



Current Outlook to the Middle East Railways

Moving forward on the right track

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Information for the reader

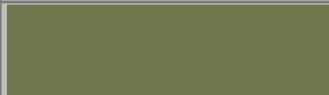
The present report offers an overview of rail transport in a number of countries in the Middle East (RAME members). It does not claim to be exhaustive. It is a compilation of information on Middle East Railways, networks and projects that was collected from various public sources and the related countries as well. The pursued objective was to describe the present situation in each country in a neutral way, without formulating any opinion or assessing the described rail transport systems.

This document is the first version. Readers are invited to inform UIC M.E. Regional Office of any new development or changes in the information related to their network. We intend to update the report in order to make it reflect the rapid development that rail transport is experiencing in the Region.

UIC M.E. Regional Office expresses thanks to all members who contributed to this report by providing information and data, and by lending us their support.

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Introduction

Transport today is of great importance for countries for their economic and social development. In order to improve people's access to social services such as health and education, countries need to ensure transportation in a cheap and safe way within their borders as well as with other countries. A good transport system may substantially increase agricultural and industrial production as it enables products to reach markets at competitive prices. It may also boost foreign trade and enhance tourism revenues and ultimately national income.

The Middle East is perhaps the fastest growing market for rail and transit in the world. Twenty years ago, the Middle East opened its doors to an influx of people and investment. Towns and cities grew in line with development.



Developing transport networks, in particular rail networks, has remained firmly on the agendas of the governments of the Middle East in recognition of the importance of building efficient and integrated modes of transport (for both freight and passengers), to cope with rapidly growing populations and increasingly congested roads, and also to aid socio-economic development.

The period for diagnosing and identifying problems has now given way to one of action. Nearly all the region's major cities are currently completing final studies prior to investment or, even better, have embarked on building major transport projects.

Major transport projects are being planned for the Middle East over the next two decades. This extraordinary level of investment will help cities meet the needs of the increasing number of people flocking to them and it could also underpin sustainable development.

Islamic Republic of Afghanistan

Islamic Republic of Afghanistan is a landlocked country located within South Asia and Central Asia. It has a population of approximately 34 million, making it the 42nd most populous country in the world. It is bordered by Pakistan in the South and East; Iran in the West; Turkmenistan, Uzbekistan, and Tajikistan in the North; and China in the far Northeast. Its territory covers 652,000 km², making it the 41st largest country in the world.



Overview

Area	652,000 km ²
Capital	Kabul
Population	Over 34 million people
Languages	Pashto, Dari
Government type	Unitary presidential Islamic republic
Currency	Afghani (AFN)
International calling code	+ 93

Total length of Afghanistan borders is around 5538 kilometer. The common borders include 1206 km with Tajikistan and 137 km with Uzbekistan in the North, 744 km with Turkmenistan in the Northwest, 2430 km with Pakistan in the East, 76 km with China in Northeast and 945 km with Iran in the West and Southwest.

Transport in Afghanistan

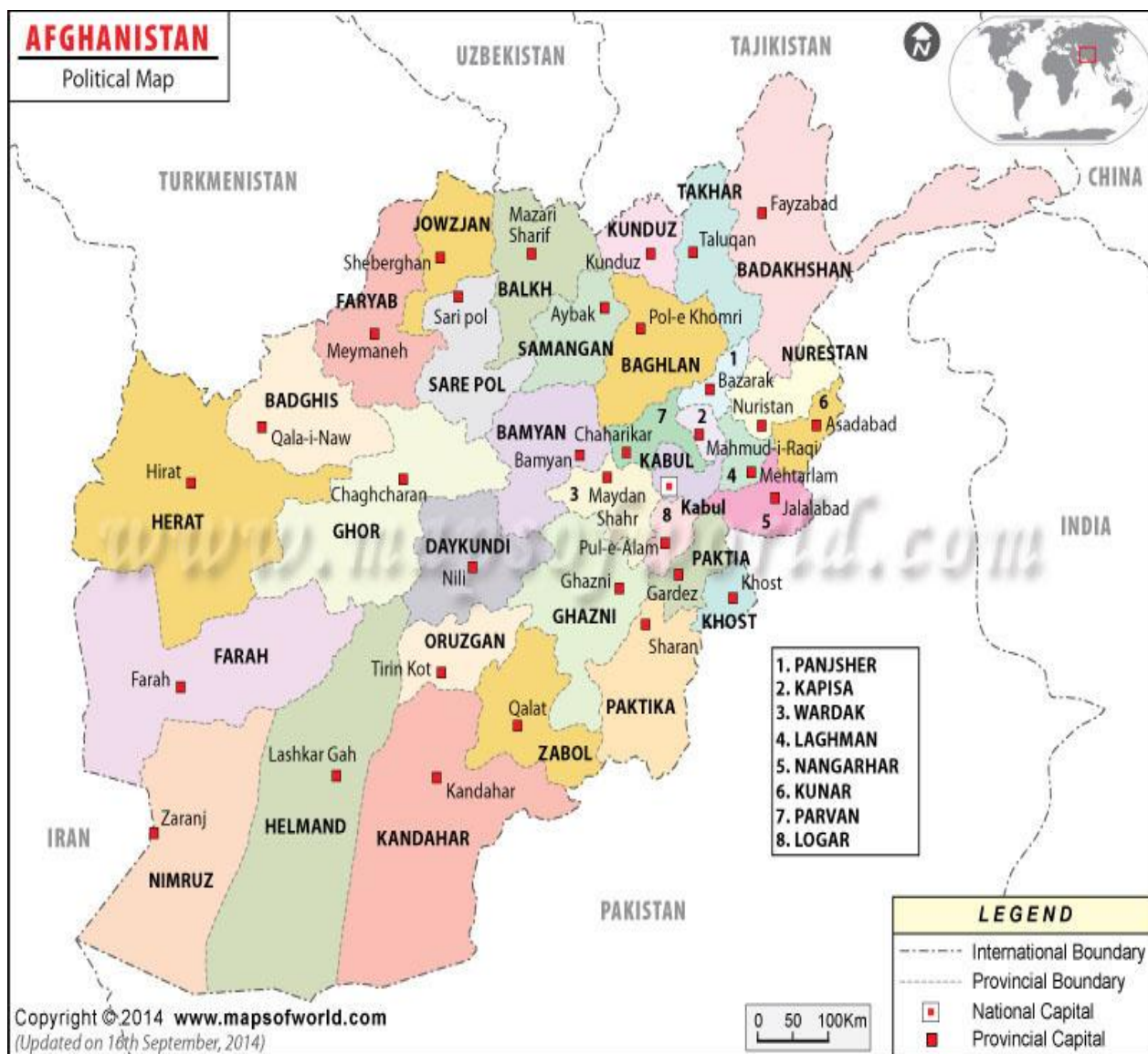
Transport in Afghanistan is limited and in the developing stage. Much of the nation's road network was built during the 1960s. New national highways, roads, and bridges have been rebuilt in the last decade to help increase travel as well as trade with neighboring countries.

Landlocked Afghanistan has no seaports but the Amu Darya river, which forms part of the nation's border with Turkmenistan, Uzbekistan, and Tajikistan, does have barge traffic. Rebuilding of airports, roads, and a railway line has led to rapid economic boost recent years.

Road transport corridors

The Northern Afghanistan is connected with three international corridors which are namely Aqina with Turkmenistan, Hairaton with Uzbekistan and Shirkhan Bander with Tajikistan.

Aqina/Andkhoy corridor is prone to be affected in winter time, as the road to this border is in bad condition and trucks can hardly drive through the muddy and bumpy road. However during dry seasons this corridor is always functional and operating. This entry point is located at a distance of 246 km from Mazar City and it comes from Kerki/Turkmenistan to Andkhoy/Afghanistan.



Shirkhan Bandar is located at a distance of 420KM to Mazar city. It comes from Panj-e Payeen/Tajikistan to Shirkhan Bandar/Imam Saheb of Kunduz Province of Afghanistan. Keeping in view the location of Hairaton and Shirkhan Bandar, they can easily get accessed throughout the year with no seasonal constraints.

Termez/Hairaton, there are three types of transportation available from Termez to Hairaton, by rail passing the bridge, by barge crossing Amu River and by road passing the bridge. Trucks, rail or barges crossing the border should bear the entire required document, since the custom department is asking for. Only passengers or trucks having valid visa and license can pass the border.

The Pakistani border, **Chamman/Spin Buldak and Torkham** is the entry points for most goods entering to the Southern Region through the port of Karachi in Pakistan, which attract many truckers and resulting in sufficient transport capacity.

The Iranian border, **Islamghala and Zaranj** are the main entry point for goods entering from the Western region and in particular port of Bandar Abbas and Chah-bahar. Islamghala is the official border crossing point and is located approximately 127km from Herat Town. Both Afghani and Iranian transporters with valid permits operate through this corridor.

Most major roads were built in the 1960s. A highway connecting the principal cities of Herat, Kandahar, Ghazni, and Kabul with links to highways in neighboring Pakistan formed the primary road system.

Long distant road journeys are made by company-owned Mercedes-Benz coach buses or various types of vans, trucks and private cars. Although nationwide bus service is available between major cities, flying is safer, especially for foreigners. There are occasional highway robberies by bandits or militant groups. The roads are also dangerous due to accidents and lack of security forces.

The highway system is currently going through a reconstruction phase. Most of the regional roads are also being repaired or improved. For the last 30 years, the poor state of the Afghan transportation and communication networks have further fragmented and hampered the struggling economy.

The following is a partial list of national roads:

- Kabul-Kandahar Highway (A-1)
- Kabul-Jalalabad Road (A-1), which links the national capital to the eastern city of Jalalabad and the Pakistani border at Torkham
- Kabul-Gardez Highway
- Kabul-Herat Highway (A-77)
- Kabul-Mazar Highway (A-76)
- Kabul-Fayzabad Highway
- Kandahar-Bamyan Highway
- Kandahar-Boldak Highway
- Kandahar-Herat Highway
- Kandahar-Tarin Kowt Highway
- Kunduz-Khomri Highway
- Herat-Islam Qala Highway
- Herat-Mazar Highway
- Route Trident (Lashkar Gah to Gereshk)
- Delaram-Zaranj Highway
- Gardez-Pathan Highway in Paktia Province (still under construction as of February 2015)

Highway 1 or **A01**, formally called the **Ring Road**, is a 2,200 kilometre two-lane road network circulating inside Afghanistan, connecting the following major cities: Mazar, Kabul, Ghazni, Kandahar, Farah, and Herat in the West or Northwest. It has extensions that also connect Jalalabad, Lashkar Gah, Delaram (Route 66), Islam Qala, and several other cities. It is part of AH1, the longest route of the Asian Highway Network.

Part of Highway 1 has been refurbished since late 2003, particularly the Kabul–Kandahar Highway, with funds provided by the United States, Saudi Arabia and others. Most work on that stretch was done by Turkish, Indian and local companies. Japanese companies were also involved near the southern Afghan province of Kandahar. In the west, Iran participated in the two-lane road construction between Islam Qala and the western Afghan city of Herat. Pakistan rebuilt the Jalalabad–Kabul Road.

The **Kabul–Kandahar Highway** is a 483 kilometer road linking Afghanistan's two largest cities, Kabul and Kandahar. This highway is a key portion of the **Ring Road**. Approximately 35 percent of Afghanistan's population lives within 50 kilometers of the Kabul to Kandahar portion of the Ring Road.

The Kabul-Kandahar highway underwent major repairs carried out by the United States and Japanese governments with assistance in planning and design by Turkish and Indian engineers. Phase one of paving was completed in December 2003 and the highway was opened to traffic. However, the road has badly deteriorated since that time, from heavy trucks and also from terrorist sabotage. Furthermore, armed guards must protect highway repair crews from ambushes. Banditry and extortion at Taliban checkpoints continue to be problems.

The **Kandahar–Herat Highway** is a 557-kilometer road that links the cities of Kandahar and Herat in Afghanistan. This highway is part of a larger road network, the "Ring Road", and was first constructed by the Soviets in the 1960s.

The **Kabul–Jalalabad Road** is a highway running between the Afghan cities of Kabul (the national capital) and Jalalabad, the largest city in eastern Afghanistan and capital of Nangarhar Province.

Rail Transport

As of 2014, the country has only two rail links, one a 75 km line from Kheyraabad to the Uzbekistan border and the other a 10 km long line from Toraghundi to the Turkmenistan border. Both lines are used for freight only and there is no passenger service as yet. There are various proposals for the construction of additional rail lines in the country. In 2013, the presidents of Afghanistan, Turkmenistan, and Uzbekistan attended the groundbreaking ceremony for a 225 km line between Turkmenistan-Andkhvoy-Mazar-i-Sharif-Kheyraabad. The line will link at Kheyraabad with the existing line to the Uzbekistan border. Plans exist for a rail line from Kabul to the eastern border town of Torkham, where it will connect with Pakistan Railways. There are also plans to finish a rail line between Khaf, Iran, and Herat.

Afghanistan Railway Authority (ARA) established in September 2012, the Afghanistan Railway Authority (ARA) intends to manage the development and operation of Afghanistan's existing and future railway system with the goal of enhancing economic growth, supporting regional development, and improving mobility for the people of Afghanistan. It also follows the safe and efficient movement of resources, goods and people throughout Afghanistan by developing integrated sustainable policies and building regional and international partnerships.



The membership of Afghanistan Railway Authority (ARA) in UIC was approved in 83rd meeting of General Assembly of UIC held in Paris on 12 December 2013 and Afghanistan Railway Authority became officially a member of this union at that moment. Coordination and uniformity

of standards and regulations of railway sector according to regional and global standards are of ARA responsibilities by becoming a member of UIC.

Proposed railways

Over the last century and a half, plenty of proposals have been made about building railways in Afghanistan. About 1928, proposals were put forward for a railway to link Jalalabad with Kabul, eventually connecting to the (then) Indian system at Peshawar. Lines to join Kabul with Kandahar and Herat would follow later.

The choice of future track gauges in Afghanistan presents several difficulties. Afghanistan is surrounded by three different kinds of gauges.

Iran to the west uses standard gauge (1,435 mm), as does China to the east; to the south, Pakistan uses 1,676 mm Indian gauge, while to the North, the Central Asian Republics of Turkmenistan, Uzbekistan, and Tajikistan use 1,520 mm gauge.

