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# AL KHOBAR

Moving Smartly from Wells to Well-being

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## INTRODUCTION



# 1. INTRODUCTION

The beautiful Saudi city of Al Khobar started life as a fishing and pearling village, but it soon became a major hub for the oil industry after the discovery of a crude oil well there in 1938. It was the first city in Saudi Arabia to implement a smart city plan back in 1947. A grid layout and a network of streets was born.

Today, the cities of Al Khobar and Dhahran<sup>1</sup> are, combined, home to over 803,000 people, many of whom are young and well-educated. The city has a strategic location on the Arabian Gulf, facing Bahrain and other neighboring countries. It could not be better positioned to create prosperity for its citizens: it hosts the headquarters of the country's national oil firm Saudi Aramco, King Fahd University of Petroleum and Minerals – the top university in the Arab world – and several global service companies and research centers including Dhahran Techno Valley. As Saudi Vision 2030 is implemented, the city is also diversifying its economy away from oil to alternative energy sources and innovation, while simultaneously opening up to tourism and investment.

Al Khobar is developing a smart city strategy under the guidance of Saudi Vision 2030 and the Ministry of Municipalities and Housing. The city is implementing smart solutions for mobility, parking, public services, businesses, administrative services, citizen engagement, environment, waste management, land surveying, disaster management, and utilities and infrastructure management. Alas, the city faces its challenges; among them urban sprawl, traffic congestion in specific locations, and a lack of affordable housing.

The city's challenges are as manifold as its opportunities. Al Khobar is a city with a vibrant culture and quality of life, known for its livability, tourism, and entertainment. The city has a rich cultural heritage, as seen in its historical landmarks, such as the Al Khobar Old Downtown, Water Tower, and King Khalid Street. The city also offers a variety of recreational activities, such as the Corniche, the King Abdulaziz Center of Culture, the Sharqia Center for Science and Technology (Ithra), and the Prince Sultan Science and Technology Center (Scitech). The city is also enhancing its public health and safety with

online platforms, telemedicine, and smart surveillance systems.

Al Khobar is pursuing its vision for the future, with ambitious goals for environmental sustainability, social transformation, and economic diversification. Thanks to the impulse of Saudi Vision 2030, most of the cities in the country including the city of Al Khobar have ambitious greening and environmental programs. Al Khobar is planting trees, reducing carbon emissions, promoting renewable energy, and combating climate change. The city is also empowering its citizens – especially women and young people – to participate in sports and the workforce, the volunteering sector, and decision-making processes. The city is also attracting investments in research, real estate, logistics, and tourism, as well as fostering public-private partnerships – notably in oil, gas, mineral, and energy research, alongside entertainment. This is driving economic development and energy transition.

On the other hand, competition to attract talent and investments from other Saudi and overseas cities motivates the municipality to move faster and better. In the coming decades, Al Khobar will have to address its citizens' major concerns: the unaffordability of housing solutions, traffic congestion in certain areas, and the sparse availability of public transport services. Solving these problems would position Al Khobar as one of the smartest cities in the world.

<sup>1</sup> Serving as both a city and a governorate, Al Khobar encompasses Dhahran which is located just 10km from its historic center.

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**BACKGROUND**

## 2. BACKGROUND

### 2.1 Al Khobar: a smart city since 1947

Al Khobar is among the key cities in the Eastern Province of Saudi Arabia, alongside Dammam, Al Jubail, Al Ahsa, Abqaiq, and Ras Tanura.

The cities of Al Khobar, Dhahran, and Dammam (Figure 1) are inextricably linked, having worked together to serve the oil industry for the past 86 years. Each city has developed organically, however, playing a unique functional role within the greater Dammam metropolitan area. Although the first port was in Al Khobar and the extraction of oil was initially in Dhahran, today Dammam is the hub of logistics and houses an international airport and well-connected train station. Al Khobar distinguishes itself by offering a high quality of life for the inhabitants of the Eastern Province while also serving as an economic and research hub.

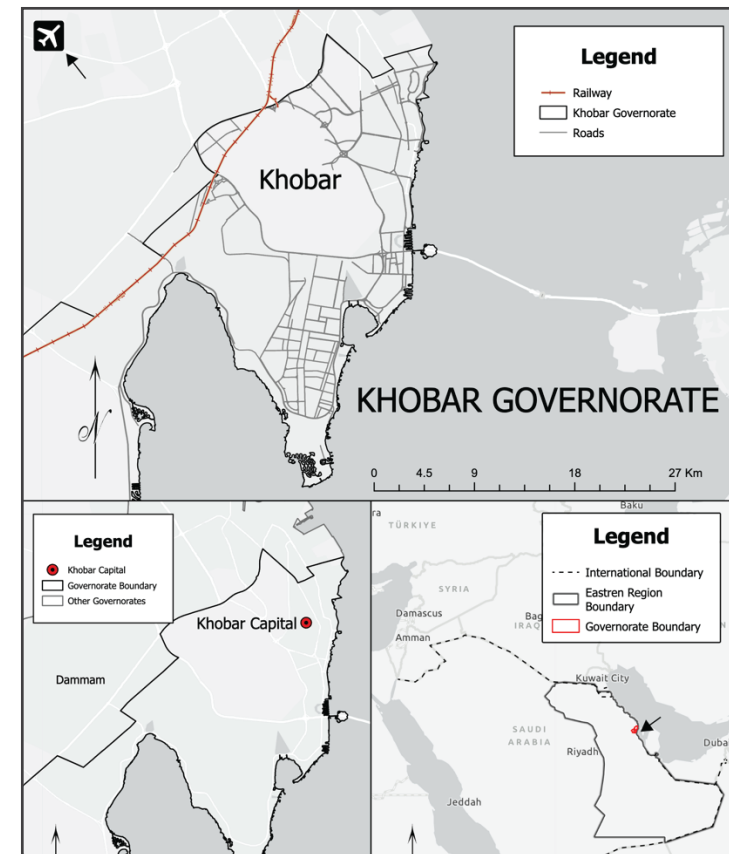


Figure 1 Al Khobar and Dharhan © Sharqia Development Authority



## Founded in 1923

by the Dawasir tribes, Al Khobar was initially a small city with just a few hundred inhabitants <sup>2</sup>. The city thrived on the primary resources offered by the Arabian Gulf, mostly fishing and pearling. This trajectory shifted significantly following the discovery of the first crude oil well in 1938 by the Arab American Oil Company <sup>3</sup> (Aramco) in nearby Dhahran. Named the Prosperity Well, this discovery laid the groundwork for the future economic prosperity of Saudi Arabia and, more specifically, the Eastern Province and Al Khobar itself.

A distinguishing feature of Al Khobar is its role as an exceptionally livable oil city. Notably, it was the first city in the Kingdom of Saudi Arabia to implement a smart city plan as early as 1947, aimed at supporting the socio-economic development of the region <sup>4</sup>. The city's grid layout facilitated the efficient transportation of machinery, equipment, materials, and personnel directly from Al Khobar Pier <sup>5</sup> to the oil extraction fields in Dhahran, approximately 10 kilometers away. Al Khobar stands out as a symbol of Saudi Arabia's industrial revolution.

The coastal city of Al Khobar, facing the Kingdom of Bahrain, is strategically positioned near neighboring countries such as Qatar, Kuwait, the United Arab Emirates, and Oman. Post-World War II, under the initiatives of the Saudi government and Saudi Aramco, Al Khobar was designated as a hub for expatriates, and a talent pool of international and rural Saudi workforce was attracted to the burgeoning oil industry.

This urban planning approach was influenced by international industrial city models, which aimed to create a socio-economic hub for both locals and expatriates. The city was designed with a network of perpendicular streets, favoring car usage over more traditional, compact, and pedestrian-focused public spaces. Yet in 1947, its narrow streets lined with trees, shops, and accessible living areas still supported pedestrian movement and social cohesion. Following this initial integration, Al Khobar's urban planning model was often used when it came to land subdivisions and the planning of neighborhoods, at least partially in new developments by municipalities across Saudi Arabia in major cities such as Riyadh and Jeddah.

Without the thoughtful planning that went into Al Khobar, it could easily have become just another industrial oil city. Instead, it transformed itself into one of the most modern cities in Saudi Arabia, offering a lifestyle unparalleled in the Kingdom at that time. Recognizing its valuable resources, in 1963 a Saudi royal decree established the now globally acclaimed King Fahd University of Petroleum and Minerals <sup>6</sup> in Al Khobar.

