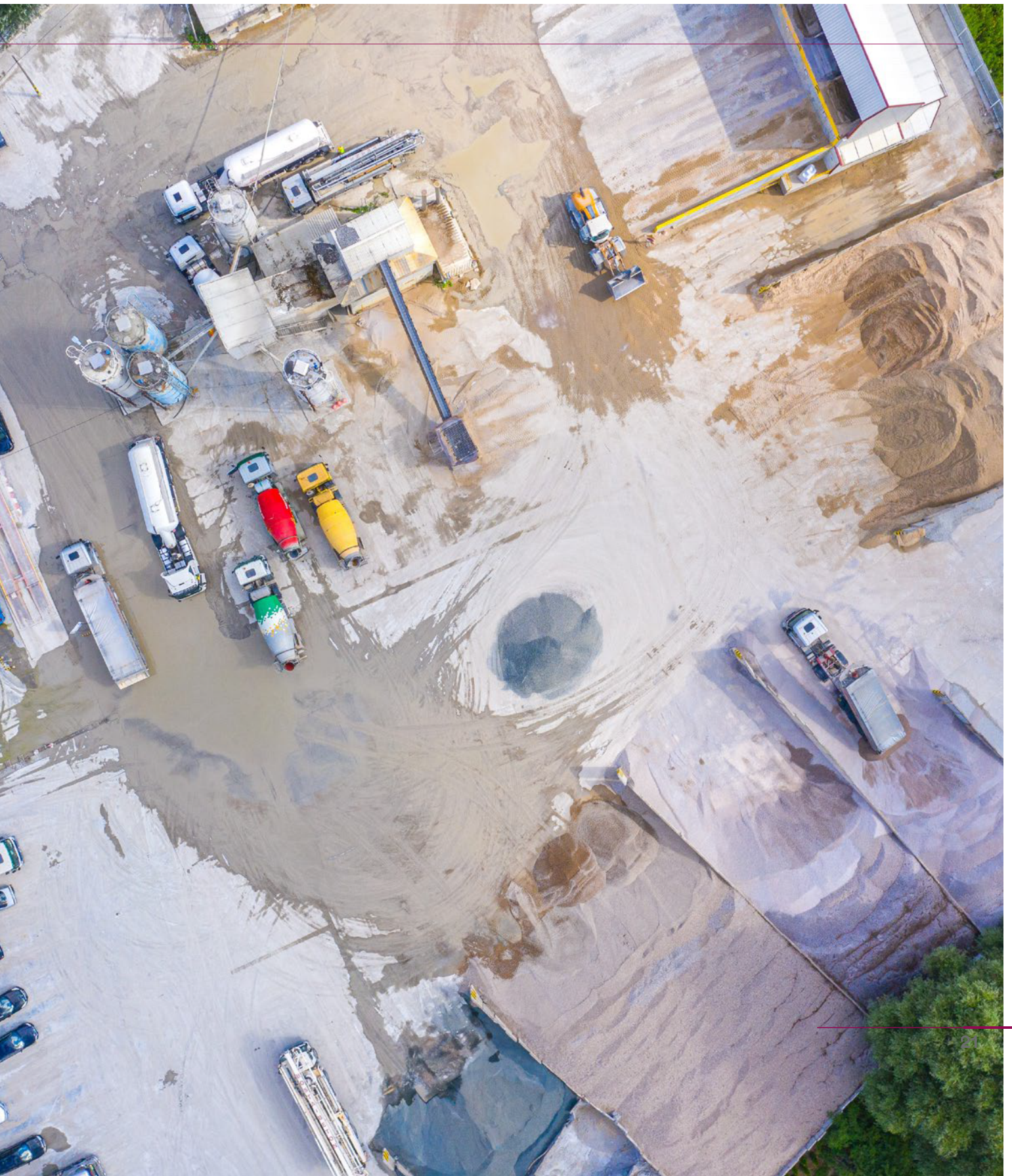
Some International Best Practices for Sustainability in Building and Construction

- ▼ Establish a long-term strategy that considers sustainability in every process from project start to end
- ▼ Implement sustainable design, engineering and construction practices supported by relevant data to track, measure and reduce emissions and waste throughout the project lifecycle
- ▼ Use logistics processes that optimize deliveries to reduce miles, emissions and carbon footprint
- ▼ Operate assets and equipment in an energy-efficient manner that is safe for the environment and manpower¹⁸
- ▼ Control waste management, such as waste separation and recycling
- ▼ Use sustainable and recycled materials
- ▼ Implement adaptive reuse projects that reuse old buildings
- ▼ Reduce the use of building materials to reduce waste.¹⁹

18. Forbes (2021), The Construction Industry Is Getting Greener: Why, How, And What's Changing?

19. Methods and benefits of sustainable construction





Discussion Questions

In light of the economic, social and environmental impact of the building and construction products and services sector, the rapid growth of the sector monitored in the Saudi Vision 2030 projects, and the environmental orientations of the Saudi Green Initiative, this paper was prepared to support the dialogue on the sustainability of the building and construction sector, and ends by asking the following questions:

1

How did the National Standards for Sustainability, the Saudi Building Code, and sustainability reports and practices contribute to motivating the sector to put sustainability practices into practice and implementation during the past years?

2

2. What are the challenges facing the sector in moving towards more sustainable and socially responsible practices in its activities?

3

3. What are the directions and future plans to achieve a radical and comprehensive transformation in sustainability within the construction and building products and services companies and at the level of the entire sector?

4

4. What is the status of cooperation in social responsibility between construction services and products companies with the non-profit sector in the Kingdom, especially housing associations?