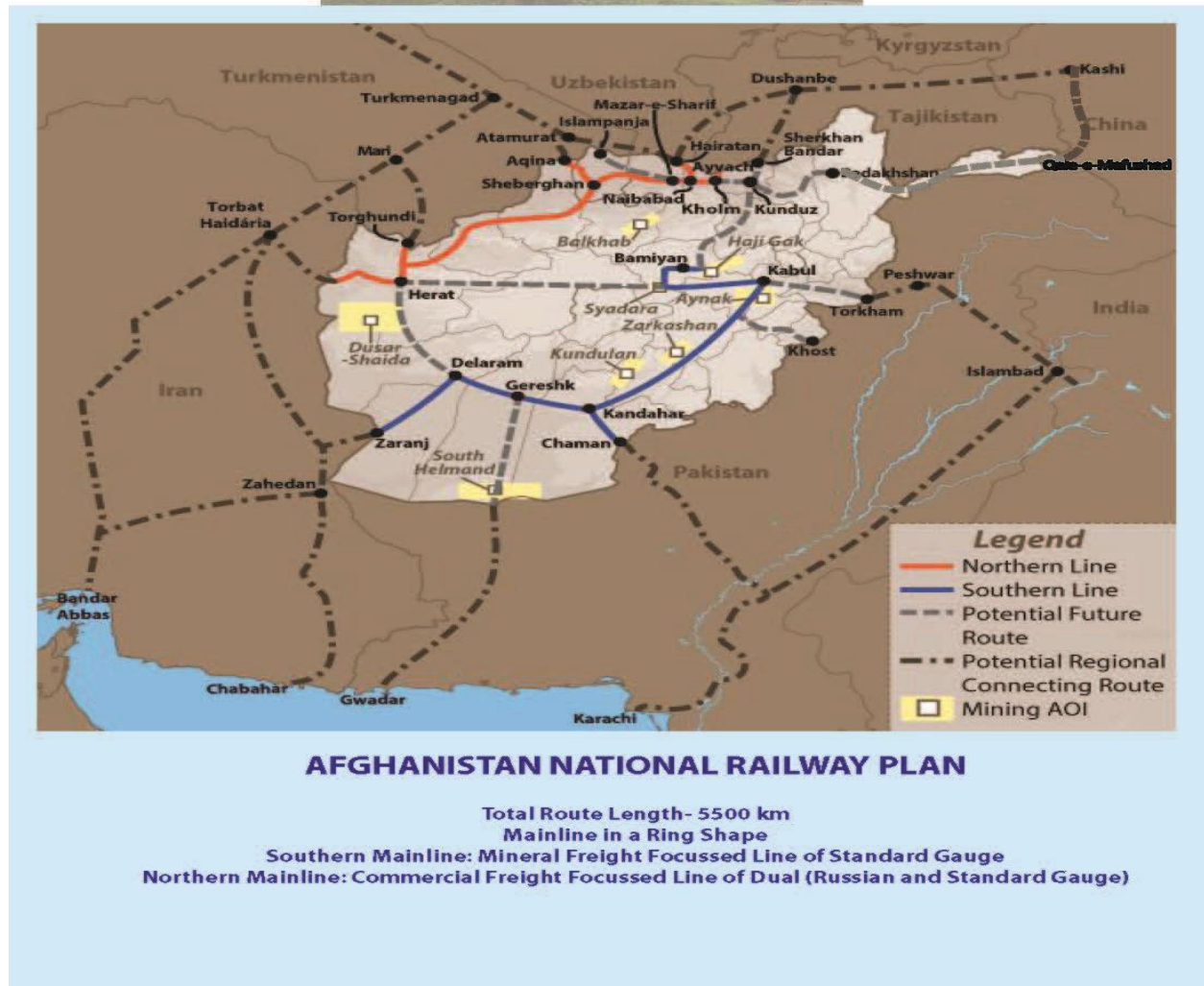
In 2010, the gauge question was resolved so that the internal network would be initially standard gauge: 1,435 mm.

Railway development programs in Afghanistan until 2027

It is supposed that 5550 km railroads to be built across the country until 2027. Technical and economic studies of nearly 2000 km of railway routes have been completed and the studies of another 2000 km will be completed by 2020. With the construction of more than 5,500 kilometers of railway routes, Afghanistan will be fully independent of both transit and transport routes.

By the construction of the railroads, the price of commodities within the country and transporting them into and out of the country will be substantially reduced. 75% of technical and economic studies of Torkham- Jalalabad- Kabul railway have been completed and the remaining part will be completed soon. Studies of this railway, which will be 212 km long, started in 2010. This railway route, which starts from Pakistani (a city in Pakistan) and extends to Jalalabad and then Kabul, connects Afghanistan to two major ports of Gwadar and Karachi. These two ports are of

the main centers of exports and imports in Pakistan. Previously, most traded commodities of Afghan traders were imported and exported via these two ports.



The start of working on **Afghanistan- Tajikistan- Kyrgyzstan- Iran- China railway link** has been agreed. This railway, also known as the **Silk Road**, connects China to European markets through Kyrgyzstan, Afghanistan, Tajikistan, and Iran.

Serving as one of the regional economic corridors, this railway route will be 2100 km long; 1100 km of which will pass through Afghan territory.

The third part of **Khaf-Herat railway** will be completed next summer. The construction of Khaf-Herat railway (191 km) has been divided into four segments. The construction phase of the first and second segments of this route has been completed in Iran; and the construction of the third segment is supposed to be completed in Afghanistan by next summer. The construction costs of the three segments of this railway are paid by the Iranian government and the costs of the fourth segment will be paid by the contributions from Italy to Afghanistan. Not long ago, the work of laying railway tracks of Khaf-Herat, started nearly ten years ago, began at the presence of Iranian and Afghan authorities. With the completion of the construction of Khaf-Herat railway, Afghanistan will be connected to the Iranian railway network and thereby to Bandar Abbas and Chabahar ports. Also, Afghanistan can be connected to the markets in Turkey and Europe via this route.

A part of the technical and economic studies of **Aqineh - Sheberghan - Herat - Kunduz - Sher Khan Bandar** has been completed as well.

- ✓ Aqineh – Atamurat – Emam Nazar segment of this railway that connects Afghanistan to Turkmenistan and Tajikistan was put into operation between Afghanistan and Turkmenistan last week.
- ✓ Aqineh, Andkhoy, Sheberghan, Mazar-e Sharif, Khelm, Sher Khan Bandar, Kunduz regions are located on this railway route. Tri-lateral railway of Afghanistan - Turkmenistan - Tajikistan is also considered as one of the routes of the Silk Road corridor. With the opening of a segment of this railway in Aqineh - Atamurat, Afghanistan will have an access to the massive transit and transport networks of Central Asian countries, Russia and Europe.

While naming **Torghondi-Herat railway** as one of the main railways in Afghanistan, technical and economic studies of this railway started in June 2016 with the financial assistance of Asian Development Bank. This railway, which is 170 kilometers long, will connect Afghanistan to Turkmenistan railway network through Herat province. Herat railway is a part of gas pipeline project between Afghanistan, Turkmenistan and Pakistan, known as the "TAPI". A railway route and a power line will be extended along the TAPI project.

The technical and economic studies of **Mazar-e Sharif - Maimana - Herat railway route**, with the length of 585 km, have been completed with the financial assistance of Asian Development Bank. This route, which is a part of the Silk Road corridor, can connect Northern provinces to the southwestern provinces. A rail route that connects China and Iran will be connected to Mazar-e Sharif - Maimana - Herat railway route.

The construction of a rail road between **Herat, Farah and Zabul** (Iran) includes the development of railroads in Afghanistan as well. Preliminary studies on this route, which is more than four hundred kilometers long, have been carried out six years ago. Afghanistan will be connected to the Chabahar port in Iran via this route.

Another important railway in Afghanistan is **Farah – Kandahar - Spin Boldak and Chaman (Pakistan)**, which is more than four hundred kilometers long. Its preliminary, technical and economic studies have been completed and Pakistan can be connected to Turkmenistan via Afghanistan Rail network. It is supposed that Afghanistan to have more than 5500 km of railways until 2027. Upon the construction of these railway routes, Afghanistan can be connected to the neighboring countries from 11 crossing points and thereby to a large network of regional and international railways. Important programs have been proposed for the connection of some provinces through railways. The provinces of Herat, Farah, Helmand, Kandahar, Ghazni, Luger, Kabul, Bamyán, Parwan, Baghlan, Ghor, Kunduz, Nangarhar and Khost are among those provinces that will be connected to each other via the internal network of railway routes. Although the overall cost of the construction of these routes is not yet known, but close to half a billion dollars will be probably spent on these railway routes. It is expected that a national program that includes the construction of over 5,500 km of railway routes will be fulfilled until 2027.

Italy helps Afghanistan, especially to complete **Harat –Khaf railway**, amounts to 70 million euros. This contract is supposed to be signed soon by the Italian Ministry of Foreign Affairs and Afghanistan Finance Ministry in Kabul. Italy has already promised to grant 30 million euros for the construction of Harat-Khaf railway. The new aid package of Italy is supposed to be spent mostly on project monitoring and railway safety. The railway entering into Afghanistan from Turkmenistan (from Aqineh) will be completed over the next few months.

In this regard, Turkmenistan has promised to construct a railway from Andkhoy to Aqineh, as well. Based on a five-lateral agreement between China, Kyrgyzstan, Afghanistan and Iran, the railway connecting China to Iran and Europe, with the length of 2200 km, passes through Afghanistan.

Currently, there is a railway from Hairatan to Mazar-e Sharif, which is 75 km in length, and actually operated. Due to its geographical location and the lack of any sea border, Afghanistan has an urgent need to construct railways. Railway construction is a good alternative for highways in the country, which brings more facilities to the citizens in the fields of transit and transportation.

Islamic Republic of Iran

Iran, also known as Persia, officially the Islamic Republic of Iran, is a sovereign state in Western Asia. The area of Iran is 1,648,195 square kilometer, standing at the 18th place in the world in terms of area. It possesses land border in West with



Iraq (1609 km) and Turkey (486 km), in North with Turkmenistan (992 km), Azerbaijan (611 km) and Armenia (35 km) and in East with Pakistan (945 km) and Afghanistan (936km) It has 2440 km sea border with the Caspian Sea, the Persian Gulf and the Oman Sea that the first two regions are amongst the world significant oil and gas extraction regions.

Overview

Area	1,648,195 km ²
Capital	Tehran
Population	Over 80.5 million people
Language	Persian
Government type	Islamic Republic
Currency	Iranian Rial
International calling code	+ 98

Iran has large reserves of fossil fuels exerting considerable influence in international energy security and the world economy. Iran's rich cultural legacy is reflected in part by its 21 UNESCO World Heritage Sites, the 3rd largest number in Asia and 11th largest in the world.

Iran is a founding member of the UN, ECO, NAM, OIC, and OPEC. Its political system is based on the 1979 Constitution which combines elements of a parliamentary democracy with a theocracy governed by Islamic jurists under the concept of a Supreme Leadership. A multicultural country comprising numerous ethnic and linguistic groups, most inhabitants are Shia Muslims and Persian is the official language.

Transport in Iran

Iran has a long paved road system linking most of its towns and all of its cities. In 2011 the country had 173,000 km of roads, of which 73% were paved. In 2008 there were nearly 100 passenger cars for every 1,000 inhabitants.



Trains operate on 11,106 km of railroad track. The country's major port of entry is Bandar-Abbas on the Strait of Hormuz. After arriving in Iran, imported goods are distributed throughout the country by trucks and freight trains. The Tehran-Bandar-Abbas railroad, opened in 1995, connects Bandar-Abbas to the railroad system of Central Asia via Tehran and Mashhad. Other

major ports include Bandar e-Anzali and Bandar e-Torkeman on the Caspian Sea and Khorramshahr and Imam Khomeini Ports on the Persian Gulf.

Road transport

Road transport is one of the most popular methods of cross-country freighting. Ample roads have made it possible to ship goods to virtually all corners of the country. Iran's network of roads connects Turkey, Nakhichevan, Armenia, Azerbaijan, Iraq and Turkmenistan, on the one side, to Turkmenistan, Afghanistan and Pakistan on the other. Measures are under way to increase productivity of the nation-wide transport networks.



Major Ports:

- **Amirabad Port:** The Special Economic Zone (SEZ) of Amirabad Port is located in the east of Mazandaran Province and at a distance of 51 kilometers from Sari, the province capital. Considering the strategic importance of Caspian Sea, of huge markets in its littoral states, and extensive commercial and economic potentials for activities such as energy resource exploitation and swap, transport, communications, and cargo transit, development of this port complex was considered as a priority, and it is expected that implementation of the port development plan in future would establish a favorable position for this port in international trades arena. Amirabad Port has the potential of providing quality services to cargo owners and public entities in regard to grains, general cargos, petrochemical products, RO-ROs, and containerized goods, as well cargo handling and storing.
- **Bandar Abbas:** it is a port city and capital of Hormozgan Province on the southern coast of Iran, on the Persian Gulf. The city occupies a strategic position on the narrow Strait of Hormuz, and it is the location of the main base of the Iranian Navy. Since 1993, Bandar Abbas has been the southern terminus of Islamic Republic of Iran Railways' main North–South corridor that links it to Yazd, Qom, Tehran and Qazvin to the north.

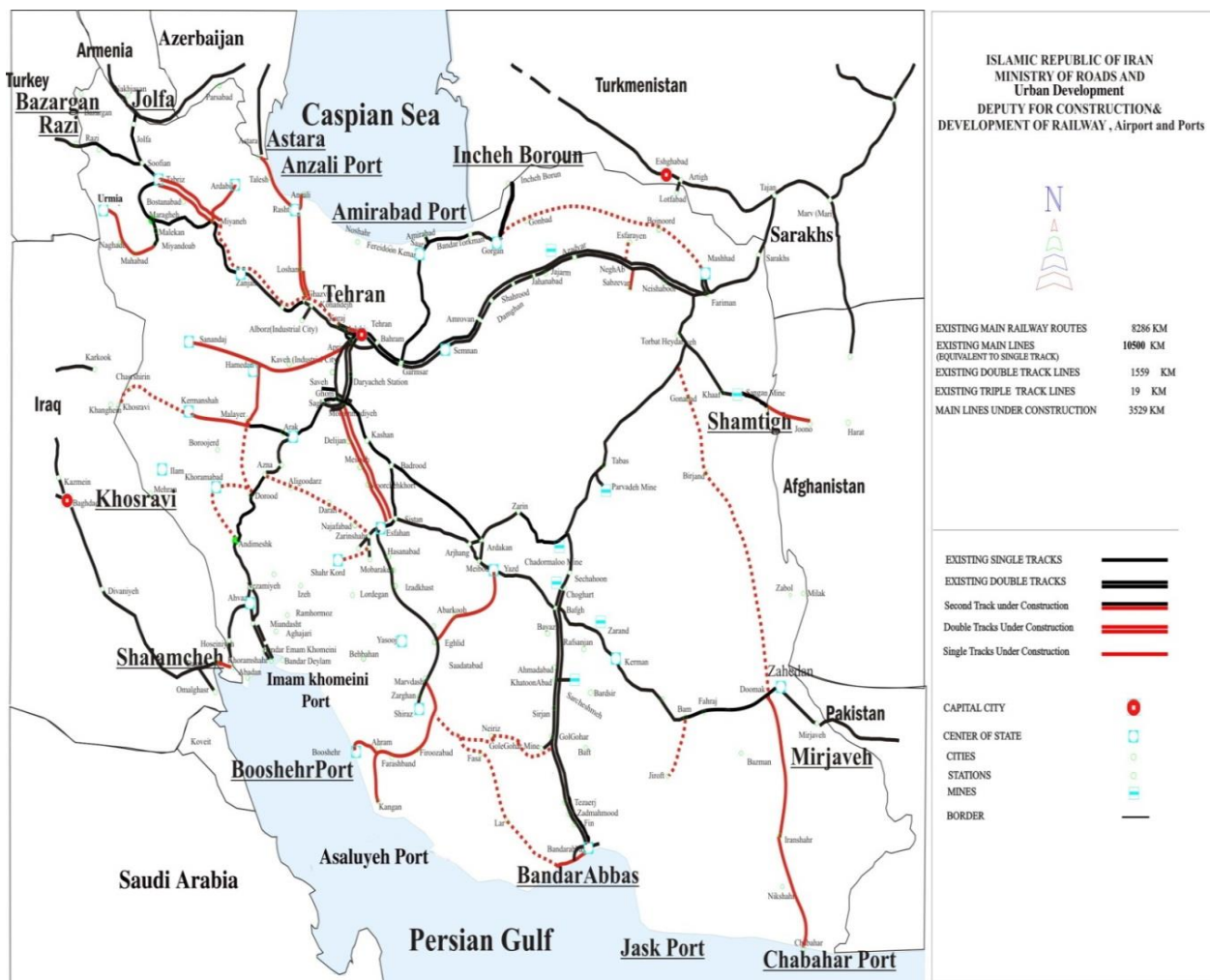
- **Bushehr Port:** The port of Bushehr is located in 28,58 N and 50, 50 E in the north end of a peninsula on the coast of the Persian Gulf. This peninsula is 14 Km long. The depth of water is near to 7m in the external anchorage leading to internal anchorage by the external channel 9200m in length and from the internal anchorage to Khor Soltani, Bushehr berth and then to Khor Booder by the internal channel 3900m in length. The channel is 140m in average width.
- **Imam Khomeini Port:** the port of Imam Khomeini is a port city on the Persian Gulf in Khūzestān Province, Iran. The port is located at the terminus of the Trans-Iranian Railway linking the Persian Gulf with Tehran and on to the Caspian Sea. This port is a transshipment point for containers, bulk and general cargo, with exclusive access to the facilities held by Iran Shipping Lines (IRISL).
- **Shahid Rajaei Port:** The port of Shahid Rajaei is located lies on the north shores of the Strait of Hormuz in southern Iran. The Port of Shahid Rajaei covers about 2400 hectares and handles 70 million tons of cargo per year, including three million TEUs of containerized cargo. The Port of Shahid Rajaei contains 23 berths with alongside depth of 15 meters. The development plan for the Port of Shahid Rajaei outlined two phases to add berths capable of berthing the largest modern vessels and to expand the port area and operations. Phase 1 has been completed. It added two new container berths that can accommodate seventh generation container ships and to handle three million TEUs. Phase 2 of the Port of Shahid Rajaei development plan, which is in progress, calls for the development of new berths of 2020 meters with alongside depth of 16 meters and the dredging of second and third basins.