<sup>2</sup> Alshehri, A., Almana, L. *The Journal of Public Space* (2021)

<sup>3</sup> Aramco 2024, "Our History"

<sup>4</sup> Alshehri, A., Almana, L. *The Journal of Public Space* (2021)

<sup>5</sup> Alshehri, A., Almana, L. *The Journal of Public Space* (2021)

<sup>6</sup> King Fahd University of Petroleum and Minerals, n.d.

## 2.2 Contemporary Al Khobar

The extraction of natural resources in the region has marked a pivotal moment in the economic history of the Kingdom, establishing the Eastern Province as a major hub with global influence. This prominence is largely due to its thriving energy and petrochemical industries, bolstered by geographical advantages that come from being on the Arabian Gulf, among them enabling the region to serve as a significant air and sea logistical hub that connects to foreign countries. These assets explain the wealth of the Eastern Province and its population of 5,125,254 inhabitants <sup>7</sup>.

As of 2024, Al Khobar itself is home to 658,550 people <sup>8</sup>, 70% of whom are under the age of 40, and more than two-thirds of whom are non-Saudi. In Al Khobar, the population is therefore young and international, mirroring the national demographic. The city not only benefits from its strategic position on the coast but also remains a key destination for international expatriates and global talent, as well as local and international visitors, thanks to its

vibrant economic and academic ecosystem, its services for expatriates, its well-developed healthcare system, and its easy access by air, rail, and sea. Al Khobar is experienced in the coexistence of a diverse range of cultures living in the city and has been for over eight decades.

Key to maintaining this status quo is the ongoing presence of Saudi Aramco's headquarters, which are shared between Dhahran and Dammam, and the King Fahd University of Petroleum and Minerals, recognized as the top university in the Arab world and ranked fourth worldwide among universities in terms of the number of US patents <sup>9</sup>. Additionally, the presence of global service companies and both public and private research centers that collaborate on industrialization in the fields of gas, minerals, chemicals, and new materials, help maintain Al Khobar's role as a city of global significance.

<sup>7</sup> Saudi Census 2024 "Eastern Region"

<sup>8</sup> Saudi Census 2024 "Al Khobar"

<sup>9</sup> King Fahd University of Petroleum and Minerals, n.d., n.d.

## 2.3 The challenges of making an oil-rich city livable

Al Khobar is today recognized as a city offering a well-being environment and tourism. The city shares both similarities and differences with neighboring cities like Dammam. All the while recognizing that Dammam is an important player in the region: it's home to the main seaport, international airport, and a railway station that connects to Riyadh and beyond.

Under the guidance of the Eastern Province Smart City Initiative, the Municipality of Al Khobar is currently undergoing significant developments, including the enhancement of the Corniche area with coffee shops, restaurants, recreational spaces, children's playgrounds, and improved smart mobility solutions for cars and public transport. Al Khobar North (Al Khobar Al Shamalia), the city's original hub and old town, is now the site of a pilot project aimed at elevating the quality of life for its citizens through the integration of smart technology and infrastructure.

Since its pioneering achievements in the

1950s, Al Khobar has grown significantly, and the city is now taking bold steps to reshape its urban landscape. After decades of expansion, Al Khobar is focusing on creating a more cohesive and well-structured environment. Today, the city is embracing modernization, with vibrant pedestrian streets and dynamic activities along the Corniche reflecting this new vision.

For example, the preference among many Saudis for living in private houses has elevated living standards and shifted expectations. This shift has driven the local population away from the northern part of the city, which was once the urban center, towards the outskirts.

This migration has fueled widespread real estate development across the city, as well as a significant boom in suburban shopping mall construction. These developments have led to a noticeable emptiness in the city's core. The new real estate developments in the downtown, which embrace high-end standards, have raised concerns about the

availability of affordable housing, according to the 2024 IMD Smart City Index <sup>10</sup>.

Additionally, the development of road infrastructure, including highways, has resulted in some areas becoming wasteland or underused and has made the few green spaces present – such as parks – less accessible. The absence of viable transportation alternatives, such as shared e-bikes or bicycles, has increased the reliance on cars, thus exacerbating traffic congestion in some specific locations and escalating the demand for public parking. Regarding public transportation, it was only recently, in November 2022, that Al Khobar began to offer public transit options to its residents, marking a significant shift towards addressing these urban mobility issues.

<sup>10</sup> IMD Smart City Observatory 2024 “Al Khobar”

### 2.4 Government-led impulse to make the city smart

In alignment with Saudi Vision 2030<sup>11</sup> set forth by the Saudi Government, the Ministry of Municipalities and Housing, has spearheaded the implementation of a Smart Municipalities Strategy<sup>12</sup> and framework (Figure 2) in collaboration with the Digital Transformation and Smart Cities Deputyship. It is a pivotal nationwide program aimed at ushering cities into the digital era and extends to 17 municipalities across the kingdom, encompassing 72% of the population.

Among these municipalities, those in the Eastern Province – including Al Khobar – are placed in the top tier. This designation signifies that the province has already achieved a certain level of maturity across various sectors, including a concentrated population within a single city and a broad sectoral focus on applications such as mobility, health, safety, etc.

11 Kingdom of Saudi Arabia 2024 “Vision 2030”  
12 Ministry of Municipalities and Housing 2021 (internal document)

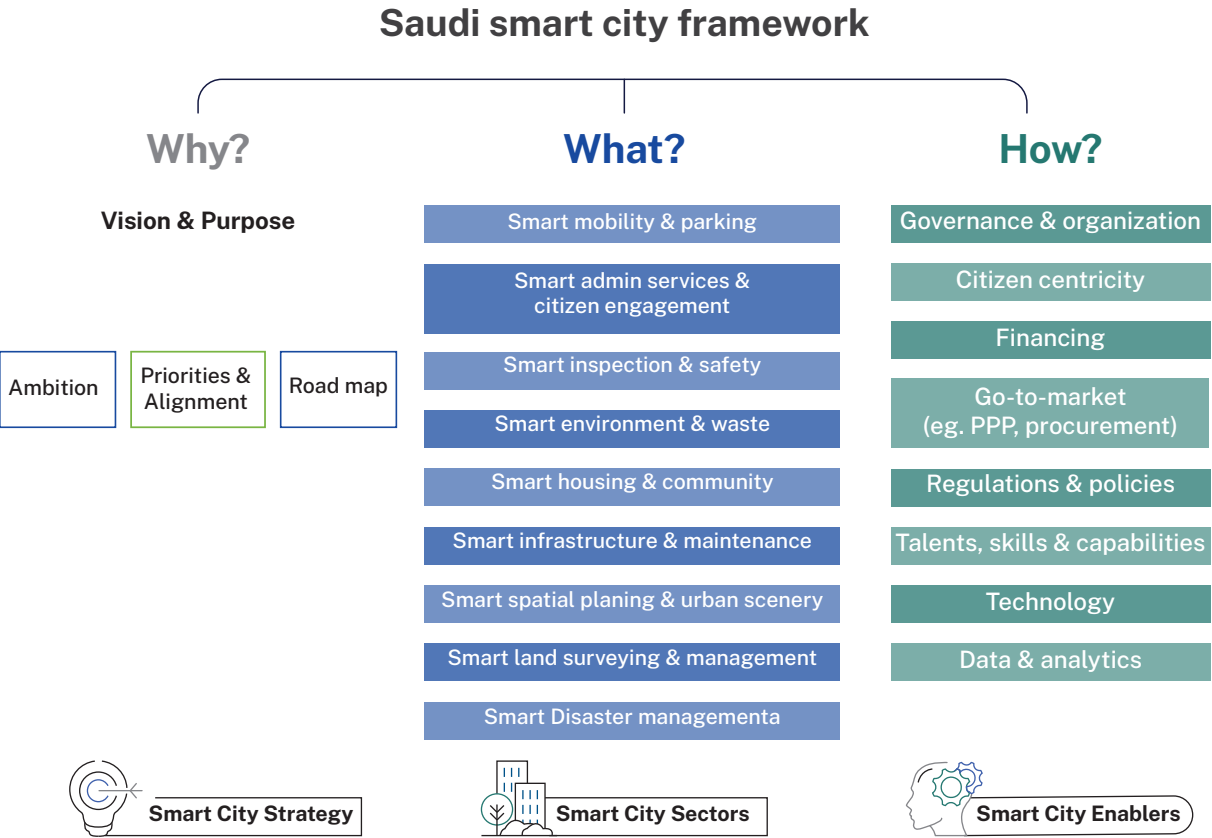


Figure 2 Smart City Framework © Ministry of Municipalities and Housing BCG Analysis