The Railways of the Islamic Republic of Iran (RAI)

History

Construction of railway in Iran was a great and national expectation, which this national wish came to reality in 1927. October 15, 1927 marked the beginning of constructing the trans-Tehran railway; since the very time the construction of railway was commenced at three points from South – Center and North.

When the trans-railway was on the verge of completion, the Ministry of Roads and Transportation was committed to construct the other lines; the first line the construction of which started following the trans-railway was the Garmsar – Mashhad line. Construction of the said line was commenced on 15 March 1937, its infrastructure and rail laying up to Shahroud station (315 km) completed in 1941 and its operation began; but the constructional work from Sharoud onwards stopped due to the World War II, till end of war and removal of impediments, once again construction of this line resumed in 1947 by the Ministry of Roads and Transportation and the budget assigned by the Planning and Budget Org., and completed on 7 January 1956.



Current status of RAI

The Railways of the Islamic Republic of Iran (RAI) is the subset of the Ministry of Roads and Urban Development of I.R. of Iran. Currently, RAI has approximately 11,000 km of rail

network; of which 9500 km is under construction. The construction of some lines has been started and needs to be contributed and invested by the national and international private sectors. By taking the Iran's Vision Policy of 2025 into consideration, there are plans to expand the nationwide railroad line to 25,000 km. One of the short-term plans of transportation development is to enhance and promote the current transportation of 28 million passengers to 45 million passengers. To do so, we need to add 18% passenger trains to the rail wagon fleet by March 2018. With regard to the short-term plans, the amount of freight transportation will also need to be promoted from the current state of 34 million tons to 92 million tons. RAI will also need to add 11,000 freight wagons to the rail wagon fleet to achieve this goal so that the market share of railway transportation will be 30% of freight transport and 18% of passenger transport by 2025.

Infrastructure key rail projects

Many infrastructure projects are being carried out by RAI to develop new railway lines and to supply the rolling stock; upon realization of these projects Asia will be connected to Europe that could bring many advantages to the Middle-East countries and the region as well. Below are just some internationally important projects:



Construction of:

- **Construction of Qazvin – Rasht – Astara Route:** (372 km) is considered as the key route on the North – South corridor and is among the heaviest rail projects of Iran. It consists of three divisions:

- **Astara – Astara:** It will be accomplished by the second half of 2017.
- **Qazvin – Rasht:** track will be utilized by mid-2017
- **Rasht – Astara :** route will be constructed by Azerbaijan financing

- Connection to Iraq through two projects:

- Short-term project of Khorramshahr- Basra (51 km); operational work has been commenced by Iran with 16 km of length and the studies for the route in Iraq is in the final phase,
- Long-term project of Arak- Kermanshah- Khosravi- Qaneqin (536 km); sub-structuring from Arak to Kermanshah is underway.

- Construction of Sangan – Herat:

In order to complete Iran, Afghanistan, Tajikistan, Kyrgyzstan, and china Corridor: Constructing two blocks in the territory of Iran was completed and opened in 2016 (Summer 1395).

Construction of the third block’s infrastructure in the territory of Afghanistan is completed by the Government of Iran and its superstructure is under construction.

- Double-tracking the Mianeh – Bostanabad – Tabriz route (202 km), upon completion of this project Mianeh - Tabriz will be shortened about 200 km. Furthermore, this route will increase the speed as well as the transportation capacity on the East – West transit corridor.

- Chabahar Port- Birjand- Mashad project (1330 km) aims to make a rail link from Sarakhs to Chabahar in the south to connect CIS countries to the Persian Gulf. Executive operations are already started.

- Electrification:

- Electrification of Tehran-Mashhad and Tehran-Isfahan High-Speed Train is being constructed by the Railway of China,
- By infrastructure reconstruction and reformation and suitable fleet supplement of Tehran-Mashhad route will be utilized over the next four years,
- The main part of Qom-Isfahan infrastructure operation has been finished,



- Garmsar- Inche Borun Electrification Contract was finalized by Iran's President and the Railway Delegations' trip to Russia in March 2017,
- An MoU regarding Railway Electrification Strategic Cooperation was signed between Iranian and Russian Railways on 28 March, 2017.

- **Projects under construction**

Changing:

- the route of Qom- Arak with the length of 146 km,
- Tehran- Hamadan with the length of 260 km,
- Tehran- Tabriz with the length of 600 km,
- and Isfahan- Shiraz with the length of 493 km into High Speed is under construction.

Italian Railways is cooperating with us for Qom-Arak and Tehran-Hamadan routes.

- **Two new agreed routes among Iran, Azerbaijan, and Georgia:**

1. Bombay to Bandar Abbas and from Bandar Abbas by rails to Amirabad port and to Baku and Alat's ports, continuing its way to Poti and Batumi ports and to Ukraine, Romania, and Bulgaria,
2. Bombay to Bandar Abbas and from Bandar Abbas to Astara in Azerbaijan by railway and road and after that to Poti and Batumi ports.

- **One of RAI's under construction plans is connecting 4 Ports to the railway**

- Shahid Rajaei Port,
- Imam Khomeini Port,
- Khoramshahr, and
- Boushehr Port.

- **Fleet:** To Supplement the Fleet, Siemens is cooperating and financing for purchasing

- Diesel Locomotives,
- Electric Locomotives,
- Passenger Car, and
- Signaling.

- **International passenger train of Nakhchivan-Mashhad**

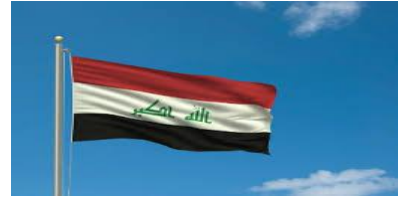
- The train was launched on December 29, 2016,
- The establishment of the train is the result of a great number of negotiations and meetings of both railway experts which caused the fulfillment of the project.

- **Silk Road transit train**

- First Silk Road transit train started its journey from east china on January 28, 2016,
- Entering Iran after 14 days,
- Traveling 10400 km.

Republic of Iraq

Iraq, officially *the Republic of Iraq*, is a country in Western Asia, bordered by Saudi Arabia (814 km) and Kuwait (240 km) from South, with Jordan (181 km) and Syria (605 km) from West with Iran (1458 km) from East and with Turkey (352 km) from North. The capital, and largest city, is Baghdad.



It has a small water border with the Persian Gulf with two famous rivers of Tigris and Euphrates that are source of ancient civilizations during the old history running from north to south of the country. Iraq is one of the richest countries in the world in the field of oil resources. Other resources include Phosphate and Sulphide Rock.

Overview

Area	437,072 km ²
Capital	Baghdad
Population	Over 38 million people
Languages	Arabic, Kurdish
Government type	Federal parliamentary republic
Currency	Iraqi dinar (IQD)
International calling code	+ 964

Iraq has a coastline measuring 58 km (36 miles) on the northern Persian Gulf and encompasses the Mesopotamian Alluvial Plain, the Northwestern end of the Zagros mountain range, and the eastern part of the Syrian Desert. Two major rivers, the Tigris and Euphrates, run south through Iraq and into the Shatt al-Arab near the Persian Gulf. These rivers provide Iraq with significant amounts of fertile land.

Transport in Iraq

Transport in Iraq consists of railways, highways, waterways, pipelines, ports and harbors, marines and airports. For more than two decades there have been plans for building a metro

system in Baghdad and parts of the tunnels have been constructed. Local government in Baghdad is arranging feasibility studies for the construction of two new underground lines.

A 37 km monorail is planned in Najaf, which would link three Shi'ite holy sites.



Iraq has a network of highways connecting it from the inside among the Iraq provinces and to the outside neighboring countries: Iran, Turkey, Syria, Jordan, Saudi Arabia and Kuwait.

Highways numbers

- Highway 1: Baghdad, Taji, Samarra, Tikrit, Mosul, Syria (Kameshli).

- Highway 2: Baghdad, Baqubah, Al Khalis, Kirkuk, Irbil, Mosul, Dohuk, Zakhu, Turkey (Silopi).
- Highway 3: Baghdad to Baqubah + Irbil to Iran (Piranshahr).
- Highway 4: Kirkuk, Sulaymaniyah, Darbinadikhan, Jalaulah, As Sa'Diyah.
- Highway 5: Baqubah, Muqdadiyah, As Sa'Diyah, Khanaqin, Iran (Qasr-e Shirin).
- Highway 6: Baghdad, Al Kut, Al Amarah, Basrah.
- Highway 7: Al Kut, Ash Shatrah, Nasiriyah.
- Highway 8: Baghdad, Al Hillah, Al-Qādisiyyah, As Samawah, Nasiriyah, Basrah, Kuwait.
- Highway 9: Karbala, Al Najaf, Al-Qādisiyyah.
- Highway 10: Al Rutbah, Jordan.
- Highway 11: Baghdad, Al Fallujah, Al Ramadi, Al Rutbah, Syria.
- Highway 12: Al Ramadi, Hīt, Haditha, Al-Karābilah, Syria (Abu Kamal).

Major Ports

- Abu Flous Port
- Al Başrah Oil Terminal
- Al-Faw Port
- Khor Al Amaya Oil Terminal
- Khor Al Zubair Port
- Port of Basra
- Umm Qasr Port
- ERBIL PORT

The first Iraqi Republic Railways train to Basra since the overthrow of Saddam Hussein's regime arrived on 26 April 2003. British troops hope to use the 68 km long railway to transport much-needed aid supplies from the port town of Umm Qasr to Basra.

In June 2011, it was announced that planning had begun for a new high-speed rail line between Baghdad and Basra, with a memorandum of understanding with Alstom having been signed.

Iraqi Railways (IRR)

Railway in Iraq dates back to 100 years ago when the first line was built by Germans in 1912 to the scale of 4' 8" in a place called "Al Karkh" somewhere in the west of Baqdad. Later on, another line was constructed from Baqdad stretched to Samikeh (current Eshaghy). Right at the time of First World War Baqdad-Samera line was built. It was in 1916 that Basra-Naserieh with the length of 125 miles was launched by English people followed by construction of Baqdad –Basra and 1920 witnessed arrival of the first train to Basra. In years 1925 and 1940 the first trains were moved between Bagdad and Kirkuk and Bagdad and Mosul respectively.



The first section of railway in what was then the Ottoman Empire province of Mesopotamia was a 123 kilometer (76 mi) length of the Baghdad Railway between that city & Samarra opened in 1914. Work had started northwards from Baghdad with the aim of meeting the section being constructed across Turkey & Syria to Tel Kotchek and an extension northwards from Samarra to Baiji was opened in December 1918.

In 1964, IRR extended its standard gauge network with a line from Baghdad to Basra which opened for freight in 1964 and for passengers in 1968. It has since been extended from Shouaiba Junction to the port of Umm Qasr.

IRR comprises 1,905 kilometres (1,184 mi) of (1,435 mm) standard gauge. IRR has one international interchange, with Chemins de Fer Syriens (CFS) at Rabiya. The system runs from Rabiya southward through Mosul, Baiji, and Baghdad to Basra, with a branch line from Shouaiba Junction (near Basra) to the ports of Khor Az Zubair and Umm Qasr, westward from Baghdad through Ramadi and Haqlaniya to Al Qaim and Husayba, with a branch line from Al Qaim to Akashat, and east-west from Haqlaniya through Baiji to Kirkuk.

Main lines in IRR

Iraqi Republic Railways (IRR) has four (4) main standard lines:

- Baghdad – Baiji – Mosul – Rabieh (524 km):

This standard rail line begins from Baghdad and is extended along Tigris towards Mosul (412 km) where it is extended towards the northwest reaching "Rabieh" at the Syrian border point in 112 km where it is connected to Turkey and Europe, which is known as the "Eastern Rapid Railway".

- Baghdad- Hella - Diwaniya - Samawah - Nasiriyah - Basra - Umm Qasr (609 km):

This route begins from west of Baghdad and enters Basra passing through Hella, Diwaniya and Nasiriyah. This line is extended towards Umm Qasr.

- Baghdad – Qaim – Alkashat (520 km):

This line, from the north of Baghdad, through Fallujah, Ramadi, Haqlaniyah is extended to "Qaim" (northwest of Baghdad, located on the border with Syria) that a secondary line of it links Qaim to Alkashat with around 144 km of length, where the Iraqi Phosphate Industry Complex is located. The line connects the Iraq to the Arab ports settled on the Mediterranean banks in Syria and Lebanon.

- Haqlaniyah – Baiji – Kirkuk (252 km)

Key projects under process

- Baiji – Mosul (163 km)
- Hella – Samawah (230 km)
- Sabunieh – Rabieh (92 km)
- Baghdad – Baiji (187 km)
- Qobeishia – Basra – Umm Qasr (150 km)
- Samawah – Nasiriyah – Qobeishia (175 km)

Future and under construction projects

- Mosayeb – Karbala - Najaf – Samawah double-track (228 km) is one the big projects under construction which will connect the key parts of the Middle Euphrates. The operational work of the project has begun in May 2002.
- Double-track of Baghdad – Kirkuk – Arbil – Mosul (555 km)

- Double-track of Baghdad – Kut – Amara – Basra (910 km)
- Single-track of Mosul – Dohuk – Zakho (137 km)
- Double-track of Basra – Fav (95 km)
- Single-track of Karbala – Ramadi (133 km)
- Single-track of Kirkuk – Sulaymaniyah (120 km)

International projects

- Khaneqin – Monteria to be linked with Iran (72 km), under final study;
- Basra – Shalamchah to be linked with Iran (35 km), final study completed;
- Marbid – Safan station, to be linked with Kuwait (17 km);
- Zakho – Khabur, to be linked with Turkey (17 km);
- Rutba station in Ramadi – Trebel to be linked with Jordan (420 km).