**TRANSITIONING FROM A WELLS ECONOMY  
TO A RESEARCH AND  
INNOVATION-LED ECONOMY**

### 3. TRANSITIONING FROM A WELLS ECONOMY TO A RESEARCH AND INNOVATION-LED ECONOMY

The Kingdom of Saudi Arabia has recognized the pressing need to diversify its economy, as articulated in Saudi Vision 2030, launched in 2016 with ambitious goals including the growth of small and medium enterprises, the bolstering of the availability of venture capital – positing Saudi Arabia ninth for this particular indicator in the 2022 IMD World Digital Competitiveness Ranking<sup>13</sup> – and increasing direct foreign investment. This strategic shift has yielded tangible results, with non-oil revenues surging to \$98.3bn in 2020, up from \$45bn in 2015<sup>14</sup>.

Saudi Arabia is ranked 16th overall in the aforementioned Ranking, ahead of Canada and the Republic of Korea and out of 67 economies in total<sup>15</sup>. Such a respectable positioning highlights the country's level of maturity, particularly in terms of economic performance, business environment, and governance efficiency, helping to understand why it is increasingly attractive to foreign investors.

The Eastern Region, which accounts for 90%

of the Kingdom's crude oil production, boasts the largest onshore and offshore fields. Key sectors such as mining, downstream chemical industry activities, and the automotive industry are set to remain pillars of the country's economy. While there is a commitment to sustaining these sectors, there is also a clear intention to transition towards alternative energy sources, including unconventional gas and renewable energy.

Al Khobar City hosts the EXPEC Center<sup>16</sup> in Dhahran, the world's most advanced monitoring center for oil and gas operations, production, and exporting. It controls, monitors, and follows up on every single drop of crude oil and every cubic foot of gas that is produced in Saudi Arabia and exported to the world market electronically. The EXPEC Center is overseen by the Saudi Aramco top management and the Ministry of Energy's leadership. It is one example among many excellent smart-technology applications in the ecosystem set up in Al Khobar, which also includes the

petrochemical industry hub in Dhahran Techno Valley at King Fahd University of Petroleum and Minerals in Dhahran.

In addition, with the vision to advancing AI technology, Saudi Aramco Digital, based in Al Khobar, is partnering with the US-based company Grog to build the world's largest inferencing data center in Saudi Arabia. This cutting-edge hub aims to redefine the future of AI and establish new benchmarks in the global tech industry<sup>16.1</sup>.

With a national population of 32,175,224 of whom 63% are under 30 years old<sup>17</sup>, Saudi Arabia possesses a youthful and dynamic workforce. Notably, the percentage of employed Saudi women has risen from 17.4% in 2017 to 35.5% in 2023<sup>18</sup>, surpassing Saudi Vision 2030's target of a 30% increase. This indicates a big stride towards gender parity in the Saudi labor market. Moreover, Saudi Arabia benefits from a well-educated workforce, with 55% of 15- to 19-year-olds enrolled in higher education programs, surpassing the OECD average of



37%<sup>19</sup>. This pool of talent exhibits a strong propensity for embracing new technologies. The Eastern Province is also particularly attractive to talent as it offers the highest average salary in Saudi Arabia – a figure that sat at a monthly gross value of \$1,295.42<sup>20</sup> in 2022.

13 Bris & Cabolis 2022, page 141

14 Vision 2030 2020 "a story of transformation" page 56

15 IMD WCC 2024 "Saudi Arabia"

16 Aramco n.d. "Aramco life"

16.1 Aramco digital 2024 "News".

17 Reuters 2023 "Saudi Population"

18 World Bank n.d. "labor force rate, Saudi Arabia"

19 OECD 2023 "Saudi Arabia" Education at a Glance 2023

20 Monshaat 2024 "Income"

### 3.1 Welcoming the digital era

In the Eastern Province and Al Khobar specifically, the internet penetration rate in residential areas is at approximately 98%<sup>21</sup>, reflecting the region's readiness to embrace the digital transformation that Saudi Arabia is actively pursuing. Also, it is partly thanks to the efficient implementation of the fifth-generation technologies (5G). According to Pekka Lundmark, CEO of telecommunications firm Nokia, Saudi Arabia's 5G coverage is almost double the global average of 42% thanks to "really good operators that have high demands"<sup>22</sup>.

An analysis of the IMD Smart City Ranking 2024<sup>23</sup> reveals that in Al Khobar, as well as across Saudi Arabia, online platforms are highly esteemed by most citizens. These platforms are instrumental in simplifying tasks such as document identification, organizing medical appointments, and purchasing entertainment tickets. Such widespread acceptances are encouraging for the integration of new technological solutions across various sectors.

As for Al Khobar, retaining the existing talent pool and attracting new talent are pivotal steps towards aligning with Saudi Vision 2030 and achieving its objectives of economic diversification while creating ample opportunities. Consequently, the city is actively implementing smart initiatives aimed at attracting investment and fostering public-private partnerships to drive economic development.

The government of Saudi Arabia has also made it highly efficient to do business in the country, particularly in Al Khobar which has an online set-up time for commercial licensing of three minutes. Currently, the government is also developing a robust and transparent business-bidding and contracting system whereby top government officials can track the status of projects' contract phases, payments, submissions, deliverables, and business-approval process.

They also developed a very smart system to validate the personal identification of applicants for business processes across all

government agencies including change of titles made at notary public offices belonging to the courts through a special identifications system portal named Najiz <sup>24</sup>.

These different smart technology applications have eliminated the need for in-person appointments when it comes to conducting critical business deals, therefore boosting business in the country – including in Al Khobar.

Some elements of the system also use AI and facial verification technologies for banking operations. All in all, the government has improved the ecosystem in Saudi Arabia using several smart technology devices, portals, and applications to simplify and boost business processes between the government and the individual, the government and businesses, and the individual and businesses.

<sup>21</sup> Ministry of Economy and Planning 2021 “Percentage of Household ICT Access Indicators in Eastern Province”

<sup>22</sup> Hassan 2024

<sup>23</sup> IMD Smart City Observatory 2024 “Al Khobar”

<sup>24</sup> Saudi Ministry of Justice 2024 “Najiz Center”

## 3.2 The smart ecosystem of Dhahran Techno Valley

In terms of innovation and economic transition, Al Khobar is home to The Dhahran Techno Valley Holding Company <sup>25</sup> (DTVC), a wholly owned subsidiary of the King Fahd University of Petroleum and Minerals. Serving as a key catalyst for the ongoing development and activation of the Dhahran Techno Valley ecosystem, the DTVC oversees the Dhahran Techno Valley Science Park. Established over 15 years ago, the Park aims to drive knowledge-based and innovation-led economic growth by fostering connectivity among world-class research and innovation, talent, R&D assets, and activities. Many of the world's most renowned companies in the fields of oil, gas, and new energy are situated within the Dhahran Techno Valley. In 2023, 1,600 people were working across the Valley, producing more than 100 patents per year, and engaging in commercializing more than 100 technologies.

Additional innovation hubs such as the AMAAD Business Park <sup>26</sup> – a joint initiative by Saudi Aramco and KFUPM, along with the

Dhahran Techno Valley – are poised to catalyze innovation through collaborative efforts within an energy- and engineering-centric environment. These hubs offer state-of-the-art office spaces and residential areas, strategically located close to various research sites, fostering smart collaboration and reducing dependence on individual cars. By promoting different stakeholders sharing a location, these initiatives encourage car-sharing initiatives and publicize the need for comprehensive public transportation offerings in the area.

Under Saudi Vision 2030, the Council of Ministers is initiating a cutting-edge ecosystem in the region, intended to serve the industrial energy sector. As an example, SPARK <sup>27</sup>, which is a new energy hub located 70 kilometers south of Al Khobar, is part of this ecosystem and is expected to create more than 100,000 direct and indirect jobs in the industrial community in the years to come.