In Haqlaniyah the line joins the Baghdad-Al Qaim (Abu Kamal) line.

The railway lines will run all across Iraq and will cover more than 1,243 kilometres when complete.

One scheme involves the rehabilitation of what is known as the North-South line. It runs from Salahaddin province in northern Iraq through Baghdad, Kut, Aumarrah to Basra in the south. The line will be 700km in length.

A second line will connect Baghdad in the center of the country with Baquba, Kirkuk, Irbil and Mosul in the far north.

A new Baghdad Circular Railway involves building a 112km loop line around Baghdad itself. When complete, the line will be able to transport 23 million passengers a year and 46 million tonnes of goods.

The project is expected to take four years to complete.

Iraq is also seeking investment to build a 228km line that will run from Musaiib through Karbala and Najaf and on to Samawah in the south. This line will have 14 stations and will be able to carry eight million passengers a year.

The Karbala-Ramadi railway will run from Karbala in the south to Ramadi, west of Baghdad. This 113-kilometre railway is designed to connect the southern provinces of Karbala and Najaf with the phosphate mine in Akashat. In the 1980s, there were also plans to extend this line into Jordan.

A final rail project involves building a new 90km, predominantly freight line that will connect the Grand Faw port in Basra with the national railway network.



High Speed Railway Projects in Iraq

Future Railway Projects in Iraqi Railways Company (IRR)

Items	Project Name	Project Stage	Length (km)	Max speed (km/h)		Annual Volume (million)		Project Cost in US \$ Million)			No. of years, implementation
				Passenger	Freight	Passenger	Freight	Acquisition	Implementation	Sum	
1	Baghdad Loop Line Railway Project	The detailed design is old which was prepared On 1982 by Societa Tecnica Internazionale S.p.A. The length of the loop double line is 112 km and the total length of the main line plus the branch lines is 284 km.	284	200	140	23	46	430	2000	2430	5
2	Basrah- Fao	The detailed design was prepared recently in 2011 by Dorsch Consult	100	140	100	1	70	300	1410	1710	3
3	Basrah- Shalamcheh (Iran)	Preliminary study was prepared in 2004/5 by the State Company for Iraqi Railway. New detailed design is required	35	120	80	2	10	135	500	635	3
4	Mussayeb- Kerbala- Najaf- Samawa	The detailed design was prepared in 1982 by Societa Tecnica Internazionale S.p.A. The design was updated recently in 2008/9 by ITALFERR S.p.A.	228	250	140	6	2	750	2400	3150	3
5	Mosul- Duhok- Zakho- Turkey	The detailed design was prepared in 1982/3 by Henderson Hughes & Busby and now being updated by IKP, CZ Corp & Bawer Office	160	200	140	1	55	450	2160	3610	3
6	(Baghdad – ut - amarah – basrah) & (kut – nasiriyah – shuaiba – um qasr)	The detailed design was prepared in 1982/3 by Henderson Hughes & Busby. Most of the design is missing. The length of main double line (BAGHDAD – KUT - AMARAH – BASRAH) is 504 km & The length of branch double line (KUT – NASIRIYAH – SHUAIBA – UM QASR) is 406 km	910	250	140	14	35	2730	11000	13730	7
7	(BAGHDAD – BAQUBA – KIRKUK – ERBIL – MOSUL) &	The detailed design was prepared in 1982/3 by Sofrerrail and now being updated by CZ Corp. The length of main double line is (455) km and (200) km capable to be double in future. The	700	250	140	6	20	1650	7000	8650	7



	(BAQUBA – KHANIQIN – IRAN)	length of main line and the branch lines is about (700) km to (750) km.									
8	KIRKUK - SULAIMANIYA	Detailed design prepared in 2011 by Muszer Automatika	120	200	140	2	6	350	3000	3350	5.5
9	RAMADI – KERBALA	The detailed design was prepared on 1982 by Societa Tecnica Internazionale S.p.A. The design was updated recently in 2011 by Dorsch Consult	133	250	140	3	36	400	1500	1900	3
10	Ramadi – Trabil (Jordan)	Preliminary design prepared in 2010 by Dorsch Consult	400	250	120	3	12	50	4000	4050	5
11	SHUAIBA-ZUBAIR-MERBID-SAFWANKUWAIT	The detailed design was recently prepared in 2008 by Italferr. The length of the project will be determined after implementation of the other future projects. The length may be 14 km only from Merbid station to Safwan (Kuwait border)	52	250	140	2	20	150	500	650	3
12	KUT - BAQUBA	No available design or documents for the projects. New detailed design is required	250	250	140	6	20	750	3000	3750	4

Development in IRR, Iraq-Syria Direct Railway Link

Syrian Railways had been extending a rail route from Deir ez-Zor Junction towards the modern Husaibah branch terminus on the Iraqi side of the border, which was built as a through station.

Iraq-Jordan Direct Railway Link






In August 2011, Jordanian government approved the construction of the railway from Aqaba to the Iraqi border (near Traibil). The Iraqis in the meantime started the construction of the line from the border to their current railhead at Ramadi.

High-speed Baghdad-Basra line

A 650 km, 250 km/h line between Baghdad and Basra was planned, with the Iraqi Railways and Alstom in discussions. Although not true high-speed rail, it operates since 2014. New trainsets for use on the Baghdad-Basra route were unveiled in China in February 2014 before being shipped to Iraq.

Railway links with adjacent countries

All adjacent countries generally use (1,435 mm) standard gauge.

-  Turkey - via Syria
-  Iran - one link partially under construction and a second link planned
 - Khorramshahr, Iran, to Basra, Iraq - almost complete (2006)
 - Kermanshah, Iran, and the Iraqi province of Diyala - construction commenced.
-  Kuwait - no railways
-  Jordan - partially constructed - break of gauge (1,435 mm) standard gauge/1,050 mm gauge
-  Syria - same gauge - at Rabiya/Nurabiya

Jordan

Jordan (Al-Urdunn), officially The Hashemite Kingdom of Jordan, is an Arab kingdom in Western Asia, on the East Bank of the Jordan River. Jordan is bordered by Saudi Arabia to the east and south; Iraq to the north-east; Syria to the north; Palestine and the Dead Sea to the west; and the Red Sea in its extreme south-west.



Jordan is strategically located at the crossroads of Asia, Africa and Europe. The capital, Amman, is Jordan's most populous city as well as the country's economic, political and cultural center.

Overview

Area	89,341 km ²
Capital	Amman
Population	Over 7.8 million people
Language	Arabic
Government type	Unitary parliamentary constitutional monarchy
Currency	Dinar (JOD)
International calling code	+ 962

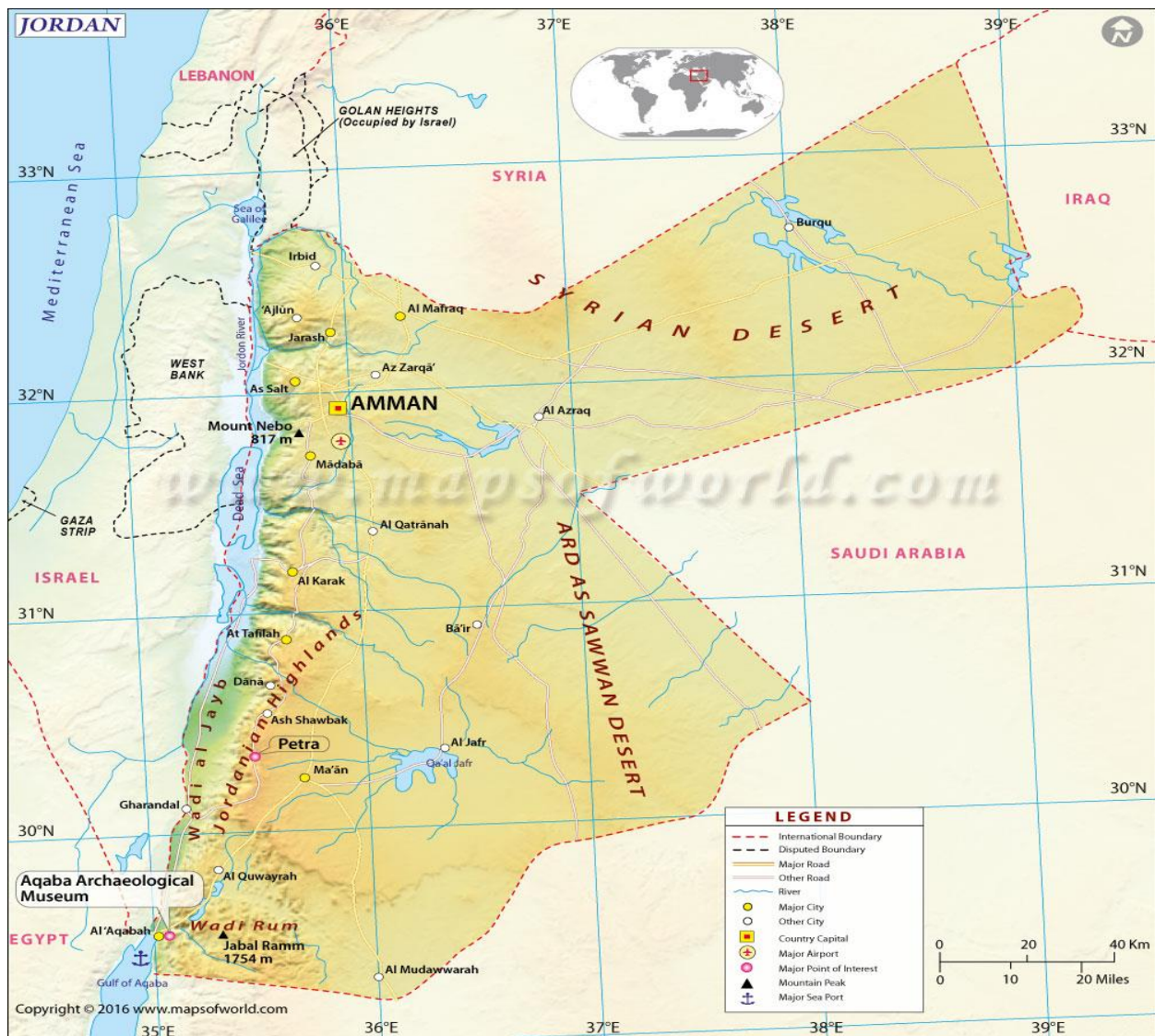
Jordan is a relatively-small, semi-arid, almost-landlocked country. Sunni Islam, practiced by around 92% of the population, is the dominant religion in Jordan. It coexists with an indigenous Christian minority. Jordan is classified as a country of "high human development" with an "upper middle income" economy. The Jordanian economy, one of the smallest economies in the region, is attractive to foreign investors based upon a skilled workforce. The country is a major tourist destination, and also attracts medical tourism due to its well-developed health sector. Nonetheless, lack of natural resources, large flow of refugees, and regional turmoil have crippled economic growth.

Transport in Jordan

Jordan is in the geographical key position serving transport mainly between

- KSA (Kingdom of Saudi Arabia) and Europe,
- Iraq and Egypt,
- Red Sea, and
- The Mediterranean Sea.

Jordan ranked as having the 35th best infrastructure in the world, one of the highest rankings in the developing world. This high infrastructural development is necessitated by its role as a transit country for goods and services to the Palestine and Iraq.



Jordan has three commercial airports, all receiving and dispatching international flights. Two are in Amman and the third is in Aqaba, King Hussein International Airport. Amman Civil Airport serves several regional routes and charter flights while Queen Alia International Airport is the major international airport in Jordan and is the hub for Royal Jordanian, the flag carrier.

The Port of Aqaba is the only port in Jordan. The port was chosen due to its being a transit cargo port for other neighboring countries, its location between four countries and three continents, being an exclusive gateway for the local market and for the improvements it has recently witnessed.

Aqaba Railway Corporation (ARC)

Railways in Jordan starts as early as the beginning of last century when the Hejaz Railway crossed Jordan as part of track joining Istanbul in Turkey to Medina in Saudi Arabia. This narrow gauge track was used for both passengers and cargoes.

When phosphate mines were discovered in the south region of Jordan, it was decided in the middle of the last century to upgrade the section of the Hejaz Railway between Al-Hasa station and Aqaba Hejaz Station and build new track between Aqaba Hejaz and the port of Aqaba.

On 14.11.1975, the first train loaded with phosphate moved from Al-Hasa mines towards the ports of Aqaba. Since that day, six trains loaded by 7000 tons of phosphate are running and participating in the economic progress of Jordan. In 1972 Aqaba Railway Corporation was established as an administratively independent entity.

ARC was given the legal authority and responsibility to construct, operate and maintain a railway system for passengers and goods transport purposes. The Board of Directors (BOD) is the highest body of ARC's management system. It is chaired by the Minister of Transport and consists of seven members. Five are governmental officials and two represent the private sector. Safe and competitive local and regional transportation is the vision of ARC and achieving ARC to a significant level in transportation and meeting the clients' demands with best efficiency, keeping staff complacence and environmental safety is considered the mission of ARC.

Infrastructure:**Permanent way:**

The length of the track is 293.7 km of the gauge 1050 mm. ARC has rehabilitation of tracks which belong to Hejaz Railway from Alhasa Station to Baten alghol station of a total length of 168.9 km.

ARC established the track from Batan-Alghol station to Aqaba port station with the same gauge 1050 mm. In 1990 ARC started relaying the track from Batn-Alghol to Aqaba port using (S-49) rail and concrete sleepers.

ARC has special machines like (Ballast cleaners, tamping machines, flush butt welding machine ...etc.)

There are 18 stations from Alabiad to Aqaba port for running the train and for crossing.

The length of the loop in each station is 450 meters (App). To run the train in safety, all station provided by signaling and telecommunication and control panel.

The rail network of Jordan is 506 km of length (narrow gauge: 1050 mm), about 212 km of which belongs to the Hejaz Jordan Railways (HJR) and nearly 294 km belong to Aqaba Railways Corporation (ARC). Most of the lines are single-track. Presently, there is no traffic between Amman and Al-Abyad. Maximum speed of the passenger trains in HJR between the Syrian border and Amman is 40 km/h, with no regular freight transportation on this route, only a few passenger trains run on this route.

Along the Aqaba Hejaz Railways (ARC), Al-Abyad, Maan, and aqaba are located and only freight transportation is tangible on this route. The speed of freight trains is 60 km/h. The maximum standard length of freight trains in HJR reaches 200 m and in ARC 400 m. The line of the Syrian border and Amman has got 21.5 kg/m rails, equipped with steel sleepers and flexible fasteners. HJR is equipped with manual barriers and ARC with automatic barriers. The existing lines are old Hejaz Railway connecting Syria to Saudi Arabia and Aqaba Railway connecting phosphate mines of Jordan to the port of Aqaba. (Trucking of phosphate is required from Shidyia Phosphate mine to the rail terminal at Aqaba Hejaz).

The railway is linked to the Aqaba port. Construction of a railway between Al Sheida phosphate mine and existing railway, 22,5 km in length.

Under construction projects

Construction of a railway between Al Sheida phosphate mine and existing railway, 22.5 km in length

Development plans of the Railways of Jordan

Jordan intends to commence construction of 897 km of rail line which will link the main industrial centers to Aqaba Port. The project is quite vital for Jordan since it shall lead into smooth and fast movement of cargoes, reduction of transport cost and bloom the trade.

Aqaba corridor will extend to Syria and from the other side will be reach Saudi Arabia and Iraq through Zarka line. This network establishes a trade corridor to link up GCC countries to Europe via Syria, Turkey or Mediterranean ports.

The above routes embrace below axis:

- North-South corridor for linkage of Syrian border to Aqaba through Zarka
- Extension of the line to the Saudi Arabian border
- Extension of the line to Iraq

Southern part of the network includes 39 km of double track 15 km of which passes through



tunnel. This section is considered to be the most congested part of the network. The section shall serve 3 terminals: Aqaba container port, Aqaba industrial yard and Al Sheida phosphate mine.

Jordan Hejaz Railway (JHR)

Jordan Railways history started from the beginning of the last century. Work started in building track link between the Northern and southern parts of Jordan in 1900.

The part of track is considered part of the main track which links Turkish land with AL-Median passing through the capital city of Amman. This is called Hejaz Railway. This track was linked by a sub-line to Ras -EL-Naqab in 1942 to carry phosphates from mines to Ras – EL-Naqab station then by tracks to Aqaba port.

Due to the importance of phosphate to the Jordan National income, it has become very necessary to find an economic and high capacity, means of transport.



For this reason, concerned Government officials had taken the decision to construct a railway line to connect phosphate mines with Aqaba port. Work had started to strengthen the part of Hejazi Railway from EL-Hasa mines to Batn-EL-Gnoul.

Technical Specifications:

Total length of the rail network: 293.7 Km

The main mission: transporting phosphate from mines to the port of Aqaba (2.5- 3 million tonnes per year).

Current railway networks and assets:

The Corporation's Fleet: The fleet currently consists of:

- six locomotives, two steam locomotives were reconstructed in 2012 and work is currently underway in reconstructing the third locomotive that is expected to be operational in the current 2013.
- The number of saloons is 15, passenger saloons were reconstructed and the number of operational saloons became 10 in addition to 4 other saloons that exist in the Aqaba Railway in addition to the locomotive that transported the founder of modern Jordan HE King Abdullah I.
- Trucks that are used to transport goods are 49, while the new inspection trucks to transport cement are 15 trucks, and 8 old inspection trucks to transport vehicles and of the like, and 5 water tankers, 2 diesel transport tankers and another two to transport fuel and 3 series service wagons for and a wagon for kitchen.

The Hejaz Railway extends from the Jaber Station (Jordanian-Syrian borders) to the Al-Modawwarah (Jordanian Saudi borders) in a total distance that is estimated at 451.5 km while the width of the railway's campus is 30 meters except the stations where the width of the railway's campus becomes 100 meters and the length is 500 meters.

The length of the Hejaz Railway in the Syrian territories is estimated at 138.5 km starting from Damascus station to the Jordanian borders and from there to the Al-Mafraq station passing through the Al Kherbah Al Samrah station then the Al-Zarqa station reaching to the Al-Mahattah center in Amman.

The railway extends south from Amman station to Umm Al Hairan Palace station then to Al Lobban, then to Al-Jeezah passing through Dab'aa station then to Swaqa then to Al- Qatraneh then back home.

The Hejaz Railway connects the Hashemite Kingdom of Jordan with the Kingdom of Saudi Arabia (KSA) through a number of stations inside the Jordanian territories that are rented by the Aqaba Railway Corporation starting Al-Abiad station passing through Al- Modawwarah station on the Jordanian-Saudi borders to reach Al Madinah Al Munawwarah.

Future plans:

The track of the Hejaz Railway extends from the furthest area in the north of the Kingdom down to its south which led to enhancing its properties that exist on the track of the route. The Corporation always seeks to enhance its revenues through its investments in these properties and for this specific purpose it established the Investment Directorate that was tasked with allocating all properties of the Corporation and conducting the appropriate marketing for them through auctions or through the sealed bid-tender for the private sector whether companies or individuals. It also endeavours to preserve them, develop and expand them continuously.

Available passenger trips:

The Jordan Hejaz Railway Corporation organizes regular weekly trips and in holidays to Al-Jeezah station near Queen Alia International Airport, and to Al Qaser station- Umm Al Hiran near the Radio and Television Corporation, and to Al-Zarqa and Al-Mafraq. The price of ticket for Al-Jeezah station is 4 dinars and 2 dinars for children below ten years old. The Hejaz Railway Corporation also organizes trips for tourist groups, families, and school and university students.

Jordan Hejaz Railway is considered as the oldest railway line from fragrant history of Arab region, which has been established 116 years ago, and might the latest transport sector at that time.

The Hejaz Jordanian Railway is considered a heritage milestone in the modern history of Jordan, In addition one of the building of the Hejaz Railway located in Ma'an city has had the dignity to be the official headquarters of the late His Majesty King Abdula Bin Al-Hussein.



The rail line is narrow gauge (1050 mm), with total length (1303) km, the maximum speed was 40 km / h while the normal speed was 25 km/h for pilgrim's trips.

The total number of JHR stations is 59, starting from Al- Kadam station in Damascus up to the last station in Al-Madina Al- Munawara city total length is (1303 km), the length of the JHR in Jordan about (452 km) and the number of stations in Jordan is 29.

Transport Sector in Jordan

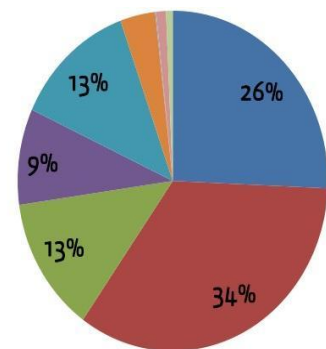
- 5 million transport daily trips
- 700.000 trips from outside Amman

The total length of the Jordanian Railway Network in operation is 509 km and is composed of narrow gauge track (1050 mm gauge).

Transport in Jordan is not only a vital sector for the kingdom’s economy but also relevant for the whole Middle East Region.

During the last 10 years Jordan has heavily invested in the transport sector:

- Expanding the Road Sector (1700 km of new highways)
- Improving Urban Mobility
- Enhancing the logistic industry
- Full opening of a new sea port in Aqaba in 2015
- Opening of Queen Alia International Airport (freight and passenger) 2013
- Planning and design of a National Railway network
- Jordan started as the first country in the



Legend for the pie chart:
 ■ Walk
 ■ Public transport
 ■ School bus
 ■ Auto (private or shared)
 ■ Yellow taxi

Middle East- a process of liberalization of the transport sector with the purpose of raising the performance, efficiency and enhancing competitiveness.

Transport Demands

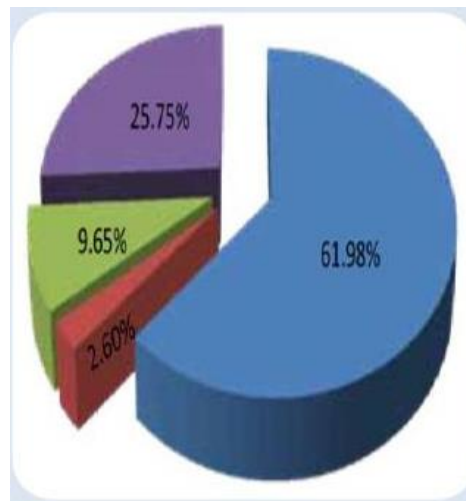
Cargo Payload for land transport in Jordan

2013: 45,000,000 tons

2030: 80,000,000 tons

Jordan is dominated by land transport

- Land Transport
- Maritime Transport
- Aviation Transport
- Supporting and Auxiliary transport Activities



Main Challenges:

- Improving public Transport (BRT and tram services)
- Improving Safety
- Environmental Protection
- The Jordan National Railway Project which has been labeled by UfM as a priority project (approx.. 950 km, investment 1.9 Billion EUR)
 - ✓ Political
 - ✓ Financial
 - ✓ Implementation
 - ✓ Capacity building
- Technical harmonization to achieve intra- and intermodal interoperability
- Situation of Syrian refugees in Jordan (enormous financial and logistic efforts for the kingdom)
- Low volume of trade to, from and across the kingdom as a result of the international economic crises and the political unrest in the Middle East, which reflected on the national economy.
- Funding for the development in Jordanian Transport Sector:

- ✓ Development of infrastructure (investment in new infrastructure, expansion of infrastructure and maintenance of existing infrastructure)
- ✓ Optimization for operation of transport services (freight and passenger)
- New strategy to set priorities (Development Roads, BRT, light and national Railways).
- Move toward Public Transit Systems.
- Efficient travel demand management systems, and increasing of the existing infrastructure capacity through utilization of Intelligent Transportation System (ITS).
- ITS is a cost efficient system, however it requires institutional capacity buildings through academic and research institutes, awareness, deployment and finally being operational.
- Implementation of ITS requires institutional capacity buildings through academic and research institutes, awareness, deployment and finally being operational.

Conducting Projects and Future Ambitions

- Preparation of JHR stations for investment and marketing to the private sector for the establishment of centers of attraction of the tourist hotels, restaurants and entertainment centers.
- JHR and some of cement factories in Jordan studying a possibility of the transfer cement to a number of cities within Jordan and to Syria.

Oman

Oman is an Arab country on the southeastern coast of the Arabian Peninsula. Holding a strategically important position at the mouth of the Persian Gulf, the nation is bordered by the United Arab Emirates to the northwest, Saudi Arabia to the west, and Yemen to the southwest, and shares marine borders with Iran and Pakistan. The coast is formed by the Arabian Sea on the southeast and the Gulf of Oman on the northeast. The Madha and Musandam exclaves are surrounded by the UAE on their land borders, with the Strait of Hormuz (which it shares with Iran) and Gulf of Oman forming Musandam's coastal boundaries.



Overview

Area	309,500 km ²
Capital	Muscat
Population	Over 4.7 million people
Languages	Arabic, Swahili
Government type	Parliament
Currency	Rial (OMR)
International calling code	+ 968

The Sultanate of Oman enjoys a strategic location at the gateway of the Persian Gulf, occupying the south-east corner of the Arabian Peninsula. Oman has a vast wealth of natural resources that support the continuous development of the country's infrastructure. This development is backed by the political stability of the country and peaceful regional and international relations.

Oman has modest oil reserves, ranking 25th globally. A significant portion of its economy is tourism and trade of fish, dates, and certain agricultural products. This sets it apart from its

neighbors' solely oil-dependent economy. Oman is categorized as a high-income economy and ranks as the 74th most peaceful country in the world according to the Global Peace Index.

As shown in the map, Oman is bordered by the United Arab Emirates to the north-west, Saudi Arabia to the west, and Yemen to the south-west. The Arabian Sea lies to the south-east of the nation while the Gulf of Oman bounds the country on the north-east.



The national capital, Muscat is shown on the map in red color enclosed in a square. Some of the well-known cities in Oman including Bahla, Buraimi, Ibra and Matrah are presented on the map as well. The map also shows the various provincial boundaries of the nation.

Transport in Oman

The Sultanate is moving steadily and expeditiously in building a world-class transport network as an enabler to its economic growth. The Sultanate's infrastructure is continues to expand with numerous road, airport, railway and sea port projects being developed.

The characteristics of the transport system of Oman are expressed in two words, “three concentrations”. They are concentration to vehicular transport, to Muscat and to private mode transportation. For concentration to vehicular transport, there are:

1) Person Movement

There are two ways of transport of persons in Oman; one is by plane and another by automobile.

2) Commodity Movement

There are three ways of transport of commodity in Oman; by plane, by ship and by automobile.

Ports

The Sultanate is served by five major commercial ports; the Khasab, the Shinas, the Sohar, the Sultan Qaboos and Salalah. In addition, another major port is being planned in Duqm. Further, there are two major ports which are used for handling specific items. The Fahl Port, located in Muscat is designed to handle export of crude oil and petroleum products. The Sur Port serves for LNG export. The Sultan Qaboos Port is located in Muscat and is the country's main commercial port. Other major ports are:

a. Salalah Port

The Salalah Port is specialized in the trans-shipment under the management of Sea Land/Maersk, as partner of Salalah Port Services.

b. Sohar Port

This port is designed to support a proposed aluminum smelter and oil refinery, as well as the needs of companies located in the nearby industrial zone.

c. Khasab Port

The Khasab Port in the Governorate of Musandam is also being expanded, with the aim of encouraging both trade with Iran and spots by cruise ships. The port is being upgraded, to promote new trade across the Strait of Hormuz and attract cruise liners.

d. Duqm Port

The Duqm Port in Al Wusta Region is being planned for regional development purpose. Dry dock will be facilitated for repair and maintenance of vessels nearby.

e. Shinas Port

The Shinas Port in Al Batinah Region was transformed from fishery port to commercial port. The authorities expect that the transformation strengthens trading function with Iran.

Rail transport in Oman

Oman Rail is targeting to start construction on its national rail network in 2018 with part of the network to be operational two years later, a senior executive from the state-owned company.

The first segment of Oman's rail network, a 207km to Al Ain from the Omani port city of Sohar, was scheduled to be completed by 2018. Oman is now moving ahead with the three other segments of the initial network that will connect the country's minerals, oil and gas sites with southern port cities of Duqm and Salalah.

Oman has adopted a strategy in developing a freight network before it starts passenger services. The design of the rail network is expected to be completed this year and tenders will be awarded in 2017.

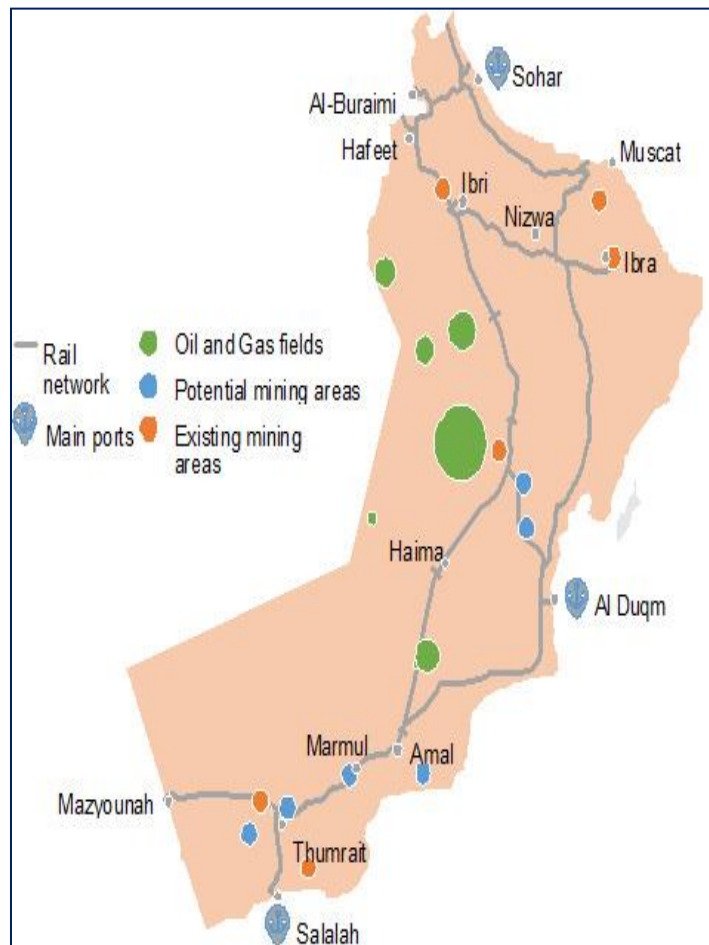
Construction of the rail network is unlikely to include public private partnerships and the government of Oman is yet to allocate funding for the reported \$11 billion project.