<sup>25</sup> Dhahran Techno Valley Holding Company 2023

<sup>26</sup> Amaad 2024

<sup>27</sup> Spark 2024

### 3.3 A hub for the public and private sectors to do business

Furas Platform<sup>28</sup> serves as a national online portal, functioning as the centralized database and primary resource for investors, entrepreneurs, and various sectors seeking real estate and municipal investment opportunities provided by government agencies. Additionally, it offers visibility for potential employment opportunities at the national level.

A noteworthy illustration of the Furas Platform's impact in Al Khobar is the revitalization project of the iconic water tower. Standing at 90 meters tall, the Al Khobar Water Tower is a prominent landmark situated along the Corniche, overlooking Bahrain (Figure 3). Initially constructed in 2002 as a functional water tower, its potential as a tourist attraction was recognized but remained unfulfilled due to changes in plans which led to its neglect from 2015 onwards. This was the source of much frustration among citizens who were unable to access or showcase the tower to visitors with pride.

Under the guidance of the Sharqia Development Authority<sup>29</sup> (SDA), the project was showcased on the Furas Platform, garnering national attention and attracting private investors through a public-private partnership. This collaboration aims to renovate the water tower, transforming it into a recreational destination complete with cafes, shops, viewpoints, and the necessary access by bus or car.

<sup>28</sup> Ministry of Municipalities and Housing 2024 “Furas”  
<sup>29</sup> Sharqia Development Authority 2024



Al Khobar, The Water Tower  
 © Sharqia Development Authority

### 3.4 Improving public services to facilitate entrepreneurship

In terms of public administrative services, the streamlined process of accessing, submitting, and approving digital documents across various government sectors has garnered acclaim from both local Saudis and foreigners. Notably, the time required for document submission has significantly decreased, from days to hours. This efficiency for example extends to smart land surveying, and to receiving commercial registrations and management.

For instance, investors and government stakeholders now have online access to cadastral sketches, enabling them to issue sketches for both planned and unplanned land areas, upload proof of ownership, provide feedback, and request data conveniently through digital channels.

### 3.5 Making work more available and opportunities more visible

Despite the good availability and widespread adoption of online job listings, residents of Al Khobar feel that there is a shortage of adequate job-finding services, as indicated in the 2024 IMD Smart City Index <sup>30</sup>—especially when compared to cities like Jeddah or Riyadh. However, thanks to the economic stimuli and city planning in Al Khobar, extensive development plans are underway and are expected to bolster job opportunities significantly.

A good example is the waterfront expansion project <sup>31</sup>, which is characterized by a concentrated area of recreational venues over 85,000 square meters on a length of 1,200 meters. This area includes restaurants, promenades, parks, open spaces, gardens, and coffee shops, along with developments in real estate, healthcare facilities, and shopping malls. Presently, only a handful of such venues are operational, but others are under construction.

<sup>30</sup> IMD Smart City Observatory 2024 “Al Khobar”

<sup>31</sup> Saudi Gazette 2022, “Waterfront development project work gets underway in Al-Khobar”



# **THE EASTERN REGION: GOVERNANCE FOR SMART PLANNING**

## 4. THE EASTERN REGION: GOVERNANCE FOR SMART PLANNING

### 4.1 Saudi Vision 2030

As previously mentioned, Al Khobar began integrating smart infrastructure as early as 1947<sup>32</sup>, if we understand smart in the context of cities to mean an ability to create a more livable and efficient environment for the well-being of citizens. However, it was the impetus provided by Saudi Vision 2030, spearheaded by Crown Prince Mohammed bin Salman, that propelled Al Khobar into the realm of smart cities, leveraging cutting-edge technology as a facilitator.

Established in 2016, Saudi Vision 2030 outlines comprehensive objectives for societal transformation, economic diversification, growth in tourism, heritage preservation, and environmental conservation. Subsequent initiatives such as the National Transformation Program<sup>33</sup> and the Quality of Life Program<sup>34</sup> further refine these objectives, with a focus on enhancing the well-being of both citizens and visitors to Saudi Arabia, including doing so through the smart city initiative led by the Ministry of Municipalities and Housing<sup>35</sup>. The latter consolidates national expertise on smart

cities and oversees the development of 17 municipalities, known as ‘amanas’, across the Kingdom’s regions. The organizational structure of the Ministry of Municipalities and Housing also includes the mayors of the municipalities, ensuring the effective coordination and implementation of smart city initiatives at the local level.

There are also other important players in the ecosystem of the government-led Saudi smart city initiative (Figure 4) such as the Saudi Data and Artificial Intelligence Authority (SDAIA)<sup>36</sup>. This is the Saudi governmental body responsible for driving the national data and AI agenda such that it supports economic and technological development. Its remit is to manage national data governance, AI development and implementation, talent development and education, international collaboration, and stimulate economic diversification.

<sup>32</sup> See also 4

<sup>33</sup> Kingdom of Saudi Arabia n.d. National Transformation Program

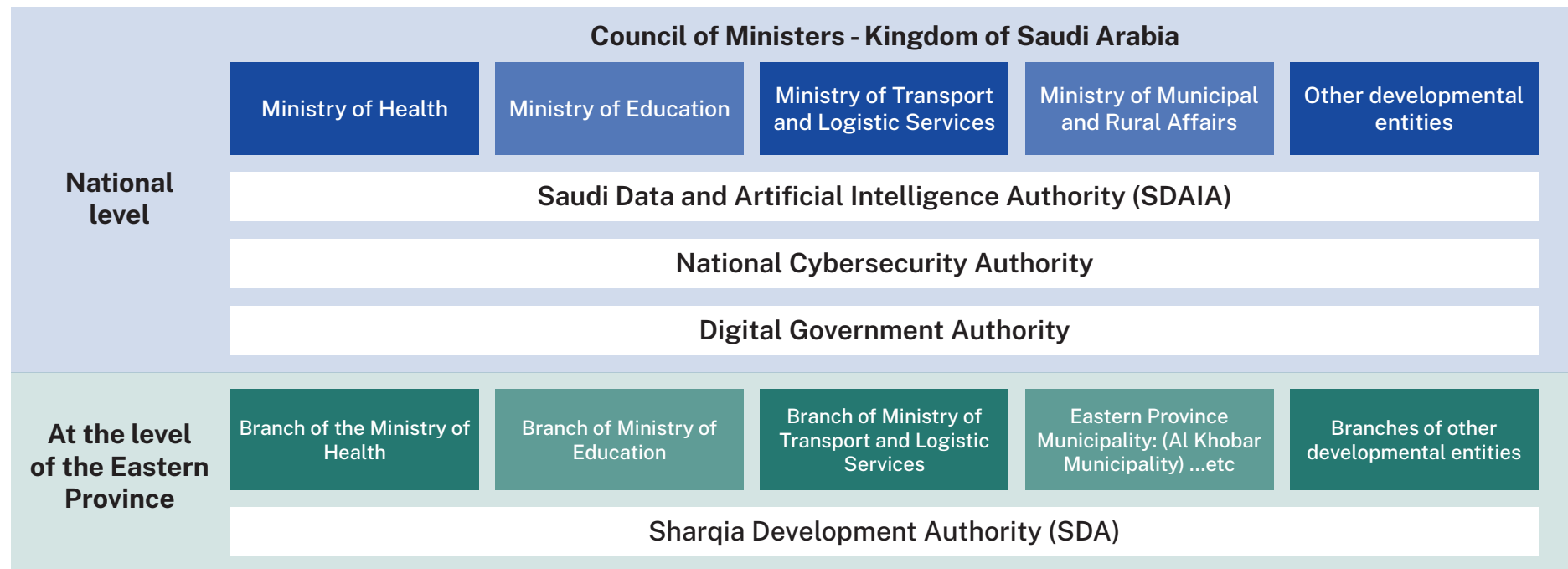
<sup>34</sup> Kingdom of Saudi Arabia n.d. Quality of Life Program

<sup>35</sup> Ministry of Municipalities and Housing 2021

<sup>36</sup> SDAIA 2024



## Prominent saudi government agencies



Al-Khobar Smart City Strategy is coordinated by the Sharqia Development Authority with all government entities  
The diagram is for illustration purposes only and does not include all government entities

Figure 4 @ Aline Garbian and Annas Alharbi

## 4.2 Autonomy in shaping smart city strategy

The Eastern Province municipalities, including Al Khobar municipality, hold a distinguished position in the top-tier region, bolstered by the support of the Ministry of Municipalities and Housing to craft and execute a smart city strategy. The idea is to develop tangible solutions that enhance the quality of life for both residents and visitors.

Mature smart municipalities are characterized by a concentrated population within a single city, diverse smart sectors, and robust capabilities in smart city handling. The aforementioned diverse sectors encompass smart mobility and parking, smart administrative services and citizen engagement, smart inspection and safety, smart environment and waste management, smart housing and community management, smart infrastructure & maintenance and operations, smart spatial planning and urban scenery, smart land surveying and management, and smart disaster management.

This smart municipality framework enables the Eastern Province, under the auspices of the Ministry of Municipalities and Housing, to empower the Al Khobar Municipality to spearhead its initiatives in alignment with the national Smart City Strategy. Figure 5 demonstrates a significant leadership role entrusted to the Eastern Province, with the Ministry of Municipalities and Housing overseeing key enablers such as the national smart city platform Balady <sup>37</sup>.

Balady facilitates municipal engagement with citizens, fostering collaborative efforts that result in better solutions for all stakeholders. For instance, citizens can use the online platform to report building and road visual distortions in the city, apply for commercial and construction licenses, acquire health certificates, and access essential information services provided by municipalities.

<sup>37</sup> Ministry of Municipalities and Housing 2024  
“Balady”



Figure 5 © Ministry of Municipalities and Housing BCG Analysis

### 4.3 The role of the Sharqia Development Authority

Since 2023, the Sharqia Development Authority (SDA) <sup>38</sup>, reporting directly to the Council of Ministers in Riyadh, has been tasked with crafting the roadmap for smart cities in the region (Figure 4). This involves engaging with development sectors and aligning their strategies to ensure cohesive progress. Additionally, the SDA facilitates the collection and analysis of extensive urban data across various sectors to derive key urban indicators from them.

A pivotal aspect of the SDA's mandate is to secure robust stakeholder support for the smart initiatives led by municipalities. This entails managing program visibility and actively communicating progress, implementation updates, and prospects. Moreover, the SDA oversees major pilot projects like the housing activities in Al Khobar Al Shamalia.

The SDA fosters scientific research and innovation in smart cities and advanced technology. By collaborating with institutions like King Fahd University of Petroleum and Minerals, the Urban Informatics Laboratory,

and the Sharqia Urban Observatory, it provides Al Khobar with a high-quality laboratory equipped with the latest technology. Some of these collaborations aim to analyze future scenarios based on existing data. Furthermore, King Fahd University of Petroleum and Minerals facilitates student involvement with the SDA, enabling real data analysis, which benefits both academia and concrete implementation efforts.

In 2023, King Fahd University of Petroleum and Minerals launched the first-ever Bachelor of Science Program in Smart & Sustainable Cities <sup>39</sup> to exist in Saudi Arabia. Enrollment in the program became full and over two-thirds of the students are women. Given the University's commitment since 2020 to admitting women, future competencies in the field of smart cities at the national level and the promotion of gender diversity within the domain of smart cities in general look promising.

<sup>38</sup> Sharqia Development Authority 2024 Board and Committees

<sup>39</sup> King Fahad University 2024 “Mx in Smart and Sustainable Cities”

### 4.4 Challenges in governance

The existing governance framework for Eastern Province municipalities, including Al Khobar, grapples with several challenges. A 2021 survey conducted by the Ministry of Municipalities and Housing highlighted the following issues: challenges in aligning and coordinating with other government stakeholders, difficulties in collaboration with private sector entities, insufficient funding for smart city initiatives, unclear regulatory frameworks thereby hindering implementation, and technical hurdles during project execution <sup>40</sup>.

In response, there is an anticipation for support from the Ministry of Municipalities and Housing to champion smart city-specific regulations and to facilitate the scaling of successful pilot projects across various municipalities, set to serve as examples.

<sup>40</sup> Ministry of Municipalities and Housing n.d. “Smart municipalities Strategy” (internal document)

IMD

**ENHANCING QUALITY OF LIFE**

## 5. ENHANCING QUALITY OF LIFE

### 5.1 The Center of Heritage as the first smart pilot project in housing

The Sharqia Development Authority selected Al Khobar Al Shamalia as the area for the inaugural smart pilot project. Al Khobar Al Shamalia stands out as Saudi Arabia's pioneering smart urban planning endeavor, originating in 1947 through a collaboration between the national government and Saudi Aramco to support the burgeoning oil industry. This initiative introduced a grid-based masterplan, connecting the Al Khobar Pier to the oil fields via a single road, facilitating the movement of equipment, machinery, and personnel, and fostering cohesion among Saudi national workers and expatriates alike.

King Khalid Street, a cornerstone of Al Khobar's modern landscape, holds immense urban and cultural significance. Nicknamed “the Champs-Élysées of Saudi Arabia”<sup>41</sup>, it has served as the city's premier public promenade since the early 1950s, hosting parades for several Saudi monarchs. The vibrant boulevard has long been a hub for merchants, visitors, and locals alike, offering opportunities for shopping and socializing.

While Al Khobar Al Shamalia once served as a model for the development of other Saudi cities like Riyadh and Jeddah, it has transformed over the years. Today, it primarily accommodates temporary migrants and commercial activities. Although still bustling with activity, challenges such as traffic congestion in some specific locations, expensive parking facilities, limited pedestrian zones, and a lack of cultural attractions deter visitors. The shift towards car-centric urban planning has replaced natural greenery with parking lots which exist in stark contrast to the canopy of trees that once made shopping and socializing there such a pleasant experience.

Indeed, the 2024 IMD Smart City Index<sup>42</sup> for Al Khobar reveals that citizens are concerned about the city's lack of recreational spaces, indicating the need for areas conducive to socializing and leisure activities. Recognizing its prime location near the Corniche and its iconic status in the heart of Al Khobar, the Sharqia Development Authority has embarked on a pilot project

focused on integrating smart infrastructure and technologies. This initiative aims to create pedestrian-friendly environments, reduce reliance on private vehicles, optimize access to public spaces such as the Corniche and parks, and reintroduce natural shade. Additionally, the project aims to retrofit urban infrastructure, promote sustainable transportation modes, and enhance accessibility through smart interventions.

<sup>41</sup> Al Arabiya News 2020

<sup>42</sup> IMD Smart City Observatory 2024 “Al Khobar”



## 5.2 The pilot project in four steps

The pilot project entailed four key initial steps. Firstly, the area was meticulously defined, selecting a zone with a rich diversity of land use. This encompassed major souqs, a spacious park, a bustling square, a recently developed shopping mall, and a population density nearing 13,000 people, all encapsulated within a compact one-kilometer-squared radius.

A groundbreaking pedestrian pathway will be established linking the park and square (Figure 6) to an existing modern Corniche walkway adorned with restaurants and shops. Leveraging existing infrastructure and available spaces, the project sought to introduce innovative concepts and activities, promoting pedestrian-friendly environments and reducing reliance on automobiles.