Oman’s rail project is part of a wider proposed trans-Gulf rail network connecting all six Gulf Cooperation Council (GCC) states that was to be finished by 2018. GCC Assistant Secretary General for Economic Affairs Abdullah Bin Juma Al Shibli said on Tuesday the project will go ahead after the UAE Minister of Infrastructure Development, Abdullah Belhaif Al Nuaimi, said in February that 2018 was an unrealistic deadline and declined to comment whether he thought the regional project would be completed.

Oman Rail

Key Rail Projects

The anticipated total length of the Oman National railway network is 2135km. It is divided into several segments linking Oman's borders with the UAE to Muscat, as part of the GCC Railway Network and also to the southern parts of the country - Port of Al Duqm, the Port of Salalah and the Yemen border. The railway is double track, non-electrified and it is designed to serve mixed freight and passenger traffic. Freight train maximum speeds shall be 120 km/hr and for passenger trains - 220 km/hr (the corridor will be designed to 350 km/hr for possible future line-speed increases).



The railway design shall follow international standards (e.g. UIC, AREMA) and best practice.

Supply Chain

Oman Rail's Supply Chain management division's objective is to ensure the most efficient procurement of quality goods and services, as economically and conveniently as possible. Oman Rail's contracting and procurement activities are centralized to manage the company's total procurement process and ensure that it gets the best possible value for money when procuring goods and services, by the creation of maximum in-country value and through a fair and transparent tendering process.

Diversity and Inclusiveness

Oman Rail recognizes the contribution of a diverse workforce to the history of the rail industry

Oman railway network construction phases		
Phase	Route	Length, km
1a	Sohar – Sunaynah – UAE border (near Al Aïn)	136
b	Al Buraymi branch	27
c	Suhar yard branch	8
2a	UAE border (Al Aïn) – Sanaw	330
3a	Sanaw – Ad Daqm	340
4a	Ad Daqm – Thamarit	554
b	Thamarit – Salalah Port	142
5a	Sohar Port – Masqat (Al Misfah)	242
b	Masqat Station	20
6a	Al Misfah – Sanaw	146
7a	Sanaw – Ibra	84
8a	Thamarit – Al Mazyunah (border with Yemen)	157
9a	Sohar Port – Khatmat al Malaha (border with UAE)	58
Total		2244

(Source: Railway Gazette)

internationally and hence Oman Rail believes it is essential to promote equality and diversity to achieve our aims and live our values.

Diversity for Oman Rail means we acknowledge the full variety of people who work for us, while welcoming different and fresh ways of thinking, encourage innovation and a culture of speaking openly, when things can be done better.

Performance Management and Omanization

The philosophy of Oman Rail is to have a performance orientated, open and responsible culture, where each person has the opportunity to grow and develop, while contributing to the development of the company, with those demonstrating higher performance having an accelerated path and recognition. Within the context of equality and diversity, Oman Rail will work to focus on developing the capability of Omani nationals, to play significant roles within Oman Rail and the railway sector in Oman.

Railway Stations Under Construction

(all 1,435 mm gauge)

- Al Ain - border with UAE
- Hafeet - junction
- Dhank
- Ibri
- Fahud
- Quam Alalam
- Bulk Terminal
- Haima - junction for Al Duqm
- Amal
- Marmul, Oman
- Thumrait - junction for Salalah
- Mazyunah - near border with Yemen

- Hafeet – junction
- Al Buraimi
- Sohar
- Khatmat
- Al Misfah
- Sinaw
- Ibra - mine

Oman Rail is targeting to start construction on its national rail network in 2018 with part of the network to be operational two years later, a senior executive from the state-owned company told Gulf News.

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Qatar

Qatar, is a sovereign country located in Western Asia, occupying the small Qatar Peninsula on the northeastern coast of the Arabian Peninsula. Its sole land border is with Saudi Arabia to the south, with the rest of its territory surrounded by the Persian Gulf. A strait in the Persian Gulf separates Qatar from the nearby island country of Bahrain, as well as sharing maritime borders with the United Arab Emirates and Iran.



Overview

Area	11,586 km ²
Capital	Doha
Population	Over 2.3 million people
Languages	Arabic, English
Government type	Unitary constitutional monarchy
Currency	Riyal (QAR)
International calling code	+ 974

Qatar is a high income economy and is a developed country, backed by the world's third largest natural gas reserves and oil reserves. The country has the highest per capita income in the world. Qatar is classified by the UN as a country of very high human development and is the most advanced Arab state for human development.

Transportation in Qatar

Doha has a comprehensive road network made up primarily of two and three-lane dual carriageways (divided highways). As a result of Doha being a relatively young city circling a central area, a majority of main streets are inordinately wide highway-like motorways that usually include service roads and large medians. While traditionally roundabouts have been used as intersections in the city, they are being rapidly phased out for signalized intersections as they

are proving ineffective at regulating the increased traffic flow in turn overloading the city's road network. Most major roundabouts have been either converted to intersections or interchanges.



Highways

There are five main highways connecting Doha to its neighboring cities. These are the Dukhan highway to the west of the city, the Al-Shamal Road, connecting Doha to the north of the country, the Al-Khor Expressway, connecting Doha to the northern town of Al-Khor, and the Wakrah/Messaid Road, connecting Doha to the south of the country. Finally, Salwa Road runs through south Doha and connects the city to the Saudi border to the south of the country.

These highways are all currently undergoing expansion, and are being expanded within Doha itself.

Doha Expressway (D-Ring Road/Al Shamal Road)

The Al Shamal-Road has traditionally connected to the D-Ring Road in Doha, a three-lane dual carriageway that connects the city on a north-south axis. The Al Shamal Road is also undergoing significant expansion as part of the Doha Expressway project. The road is being expanded into a four-lane highway (a total of eight lanes) with major interchanges which will better serve the country than the existing two-lane dual carriageway. Furthermore, the new Doha Expressway will connect Doha with the planned Qatar-Bahrain Friendship Bridge at al-Zubara, connecting the two Persian Gulf states in a similar manner Bahrain and Saudi Arabia are currently connected.

Lusail Expressway

The Lusail expressway is expected to connect the new city of Lusail, currently being constructed north of Doha, to central Doha, along with connecting the Pearl Island to the mainland. The expressway is expected to take the path along the former Istiqlal Road, now Lusail Street, and will be a 4-lane dual carriageway passing through the city. The expressway will extend from Lusail City, through Rainbow roundabout, the Qatar Sports Club roundabout, and the fire department roundabout.

Dukhan Highway

The existing Dukhan highway has been undergoing a reconstruction project for several years, with new interchanges having been constructed and the road being significantly expanded. In the future, it is planned to expand the highway so that it connects directly into Doha through a system of underpasses and overpasses, with plans to replace the Tilted Roundabout, the Markhiya Roundabout, and the TV Roundabout, all major roundabouts in Doha, with underpasses and overpasses.

Salwa Highway

The Salwa Highway project's first phase has been completed. This phase involved the expansion of the highway, which connects Doha to the southwestern town of Salwa on the Saudi Arabian border, into a four-lane highway with grade separated interchanges. The rest of Salwa Road is expected to be expanded and upgraded, from the recently completed Industrial Area Interchange to the Jaidah flyover, including the construction of an underpass at the Ramada signals, Doha's busiest traffic light intersection. This project is not expected to commence until after the completion of the Doha Expressway.

F-Ring Road

The F-Ring Road will be the sixth ring road in Doha, and is being constructed as part of the transportation network leading to the New Doha International Airport. The new highway will connect the airport to the corniche at the new Ras Abu Aboud interchange, currently under construction, and will involve a new ring road south of the E-Ring Road.

Major Ports

- Al Rayyan, Al Rayyan Marine Terminal
- Al Shaheen, Al Shaheen Terminal
- Doha, Port of Doha
- Halul Island, Port of Halul Island

- Mesaieed, Port of Mesaieed
- Ras Laffan, Port of Ras Laffan

Rail Projects

Qatar Rail's answer to Qatar's transportation challenges lies in three major projects:

- The Doha Metro: a mostly underground rail network which connects communities within Doha and its suburbs
- The Lusail Light Rail Transit (LLRT): a tram network providing comfortable and convenient travel within the new city of Lusail
- The Long Distance Passenger and Freight Rail: connecting cities in the north and west with Doha, and the country with the forthcoming GCC rail system

Once all the projects are completed by 2030, the three networks will act as one integrated system, allowing passengers to easily transfer between them.

To meet its mandate, Qatar Rail has been given the responsibility to:

- Develop the railway sector regulatory framework
- Develop railway standards, that includes safety, environment, and customer service
- Managing costs and feasibilities
- Appoint and oversee the programme management consultants to ensure timely delivery and quality of service
- Integrate the rail network with other pre-existing modes of transport
- Develop railway sector policies (including fare policies) and strategies
- Enforcing regulations and standards on all rail service operators

Metro Projects:

The Doha Metro is very improminent and visible project in Qatar. It will serve both the capital and the suburbs with all major locations within easy and convenient reach. Most of the Doha

Metro lines will be underground, so tunnelling plays a major role in construction. Qatar is using specialized equipment known as tunnel boring machines (TBMs) to dig the underground sections. This means that there is very little disruption to life on the surface.

The metro system will be built in two phases: the first will see the construction of three out of the four lines (Red, Gold, and Green) and 37 stations. These lines are expected to be open to the public by 2020. The second phase will be completed by 2026, and will involve the expansion of the phase one lines, and the construction of an additional one – the Blue Line. Another 72 stations will also be built.

Stations play an important part – both practically and culturally – of any metro system. Architecturally, the stations will reflect the heritage of the country, with a ‘vaulted spaces’ design inspired by traditional Bedouin tents. The largest station, Msheireb, will fall at the heart of the Doha Metro with the Red, Green and Gold lines all meeting at this point.

Long Distance:

Qatar Rail is overseeing the construction of Qatar’s multi-billion dollar state-of-the-art integrated rail network. The company will then oversee the management, operation and maintenance of the country’s rail network.

Three major projects make up Qatar Rail’s responsibilities: the Doha Metro, the Lusail Light Rail Transit (LRT) network, and the Long Distance Passenger and Freight network, which will be connected to the wider GCC rail network.

The planned national network will unify all railways in Qatar and will be connected to neighboring countries to create the region’s first fully integrated rail system. By combining traditional elements with modern features, these programs will generate the region’s most comfortable, reliable, and safe railway system.

The Long Distance Passenger and Freight Rail will serve to connect residents to not only other cities in Qatar, but to population centers in the rest of the Gulf Cooperation Council (GCC) countries that includes Saudi Arabia, Bahrain, Kuwait, the UAE, and Oman, through the proposed regional rail network. This rail network will have positive ramifications on the country's environment through the reduction of greenhouse gases as a single journey effectively replaces the need for hundreds of cars and trucks to take the same trip.

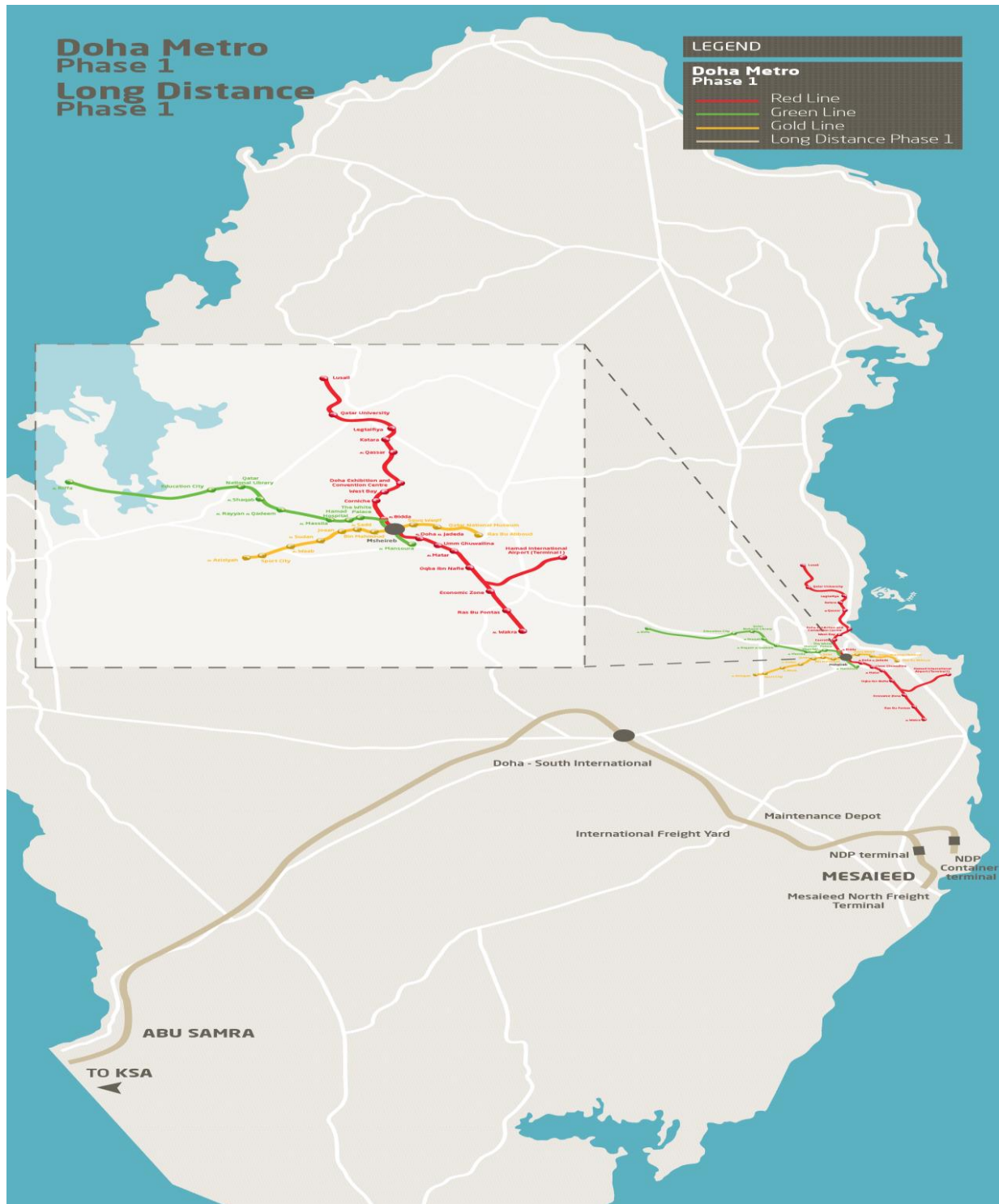
The Long Distance Passenger and Freight Rail network consists of five main lines:

- Freight line from Mesaieed Port to Ras Laffan.
- Mixed line (passenger and freight) from Doha to Dukhan.
- Mixed line from Doha to Al Shamal.
- Mixed line from Doha to Saudi Arabia.
- High speed passenger line from Doha to Bahrain.