To ensure the success of this initial phase, a comprehensive survey was conducted, engaging a broad spectrum of the community, including small business owners, residents, employees, students, and visitors. Following the survey, participants took part in workshops to discuss key issues,

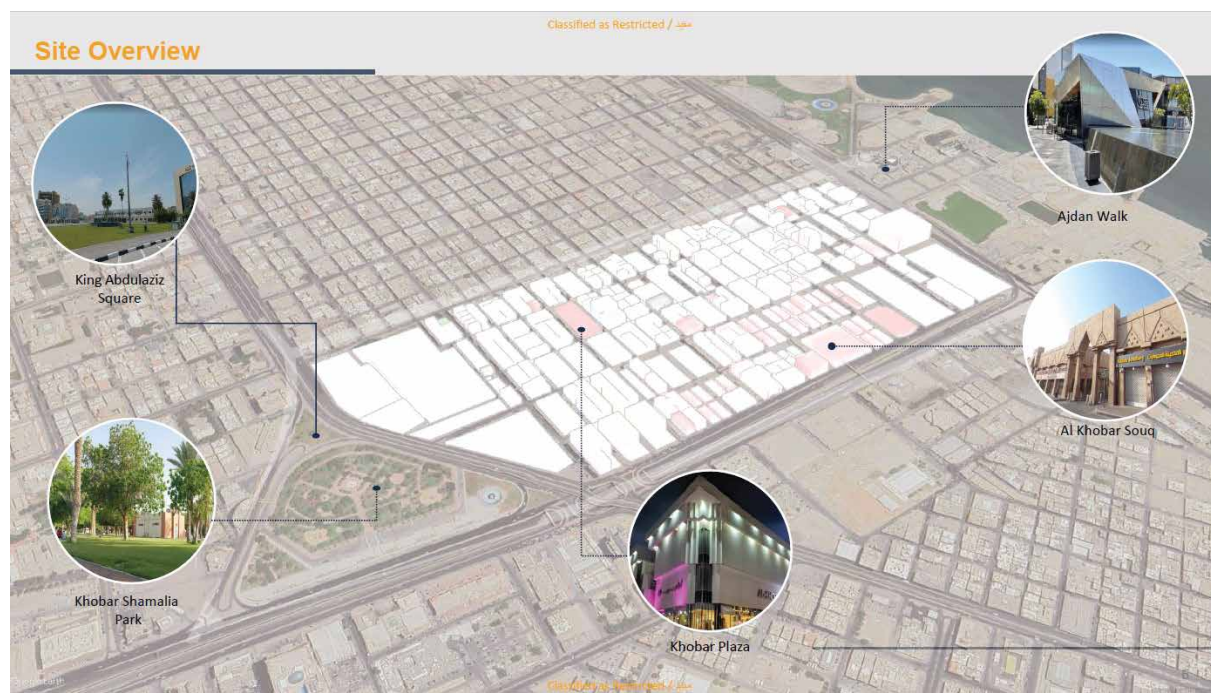
such as narrow sidewalks, inadequate street lighting, insufficient pedestrian connectivity, high parking fees, limited public transportation options, the scarcity of green spaces, the lack of youth-oriented activities, and the lack of cultural and retail projects.

The community's active involvement not only fostered a sense of ownership but also greatly facilitated the subsequent step of establishing the project's vision, named Revitalizing Northern Al Khobar and Crafting a Vibrant City Center.

The third phase centered on formulating the master plan and preliminary designs, integrating smart technology to enhance existing infrastructure. This included smart lighting, irrigation, signage systems equipped with AI-powered CCTV cameras, air-quality monitoring sensors, smart waste management solutions, 5G network accessibility, and intelligent parking enhancements. These measures lay the foundation for extending the success of Al Khobar Al Shamalia to adjacent areas and beyond.

Lastly, as of 2024 meticulous preparations are underway for a detailed construction design, marking the final stage in the project's initial trajectory.

Figure 6 Al Khobar Al Shamalia © Sharqia Development Authority



### 5.3 Al Khobar's public buses since 2022

In November 2022, the city inaugurated its first local and intercity public transportation service<sup>43</sup>, establishing a vital link between Al Khobar and Dammam and their respective cities. Over the subsequent year, buses catered to more than 1.6 million passengers<sup>44</sup>, marking a significant milestone in the region's transportation landscape.

In delving into the citizen satisfaction metrics outlined in the 2024 IMD Smart City Index<sup>45</sup>, the chapter on mobility emerges as a focal point of concern. The pervasive reliance on cars in Al Khobar is attributable to myriad factors. Firstly, there's a predilection for urban sprawl coupled with extensive road infrastructure development<sup>46</sup>. Additionally, the region's harsh climatic conditions during certain periods of the year further disincentivize the use of alternative modes of transport. Exacerbated by a lack of viable alternatives, this confluence of factors dampens enthusiasm for embracing public transportation options.

Consequently, against a backdrop of burgeoning economic activities and pressing environmental imperatives, Al Khobar's residents are expressing their dissatisfaction with rising traffic congestion in some specific locations.

On the other hand, there is palpable contentment with the efficacy of new technological interventions, such as applications facilitating the identification of available parking spaces, car and bike-sharing schemes, and real-time updates on traffic conditions.

To address these concerns, Al Khobar has embarked on pilot initiatives to promote bike commuting and disseminate traffic updates via large digital billboards in densely populated areas. However, effecting behavioral changes and fostering widespread acceptance of alternative transportation modes necessitate time and concerted efforts. Transitioning from the comfort and convenience of private vehicles to embracing public transit alternatives

requires compelling solutions.

Saudi Aramco and other companies offer public transportation services, but this is limited in certain areas and mainly dedicated to work commuting, which is why Al Khobar took proactive measures to tackle this challenge head-on in 2022, with the bus network creation.

Notably, and as lightly touched upon already, the bus ridership surged from 33,320 passengers in the inaugural month of 2022 to 158,000 a year later underscoring the growing acceptance and utilization of public transit, especially among women, who are now more active in the Saudi world of work. (In general, there's a seasonal drop in ridership during the summer months due to the high temperatures.)

These encouraging statistics embolden the authorities in Al Khobar and the Eastern Province to work on enhancing the public transportation infrastructure. New initiatives such as smart bus stops equipped with

shade and cooling systems are being tested alongside user-friendly ticketing applications. These, and a robust bus control system, underscore the authorities' commitment to improving the commuting experience. Real-time data analytics facilitate the efficient monitoring of bus frequencies and enable a prompt resolution of any operational challenges flagged by drivers and passengers through a dedicated app.

43 Saudi Gazette 2022 "Trial run of public transport bus service begins in Eastern Province"

44 Sharqia Development Authority 2024

45 IMD Smart City Observatory 2024 "Al Khobar"

46 Moreno et al. 2018, page 36

## 5.4 The smart roads infrastructure

Al Khobar's holistic approach not only harnesses smart technology to optimize traffic flow but also integrates intelligent urban planning strategies into its infrastructure development, facilitated by modeling programs like PTV Visum <sup>47</sup>. It does so through initiatives such as redesigning roads with roundabouts and prioritizing accessibility to dense areas. Al Khobar distinguishes itself partly by its meticulous and adaptable approach to road infrastructure development. This stands in contrast to prevailing practices observed on some Saudi roads, where drivers often navigate extensive distances through sprawling cities in one direction only to backtrack an equivalent distance to reach their destination.

Al Khobar implemented a Traffic Management Center that monitors and regulates traffic flow in real-time. They use data from various sensors, cameras, and detection systems to oversee traffic conditions and respond to incidents. They also offer Dynamic Message Signs which

provide drivers with real-time information such as traffic conditions, travel times, and safety information. Furthermore, the solution offered by Intelligent Traffic Signals is a game changer, as these adaptive traffic lights automatically adjust signal timings based on real-time traffic conditions, helping to reduce wait times and improve traffic flow.

Moreover, Al Khobar is actively pursuing smart initiatives aimed at enhancing the driving experience for both traditional and electric vehicle users. This includes the widespread implementation of smart parking systems in all new projects and ensuring convenient access to electric charging infrastructure. These technologies are seamlessly integrated into both new projects and ongoing road planning efforts as part of the city's comprehensive agenda.

As a good illustration of this, within the expansive campus of King Fahd University of Petroleum and Minerals, electric scooters have been introduced to facilitate the

movement of students and faculty, particularly during the hot summer months. This initiative has significantly reduced the reliance on short car trips within the campus area, promoting a more sustainable, smart, and efficient mode of transportation.

<sup>47</sup> PTV Group 2024

IMD

**SMART SOLUTIONS FOR  
PUBLIC HEALTH AND SAFETY**



## 6. SMART SOLUTIONS FOR PUBLIC HEALTH AND SAFETY

### 6.1 A leading healthcare system

The healthcare system in Saudi Arabia operates under a national plan, with the government providing comprehensive healthcare coverage through various agencies. According to CEOWORLD magazine's Health Care Index <sup>48</sup>, Saudi Arabia ranks 37th out of 110 countries for the quality of its healthcare services.

In 2020, there was a significant improvement in emergency medical care, with 87% of patients receiving attention within four hours of arriving at medical facilities, compared to just 36% in 2016 <sup>49</sup>. Looking ahead, Saudi Arabia aims to ensure that by the end of 2025, 100% of its population will be enrolled in a unified digital records system, with 88% of the population, including rural areas, covered by comprehensive healthcare services <sup>50</sup>.

48 Wilson 2024

49 Kingdom of Saudi Arabia n.d. Quality of Life Program, page 6

50 Kingdom of Saudi Arabia, n.d. Health Sector Transformation Program

### 6.2 Al Khobar and telemedicine

The 2024 IMD Smart City Index <sup>51</sup> survey highlights the favorable sentiment among Al Khobar's residents regarding hospital accessibility, medical services, and the convenience of online medical appointments and telemedicine. With a significant portion of the Saudi population under the age of 30, as mentioned previously, there is a widespread adoption of healthcare applications.

A prime example is the national healthcare app Sehhaty <sup>52</sup>, which empowers citizens to locate nearby medical facilities, consult with doctors remotely, schedule appointments, access medical prescriptions, and engage with health awareness content that promotes activities like sports. The app also offers tailored recommendations for various health conditions. Similar applications offered by private medical groups, such as Dr Sulaiman Al Habib <sup>53</sup> and Mouwasat <sup>54</sup>, further contribute to the competitive health app landscape, fostering a drive for excellence and continual improvement in service quality. For those who prefer

traditional methods, the 24/7 phone line, 937, remains available, ensuring accessibility for all residents.

51 IMD Smart City Observatory 2024 "Al Khobar"

52 Ministry of Health, n.d. Sehhaty

53 Dr. Sulaiman Al Habib App 2024

54 Mouwasat Hospital 2024

## 6.3 Smart surveillance systems

Saudi Arabia has a reputation for its low crime rate, securing 19th position – just before Germany and Japan – in the 2023 Global Finance Safest Country Index <sup>55</sup>.

The 2024 IMD Smart City Index <sup>56</sup> flags the fact that most Al Khobar residents support the implementation of face recognition technologies to further enhance security measures. Generally, citizens feel a sense of safety in Al Khobar, hence the acceptance of CCTV camera installations serving multiple functions, including security.

Moreover, these CCTV cameras play a pivotal role in improving overall quality of life by swiftly collecting essential data for various purposes such as security, traffic management, visual enhancement, and population flow analysis. Alongside CCTV installations, the integration of 5G connections and sensors in strategic locations like pipelines, drains, and streetlights aids in efficiently gathering data on air pollution levels and flood risks.

The 5G network, initiated by the Eastern

Region municipality, is used to connect a variety of devices, including dashcams, live-streaming cameras, CCTV cameras installed on buildings, smart cars with autonomous control for detecting violations and surveillance, and smart lighting poles. The data is managed through a centralized platform.

Implemented in Al Khobar as a first stage, it resulted in reducing the need for patrol officers, in addition to reducing the crime rate, which was achieved through communicating with patrolling teams directly and visually (through cameras) and collecting data that was then sent for analysis.

Another example saw sensors deployed in public containers and garbage bins to improve the allocation of city resources for cleaning and maintenance tasks. Al Khobar, along with the Eastern Province, has developed a sophisticated city monitoring system and a Disaster Command Center, within which citizens have a dedicated telephone and Internet hotline service that ensures a rapid response to any disturbances. The

municipality has significantly improved its response time as well and is now capable of closing cases within 24 hours compared to the previous 14 days.

Since 2022, the city has also been deploying inspection vehicles equipped with smart cameras that pick up anything untoward – a broken streetlight, a tree on the road, say – in real-time. Depending on what the issue is, it can be resolved from 30 minutes to 24 hours, previously this window was anywhere from 24 hours to five days.

The efficiency of both online and offline traffic reporting mechanisms has gained the appreciation of citizens, as highlighted by the 2024 IMD Smart City Index survey <sup>57</sup>. In addition, the Al Khobar municipality keenly monitors social media channels and ratings platforms to address dissatisfaction expressed by residents and visitors, responding quickly and giving direct feedback.

<sup>55</sup> Getzoff 2024

<sup>56</sup> IMD Smart City Observatory 2024 "Al Khobar"

<sup>57</sup> IMD Smart City Observatory 2024 "Al Khobar"



# **NATURAL RESOURCES FOR LEISURE AND CULTURE**

## 7. NATURAL RESOURCES FOR LEISURE AND CULTURE

As part of Saudi Vision 2030, Saudi Arabia is undergoing significant reforms in its tourism and entertainment sectors. Over the past eight years, the country has witnessed the emergence of a diverse range of activities, including cinema launches, music festivals, fashion shows, theme parks, and cultural biennales of contemporary art <sup>58</sup>.

Openness and a deep sense of hospitality are part of Saudi culture, but it is only since late 2019 <sup>59</sup> that visitors from abroad have been able to enjoy an easier procedure when coming to the country, as Saudi Arabia now issues online visas, which include medical insurance, within 24 hours. This is a very promising move in the bid to welcome more visitors.

In the Al Khobar-Dhahran area, and under the auspices of Saudi Aramco, the King Abdulaziz Center of Culture <sup>60</sup> (Figure 7) has risen from the sands, occupying the site of the non-active 'prosperity well', also known as 'well pit number 7'. Named Ithra, which means 'enrichment' in Arabic, this architectural marvel spans 350 kilometers of curved stainless-steel pipes. Serving as a hub for culture, knowledge, cinema, library resources, art, and various cultural events, Ithra enriches the social fabric of Saudi society.

58 Kingdom of Saudi Arabia 2024 General Entertainment Authority

59 Visa Saudi Arabia n.d.

60 King Abdulaziz Center for World Culture 2024



Figure 7 Ithra © Ahmad Alnaji

For years, the Corniche of Al Khobar remained an underutilized space despite its natural allure and refreshing breezes. Facing the Kingdom of Bahrain and linked by the impressive 25 km-long King Fahd Causeway (Figure 8) <sup>61</sup>, this area has historically facilitated cultural and social exchanges between the two countries.

<sup>61</sup> Welcome Saudi 2024



Figure 8 King Fahd Causeway

However, the 2024 IMD Smart City Index <sup>62</sup> revealed that citizens of Al Khobar still feel dissatisfied with the entertainment on offer. This discontent can be attributed to several factors, including the lack of a central gathering place, sports centers, or stadiums, and the fact that attractions such as parks and the Corniche are not well connected. Although the Corniche boasts amenities like children's playgrounds, cafes, restaurants, and cutting-edge technology such as smart benches and 5G-connected city lights, there is room for improvement in terms of overall accessibility and integration. (Figure 9)

<sup>62</sup> IMD Smart City Observatory 2024 "Al Khobar"



Figure 9 The Corniche

The city aims to further enhance its appeal through smart infrastructure and improved accessibility. A broad and long-term endeavor, it encompasses initiatives such as pedestrian areas, integrated technology solutions in parking facilities, public transport accessibility, and smart road design.

The significant number of renowned hotel chains currently under construction in Al Khobar, and set to open to the public in the next two to five years, has opened the doors for the entertainment industry to establish a presence in the region in the coming decade. There is a pressing need for this to happen if the quickly evolving preferences of citizens and visitors alike are to be met.

One promising initiative under development by the Sharqia Development Authority is the creation of dedicated bike lanes along the Corniche, encouraging cycling enthusiasts to make use of this scenic route. Additionally, the city has implemented bike lanes across its urban landscape, promoting cycling as a

sustainable transportation alternative.

In 2023, the city hosted a Pedal Power contest, inviting amateur cyclists to participate in the four-race Amateur Cycling Tournament series held in Al Khobar and Riyadh. The event, open to both men and women, offered participants the chance to compete for prizes, further promoting cycling culture in Saudi Arabia.

In 2019 <sup>63</sup>, the Eastern Hemam Academy was launched in Al Khobar to introduce different sporting activities to women, from basketball to karate, to help teams take part in tournaments in Al Khobar, Saudi Arabia, and abroad.

Despite its shortcomings in entertainment offerings, Al Khobar demonstrates a high level of satisfaction with online ticket booking platforms for entertainment events. Apps like Ticket, Saudi Event <sup>64</sup>, and Webook <sup>65</sup> cater to diverse preferences, reflecting the growing demand for digital solutions in the entertainment sector.