Phase 1 includes construction of nearly 143 kilometres of operational railway track with 34 turnouts (main tracks), one station, three freight yards, one intermodal yard, 59 bridges and 36 culverts (a tunnel for a road or drain going under a road or railroad). The scope of work comprises civil works (earthworks, bridges, culverts, track works, freight yards, intermodal yard and passenger station, its architecture and MEP), railway systems manufacture, installation and integration of equipment; manufacture and supply of rolling stock, and railway operation and maintenance.

To be developed in distinct phases, the Long Distance Passenger and Freight Rail network will cover a distance of 350 kilometres at a speed ranging between 220 and 270 kilometres per hour for passenger trains and 120 kilometres per hour for freight trains.

The network will be executed over four phases, with plans to initiate the enabling works in 2015 and complete the fourth and final phase in 2030. After completion of this network will include lines to Saudi Arabia, Bahrain, the new port, and Hamad International Airport outside of Doha.



Lusail Light Rail Transit

Lusail City, just north of Doha, is a visionary waterfront development currently under construction. Designed to be an environmental and self-sustaining community, the city will have residential and commercial developments, including schools, medical facilities, shopping centers, and more.

In line with the vision of Lusail, the Lusail Light Rail Transit (LLRT) network will serve the residents of the city by providing an environmentally-friendly mode of transportation that will not only connect destinations within Lusail, but also to Doha by way of the Doha Metro.

The 38.5 kilometer LLRT is on schedule, and will have:

- Four lines.
- Approximately 15 km of double-track and 5.5 km of single track, 10 km of underground double track (cut and cover) sections, and an underground storage south of the line.
- 25 stations in various configurations (center platform, side platforms and split side platforms).
- Seven underground stations, four at the Marina District, one at Entertainment City, one at Energy City, one at Qatar Petroleum District and one at the Pearl-Qatar station.
- One viaduct to accommodate LRT passengers with a connection to the regional railway.
- One LRT depot and operation, maintenance and storage facility and test track, utilizing the latest state-of-the-art 'Catenary free' train power service.

Qatar Railways Company (QRC)

Rail Projects

The Railway Projects include below sections:

- 1- Qatar metro line, 212 km
- 2- Construction of a long distance line, 490 km
- 3- Lusil light rail, 28 km
- 4- Westbay transit system, 19

It will feature 350 km of track, 170 km of which are underground, 100 stations (seven of which are underground), 70 km elevated line and 110 km tunnel. It is planned that a passenger rail line to be extended from Doha to Saudi Arabia, 180 km from Doha to Bahrain and 35 km freight line.

The railway shall enjoy a state of the art, safe and environmentally friendly system meeting the Qatar needs.

Saudi Arabia

Saudi Arabia, officially known as the **Kingdom of Saudi Arabia (KSA)**, is an Arab state in Western Asia constituting the bulk of the Arabian Peninsula. With a land area of approximately 2,150,000 km², Saudi Arabia is geographically the fifth-largest state in Asia and second-largest state in the Arab world after Algeria. Saudi Arabia is bordered by Jordan and Iraq to the north, Kuwait to the northeast, Qatar, Bahrain, and the United Arab Emirates to the East, Oman to the Southeast, and Yemen to the South. Most of its terrain consists of arid inhospitable desert or barren landforms.



Overview

Area	2,149,690 km2
Capital	Riyadh
Population	Over 32.5 million people
Language	Arabic
Government type	Unitary Islamic absolute monarchy
Currency	Saudi riyal (SR) (SAR)
International calling code	+ 966

Transport in Saudi Arabia

The Kingdom of Saudi Arabia has initiated many mega infrastructure development projects in the country, and the extensive development of the transportation network has followed suit in support of various economic developments. As a result, the country now boasts an extensive transportation network.

Roads in Saudi Arabia vary from eight-lane roads to small two-lane roads in rural areas. The city highways and other major highways are well maintained, especially the roads in the capital Riyadh. The roads have been constructed to resist the consistently high temperatures and do not reflect the strong sunshine. The other city highways such as the one linking coast to coast are not as great as the inner-city highways but the government is now working on rebuilding those roads. In October 2013, a group of auto enthusiasts drove some 2,000 km through Saudi Arabia in search of the best driving road, and named the Jeddah-Taif-Al-Hada highway as "motoring nirvana".

Saudi Arabia encourages road transport as it has maintained one of the lowest petrol prices in the world, at \$0.48 per gallon (\$0.13 per liter).

Highways

Some of the important inter-city highways include the following:

- Dammam - Abu Hadriya - Ras Tanura Highway 257 km
- Khaybar - Al Ola Highway 175 km
- Mecca - Madinah Al Munawarah Highway 421 km
- Riyadh - Dammam Highway 383 km
- Riyadh - Sudair - Al Qasim Highway 317 km
- Riyadh - Taif Highway 750 km
- Taif - Abha - Jizan Highway 750 km
- Medina - Tabuk Highway 680 km
- Jeddah - Al Leith - Jizan Highway 775 km
- Jeddah - Mecca Highway 80 km

Major Ports

- Duba Bulk Plant Tanker Terminal
- Jeddah Islamic Port
- Ju Aymah LPG Terminal
- Ju'aymah Crude and LPG Terminals
- Jubail Commercial Port
- King Abdul Aziz Port (Dammam)
- King Fahad Industrial Port (Jubail)
- King Fahad Industrial Port (Yanbu)
- Port of Jizan
- Port of Al Qadimah
- Port of Dhiba (Duba)
- Port of Qadimah
- Port of Rabigh
- Port of Ras Al Khafji
- Port of Ras Tanura
- Port of Ras al Ghar

- Port of Ras al Mishab
- Port of Sharmah
- Port of Zuluf
- Yanbu Commercial Port

Rail Transport in Saudi Arabia

Construction of the rail network in Saudi Arabia traces back to 1951, during which a railway of 571 km was opened. This line begins from Dammam, and after passing Zahran, Baqiq, Hofuf, Harz and Kharj, ends in Riyadh. In 1985, a branch line of 332 km was constructed from Hofuf to Riyadh.

The first railway in modern Saudi Arabia was the Hejaz Railway, from the border of Jordan to Medina. This 1,050 mm, narrow gauge railway opened in 1908, but closed in 1920.

Modern railways were introduced in Saudi Arabia after World War II, to facilitate the transport of goods for the Arabian American Oil Company, or Aramco (now Saudi Aramco), from ports located on the coast of the Persian Gulf to warehouses in Dhahran. Construction began in September 1947, and the first line was inaugurated on 20 October 1951. It was initially run by Aramco. On 13 May 1966, the Saudi government issued a royal decree establishing the Saudi Railways Organization (SRO) to operate the railway system. Several development projects have been completed since then, including an extension of the line to Riyadh, construction of several passenger terminals and the opening of a dry port in Riyadh.

As a result of over-reliance on road and air travel, the rail transport has not received a similar level of investment in Saudi Arabia. However, there are now plans to add more tracks and develop new railway routes.

There is a large scale railway project Haramain High Speed Rail Project underway in the Western province, connecting Makkah with Jeddah and Madinah city. The primary objective of

this railway line is to provide an alternative for the Muslim pilgrims traveling between the three cities.

The Al Mashaaer Al Mugaddassah Metro Southern Line is part of the Makkah Metro rail transit system, which was developed in Makkah city. This is a 18.1 kilometers (11.2 miles) track developed as exclusive shuttle a forecasted 8 million pilgrims between Mecca, Mount Arafat, Muzdalifa and Mina in the annual Hajj pilgrimage.

Saudi Railways Organization (SRO)

The Saudi Railways Organization (SRO) is one of two state-owned companies that operates Saudi Arabia's rail network. The SRO operates a network of railways with a total length of approximately 1,380 kilometers. The network consists of two main lines:



1. A 449 km passenger line that links Dammam with Riyadh,
2. A 556 km freight line that connects the King Abdul Aziz Port in Dammam with Riyadh.

In addition, about 373 km of auxiliary lines branch from SRO's main lines and connect some industrial and agricultural areas, and military sites, with export ports and residential areas.

There are plans to extend the network to the Red Sea port of Jeddah and, eventually to the borders of Jordan, Yemen, and perhaps all the way to Egypt.

The network consists of the following lines:

Dammam-Riyadh line

Dammam-Riyadh Line

The Dammam-Riyadh line is a 449 kilometer passenger line that connects Dammam with Riyadh, via Al-Ahsa and Abqaiq.



Riyadh Station



Passenger train on the Dammam-Riyadh Line

Cargo line

The cargo line is a 556 kilometer line that begins at the King Abdul Aziz Port in Dammam and passes through Al-Ahsa, Abqaiq, Al-Kharj, Haradh and Al-Tawdhihiyah, before terminating in Riyadh.

Planning for the line started in 1947 with an agreement between King Ibn Saud and Aramco to lay a 547 km (about 340 mi) freight line. Bechtel Construction Company was chosen to build the rail line and a sea port at the eastern end of the rail line at Dammam. Construction of the line began in September 1947. In 1948, veteran American railroad engineer James H. Gildea was hired to oversee the project.

Rolling stock

The SRO's fleet consists of 102 diesel locomotives and 75 passenger cars. These are classified into 12 cars of *Al-Rehab* class with a capacity of 540 seats, 9 cars of *Al-Taleaa* class with a capacity of 652 seats, 25 cars of *Al-Qafila* class with a capacity of 2,012 seats along with 2 special-class cars, 8 diner cars, 12 luggage and power generation cars and 1 car that has been specially fitted as an ambulance car to enhance safety. The company has 2,596 cargo cars of

different sizes and types, including 858 cars for double stacking of containers, 948 regular cars for containers, 201 cement transportation cars, 135 grain hauling cars, 47 flatbeds for transporting vehicles and 60 cars for hauling rocks. The capacity of each double stacking cargo car is 80 tons. Regular cars for containers have a capacity of 50 tons. The total capacity of cargo handling by both types of cars in SRO is 48,250 tons.

Spanish manufacturer CAF has in delivered 2012 delivered eight fast diesel locomotives, with one driving van trailer passenger car and four other passenger cars, with a leading power car unit; plus two spare power cars. They are used on the Dammam–Riyadh Line. During 2013 the travel time is 4:15 but there is a target of 3:00 for the future.

Major rail projects

The most important railway projects of Saudi Arabia include construction of a 100 km new line from Dammam to the industrial complex of Jubayl. Of course, the feasibility studies on this route are still under way. The single route is planned to be equipped with manual barriers, 60 kg rails of CWR type, concrete sleepers and flexible fasteners.

Saudi Arabia is working on a national plan in order to develop its rail network. This development plan has three key parts:

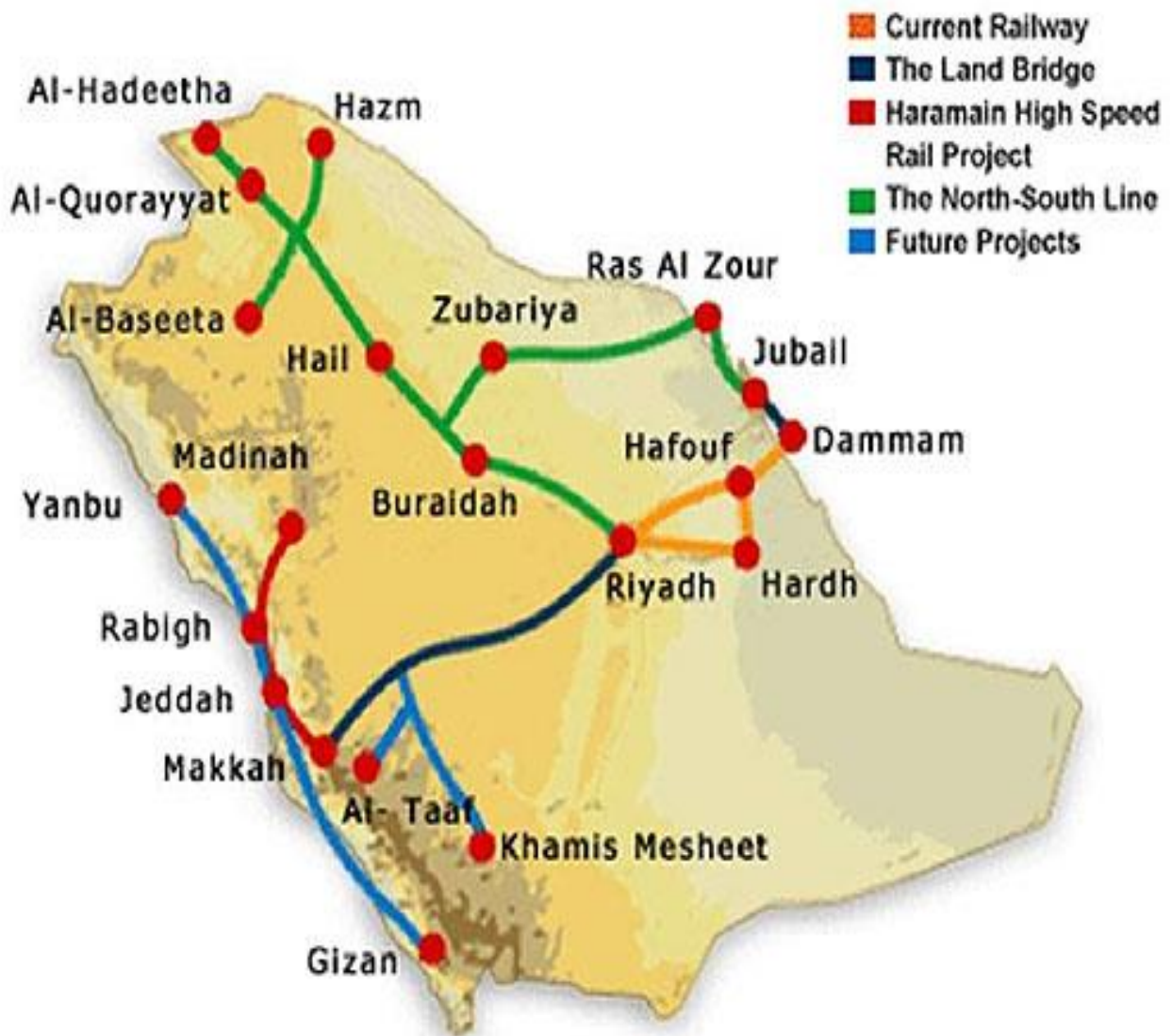
1. The railway of North – South (passenger & freight) with the length of 1765 km; for rail connection with the other member states of the Persian Gulf Cooperation Council;

The line continues from Riyadh and stretches towards the new gate of Jordan Kingdom border with the length of 2400 km. Some sidelines branch off the main line towards two mineral districts of Al Zubideh and Al Jalimid to transport phosphate and sulfur. The construction was complete in 2011 on which over 100-wagon trains have moved on towards Ras-al Kheir district where the cargos are exported by Mines Company owned by mineral districts.

2. Construction of new line from east to west (land bridge) between Riyadh and Jeddah (950 km) and a direct link from Riyadh to Jubayl port and phosphate capacitors in the east north with

the length of 170 km. The line serves to connect east of the country to west, from Riyadh to Jeddah through Dammam existing line.

3. The "Haramain high-speed train" about 450 km linking Mecca, Jeddah, New economic city of Malek Abdollah and Medina together. The project also links up the said cities to the Jeddah international airport. The line shall pave the ground for fast and safe transport of pilgrims to the holy cities of Saudi Arabia. The project, in addition, assist to boost public transport services to the trade centers.