63 El Sheikh 2021  
64 Saudi Events 2023  
65 Webook 2024



## ENVIRONMENTAL INITIATIVE FOR A SMART MOVE



## 8. ENVIRONMENTAL INITIATIVE FOR A SMART MOVE

### 8.1 The green Saudi

Saudi Arabia is spearheading global efforts to combat climate change, pledging to reduce global methane emissions by 30% and achieve other ambitious environmental targets by 2030. This includes reducing carbon emissions by over 4% relative to global contributions, planting 10 billion trees nationwide, increasing protected areas to over 20% of the total land area, and ramping up renewable energy capacity to 50%<sup>66</sup>.

In the 2024 IMD Smart City Index<sup>67</sup>, citizens of Al Khobar ranked the importance of trees and greenery as their fifth priority among ten. This sentiment was echoed in the other major Saudi cities of Jeddah, Makkah, Madinah, and Riyadh, highlighting a shared commitment to environmental sustainability.

<sup>66</sup> Saudi and Middle East Green Initiative 2024

<sup>67</sup> IMD Smart City Observatory 2024 "Al Khobar"

To address this priority and align with the goals of Saudi Vision 2030, citizens in Al Khobar and beyond can now request free trees through the Netzero 68 app platform. Initially launched in the Eastern region, Netzero aims to color Saudi Arabia green, for environmental benefits such as natural shade, carbon capture, and improved well-being for both citizens and wildlife.

The Netzero team handles every aspect of tree planting and care through the app, from soil analysis to ensure proper irrigation, to ongoing maintenance and community education. Only trees and plants suited to the desert environment, such as neem trees, Ficus religiosa (sacred fig) trees, bougainvillea, and giant lemon trees, are offered through the platform.

Upon ordering a tree, citizens receive an ownership certificate to track its growth, while Netzero utilizes ground-level data collection, drones, and satellite imagery on a national scale to monitor the progress of every tree planted. This initiative reflects

Saudi Arabia's commitment to environmental stewardship and sustainable development in the face of its arid climate. Additional concerns voiced by citizens of Al Khobar include the lack of access to real-time data on air pollution levels. However, recent developments in infrastructure, such as sensor-equipped benches and street lighting in newly developed areas, offer a ray of hope. These sensors enable the region to develop a user-friendly app that provides real-time updates on air quality, empowering citizens to make informed decisions about outdoor activities and avoid exposure during peak pollution periods.

<sup>68</sup> Netzero 2023



## 8.2 Recycling time

Another pressing issue highlighted by residents is the inadequacy of recycling services in Al Khobar. The recycling landscape in Saudi Arabia as a whole all short of expectations, with disposable products, particularly single-use plastics, contributing significantly to waste generation. Items like plastic cutlery, plastic cups, and small plastic gifts for celebrations are commonplace, exacerbating the waste management challenge.

According to the Saudi Arabia National Center for Waste Management, solid waste-related environmental degradation cost the country an estimated \$1.3bn in 2021<sup>69</sup>. The bulk of municipal waste, including a significant portion from cities like Riyadh, Jeddah, and the Al Khobar-Dammam area, ends up in landfills or is incinerated untreated. However, Saudi

Arabia aims to improve its waste management practices drastically by 2040, with ambitious targets to divert 90% of waste streams away from landfills. This entails recycling 40% of it, composting 31% of it, and converting waste to energy by 16%, marking a significant step towards sustainable waste management.

<sup>69</sup> International Trade Organization 2024

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**A NEW ERA FOR  
SAUDI ARABIA AND AL KHOBAR**

## 9. A NEW ERA FOR SAUDI ARABIA AND AL KHOBAR

### 9.1 Empowering young people through volunteering

Saudi Vision 2030 endeavors to foster a responsible and active society, where citizens can contribute meaningfully to the nation. To mobilize one million volunteers by 2030<sup>70</sup>, this ambitious initiative is spearheaded by the country's large young population, 84% of whom have shown a keen interest in volunteering. To achieve this objective, the Human Resources and Social Development Ministry of Saudi Arabia has established a national volunteering portal, complemented by the introduction of an annual Saudi Volunteer Day in 2020. In 2023, the national portal reported a remarkable participation of 834,300 men and women in volunteering activities throughout the year<sup>71</sup>.

Under the stewardship of Al Khobar and other Eastern Province municipalities, an innovative municipal app, named Municipal Innovation<sup>72</sup>, has been developed to facilitate smart citizen engagement. Through this app, citizens can propose initiatives for their city, offer their services for various tasks such as city and beach cleaning, and participate in workshops.

By promoting volunteering, communities are not only engaged in addressing societal issues but also afforded opportunities to cultivate new skills and enrich their personal development.

<sup>70</sup> Kingdom of Saudi Arabia n.d. a story of transformation, page 15

<sup>71</sup> Arabnews 2024, "Saudi volunteers helped more than 75 million people in 2023"

<sup>72</sup> Eamana Gov 2024

## 9.2 Women in economic life – a city committed

Women's empowerment stands at the forefront of the nation's agenda, encompassing economic, social, and public spheres. Significant strides have already been made at the national level, including granting women the rights to drive, travel, and divorce, along with ensuring their unimpeded access to official documents.

The empowerment of women in the workforce brings substantial benefits to Saudi society. In recent years, women's participation in the workforce has increased significantly, driven by initiatives within Saudi Vision 2030. These efforts gained further momentum during the recent pandemic, which accelerated the exodus of foreign workers and created more local employment opportunities <sup>73</sup>, thereby encouraging even greater participation of Saudi women in the labor market.

This participation rate escalated from 20% in 2018 to an impressive 35% by the close of 2023 <sup>74</sup>, largely fueled by the growth of private-sector employment. Within a mere

two years, Saudi women's presence in the labor force expanded by a remarkable 64%, underscoring their pivotal role in shaping the Kingdom's future prosperity.

In the Eastern region, the unemployment rate among women dropped from 18.7% in 2017 to 8.9% in 2023. However, for Al Khobar, this transformation comes with its own set of challenges, emphasizing the city's responsibility to support and facilitate this progress.

Addressing the needs of women and families necessitates prioritizing childcare services, which enable women to pursue education, employment, volunteering, and leisure activities. Al Khobar has responded through a local solution provided by the national app Qurrah <sup>75</sup> which links childcare institutions with families seeking daily support. This initiative has gained considerable success and enjoys strong support from women.

Another challenge lies in ensuring safe transportation for women to their

workplaces. In 2018, a national public-private partnership between the Saudi Human Resources Development Fund (HRDF) and Uber <sup>76</sup> offered a program named Wusool, consisting of financial incentives covering up to 80% of transportation costs for women, resulting in 100,000 women benefiting from 20 million rides over four years. However, Al Khobar still grapples with reducing women's reliance on private vehicles or family members for their transportation needs. The recent introduction of a public transport system presents a highly viable solution, although for now the distribution of women and men on public transport stands at 16% and 84%<sup>77</sup>, respectively.

<sup>73</sup> Buissou 2023

<sup>74</sup> World Bank n.d. "Labor force rate"

<sup>75</sup> Ministry of Human Resource and Social Development 2024 "Qurrah Platform"

<sup>76</sup> Human Resource Development Funds (2024) "Transport support Wusool"

<sup>77</sup> Sharqia Development Authority n.d. (internal document)

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**CONCLUSION**

## 10. CONCLUSION

Al Khobar is a city with a rich history and a bright future. It once transformed itself from a fishing and pearling village to a major hub for the oil industry and it is now tapping into every aspect of being a modern, livable city that exploits its strategic location, diverse economy, and vibrant culture. It is developing its smart city strategy under the guidance of Saudi Vision 2030 and is implementing smart solutions across various sectors.

However, the city faces challenges such as urban sprawl, traffic congestion in some specific locations, and a lack of affordable housing. Despite these obstacles, Al Khobar is pursuing ambitious goals in environmental sustainability, social transformation, and economic diversification. The city is planting trees, reducing carbon emissions, promoting renewable energy, and combating climate change. It is also empowering its citizens, attracting investments, and fostering public-private partnerships to drive economic development.

Overall, Al Khobar is a city that is moving smartly from wells to well-being. It is actively working to improve the quality of life of its citizens, enhance its public services, and attract talent and investment. With its rich history, strategic location, and forward-thinking approach, Al Khobar is well-positioned to continue to thrive for years to come.

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