The project's first stage consists of two parts. Part one includes legal measures to establish Chinese-Saudi joint venture. 100 km of the line is almost finished and ready to be operated. The rest are complete by 20-70%. Part two includes construction of Mecca (5%), Jeddah (8%), Malek Abdollah economic city (15%) and Medina stations (7%).

In the second stage of the project work shall continue for construction of tracks, signaling and telecommunications system and supply of locomotive. To do this a Saudi-Spanish Company directed by Talgo Company of Spain is established to build the locomotives and OHL Company undertakes construction of lines with DEMERTRONIC Company dealing with signaling and telecommunications. The maintenance operations shall cover 12 years.

Important project of the Gulf Cooperation Council (GCC) is one of the significant projects of the region connecting six countries of Saudi Arabia, United Arab Emirates, Qatar, Bahrain, Kuwait and Oman. The project with around 2000 km will be complete in 2017.

Through the operation of its North – South railway, Saudi Arabia also intends to enhance its rail connections with the other member states of the Gulf Cooperation Council (GCC) by involvement of the local and foreign companies. For this goal, until now some contracts have been concluded with the local and foreign companies including French, Chinese and American companies in order to fulfill the software and hardware systems of this big rail project. Two Chinese and American companies shall supply locomotives and wagons needed for the project.

Projects under study: Southern lines

Aside from the above three 'major' projects, the SRO's expansion plan also lists a number of 'projects under study'. The SRO entered into a contract with an engineering consultancy firm to conduct a feasibility study for establishing railways in the southern region of the Kingdom, the study included the following routes:

- Taif - Khamis Mushayt – Abha Line;
- Jeddah and Jizan Line; and
- Yanbu – Jeddah Line.

Syria

Syria, officially the **Syrian Arab Republic**, is a country of fertile plains, high mountains, and deserts; Syria is home to diverse ethnic and religious groups. Syria with an area of 185180 square kilometer, in terms of the geographic coordinates, is situated between the 32°37'N and 45°35'E. This geographical situation has caused Syria to gain an important situation in commercial and political viewpoints and become the linking point of Asia, Africa and Europe.



Overview

Area	185,180 km ²
Capital	Damascus
Population	Over 18.7 million people
Language	Arabic
Government type	Unitary dominant-party semi-presidential republic
Currency	Syrian pound (SYP)
International calling code	+ 963

This country is the connecting point of the industrial and commercial centers of Europe and the oil production centers in the Persian Gulf region. In case of betterment of the situation in Iraq, it could be a passage for exporting the oil and gas of Iran and Iraq to Europe via the Mediterranean Sea. So, connection of the rail networks of these three countries could raise up the commercial significance of Syria, since trading through this way not only will be faster but also the oil importers won't be forced to pay taxes of the Suez Canal. Syria borders in North with Turkey(822 km), in West with Lebanon (375 km) and the Mediterranean Sea, in South with Jordan (375 km) and the occupied Palestine (76 km), and East with Iraq (605km). Also, Syria

has got two important ports of Latakia and Banias. Damascus is the capital of Syria and has a population of around 22.5 million.



Transport in Syria

The transport sector in Syria is significant to the government because of the importance to the economy. Syria's transport and communication networks have expanded rapidly over the past

decade to keep pace with the fast-growing population. The road network, for example, has increased by 10% in the past five years, of which 70% is asphalted. Multi-lane highway along the Damascus – Homs – Hama – Aleppo corridor with the Mediterranean ports of Tartous and Lattakia, and with Jordan to the south and Lebanon to the west. The secondary roads are in generally excellent condition and additional road construction is underway to extend the major highway network to include a link from Lattakia to Aleppo.

Most of the major cities in Syria offer public taxi services. It is possible to rent a car in most cities as several of the international companies are present including Budget, Europcar, Hertz, and Sixt.

Rail Transport in Syria

There is an extensive network of railways in the country, measuring up to about 1300 miles, and the services are quite modern and comfortable. There are two main lines in the country. The first links the centers of Aleppo, Damascus, Hassake, Deir ez-Zur, and Qamishle.

The second links the areas located on the country's Mediterranean coast including Tartous, Baniyas, Damascus, Homs, and Deraa. Train services can be relied upon to be on time and to travel efficiently.

Tourists who prefer to travel by bus have a host of options at their disposal. The most popular options include shared minibus and private coaches. Minibuses or *servees* as they are called locally are vans with a capacity of 10 people. These vehicles generally have set routes and set fares. Passengers are permitted to make stops anywhere along this route. Travelers cannot purchase tickets before hand, instead money is passed to the front of the vehicle during the journey. Many travelers prefer the minibus option because they often go to more remote areas than other forms of transport, are far cheaper and leave more frequently.

General Establishment of Syrian Railways

(French: **Chemins de Fer Syriens, CFS**) is the national railway operator for the state of Syria, subordinate to the Ministry of Transportation. It was established in 1956 and is headquartered in Aleppo.

History

The first railway in Syria opened with the 1,050 mm gauge line from Damascus to the port city of Beirut in present-day Lebanon in 1895. The famous Hejaz railway opened in 1908 between Damascus and Medina in Saudi Arabia also used 1,050 mm gauge. Railways after this point were built to 1,435 mm standard gauge, including the Baghdad Railway.



Baghdad railway station, Aleppo, built in 1915

The Baghdad Railway had progressed as far as Aleppo by 1912. The Turks, who sided with Germany and the Central Powers, decided to recover the infrastructure south of Aleppo to the Lebanon in 1917. The Baghdad Railway created opportunity and problems for both sides, being unfinished but running just south of the then defined Syrian/Turkish border.

In 1956, all railways in Syria were nationalized, and reorganized as CF Syriennes (CFS) from 1 January 1965.

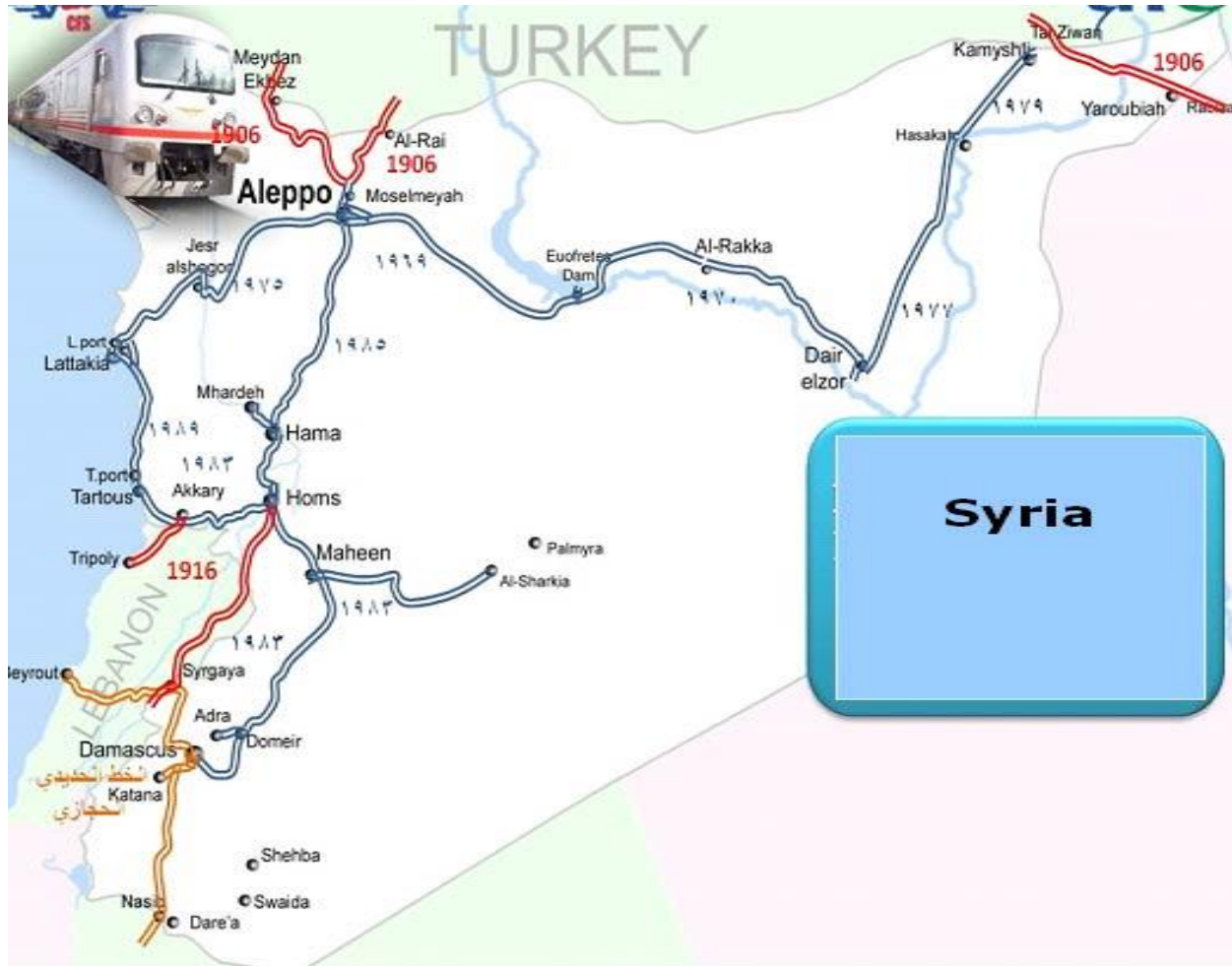


Baghdad Railway train, circa 1910

Rial Network

Today, all 1,435 mm network and trains are operated by CFS. Using all diesel-electric powered traction, the main routes are:

- Damascus - Homs - Hamah - Aleppo - Maydan Ikbis (- Ankara TCDD)
- Aleppo - Latakia - Tartus - Al Akkari - Homs
- Homs - Palmyra: freight only, opened for phosphates traffic, destined for the port of Tartus, in 1980
- Line runs from the oilfields of Al Qamishli in the north to the port of Latakia (750 km)
- Al Akkari (- Tripoli CEL, out of use)
- Aleppo - Deir ez-Zor - Al-Qamishli (- Nusaybin TCDD)
- Extension from Homs southwards to Damascus (194 km) was opened in 1983
- 80 km (50 mi) Tartus-Latakia line in 1992
- Al Qamishli - El Yarubieh (- IRR Iraq, out of use)
- Damascus - Sheikh Miskin - Dera: under construction, to replace section of Hejaz railway
- Sheikh Miskin - Suwayda (under construction)
- Palmyra - Deir ez-Zor - Abu Kemal (- IRR Iraq) (planned)



2014

Trackage

- *total:* 2,750 km (1,710 mi)
- *standard gauge:* 2,423 km (1,506 mi) 1,435 mm gauge
- *narrow gauge:* 327 km (203 mi) 1,050 mm gauge (2000) Chemin de Fer de Hedjaz Syrie

Operation

The network is designed wholly around diesel-electric traction. For operational purposes CFS is divided into three regions: Central, Eastern and Northern. At the end of 2004 CFS employed around 12,400 staff.

Most passenger traffic has moved to air-conditioned coaches, and freight traffic dominates the operational trackage. The 2005 introduction of South Korean-built DMUs, where drivers were trained using a simulator, on the Damascus - Aleppo route, and the high traffic Aleppo - Latakia route where intermediate stations are bypassed, resulted in higher usage and occupancy levels.

The only international connection is with Turkey. The link with Iraq was restored for a time but closed again; there was a plan to reopen it in June 2009. In 2008, it was proposed to open a joint rolling stock factory with Turkish State Railways at Aleppo.

The only remaining section of narrow gauge line, running from a point on the outskirts of Damascus into Jordan, is operated by Jordan Hejaz Railways.

Freight Wagon

- Goods wagons: freight trains are organized into block workings, covering shipments of: oil, natural gas, phosphates, grain, cement, containers, construction materials and other transports. Most of 4319 vehicles were built between 1960–1975, with the most modern stock the grain wagons imported from Iran in the early 1990s. Approximate figures for stock:
 - 1294 Heavy Flat wagons
 - 846 Open wagons
 - 818 Oil tankers
 - 762 Covered wagons
 - 597 Grain wagons
 - 323 Phosphate wagons
 - 178 Sliding wall wagons
 - 146 Self unloading wagons
 - 53 Flat wagons
 - 50 Natural gas tankers
 - 45 Cement wagons
 - 20 Water tankers

- 19 Tippers





Passenger vehicles

The railway possessed:

- Passenger carriages: almost all OSShD-Y (OSJD) obtained mainly from the former Deutsche Reichsbahn of German Democratic Republic, the newest of which were obtained from Căile Ferate Române of Romania and Polish State Railways. The stock of 483 carriages includes: 19 restaurant, 45 sleepers and 33 baggage vans. In 2001, Iranian company Wagon Pars refurbished some stock which is still in use, while the remaining unused stock lie rotting in sidings.

Railway links with adjacent countries

On 22 April 2005, Syria ratified the Agreement on International Railways in the Arab Mashriq, which provided for the implementation of a variety of north-south and east-west links between the states of the region, including the restoration of direct rail links between Syria, Lebanon and Iraq.

-  Iraq - severed 2003, at Nurabiya/Rabiya, 1,435 mm. Due to recommence operations, June 2009, Iraq - new link Dayr az Zawr and Al'Qa'im
-  Jordan - yes, 1,050 mm gauge. In 2005, work commenced to build a 1,435 mm line.
-  Lebanon - defunct (standard and narrow gauge), closed mid-1970s
-  Turkey - yes, at Maydan Ikbis/Islahiye & Ar Ra`i/Çobanbey & Qamishli/Nusaybin & Nusaybin/Karkamis 1,435 mm

The projects of CFS

The projects of Syrian Railways are divided into two groups as follows:

- Rebuilding and developing new projects for infrastructure facilities and construction;
- Supplying the rolling stocks that support the defined strategy.

First: Rebuilding and development of new projects for the infrastructure and construction

CFS intends to rebuild, develop and modernize its rail network according to the international technical standards for its routes and compatibility with the intended transportation volume and the current and smooth capacity on these routes as well based on the following points:

1) construction of new lines of the following international routes:

Damascus – Dera – border of Lebanon (120 km): this line connects Turkey to Jordan and the Persian Gulf countries via Syria, which will be completed in 2012.

Deir Ez-Zor – Abu Kamal – border of Iraq (145 km): this line will connect the rail network of Syria to the network of Iraq. (This project will be completed in 2010.)

2) developing and modernizing the following international routes:

Aleppo – Maydan Ikbis – border of Turkey (117 km): this route connects the rail network of Turkey to Syria at the route the goes towards Iraq and Jordan (in 2011). Aleppo – Muslimiya –

Al Rai – border of Turkey (51 km): this is on the condition that the previous project is completed.

Al Qamishi – El Yarobieh (via border of Turkey – border of Iraq) – (82 km).

Akary – border of Syria and Lebanon (Tripoli in Lebanon).

3) rebuilding and modernizing the current rail lines of Syria, which are considered as the local basic routes:

- Aleppo – Damascus (401 km);
- Aleppo – Latakia (202 km);
- Aleppo – Deir Ez-Zor – Qamishi (559 km).

Also, CFS has some studies under process on the other projects, which the followings are among the most significant ones:

1) rebuilding and modernizing the rail line on the following routes:

- Hous – Akary – Tartus;
- Hous – Maheen – Al Sherkieh (202 km).

2) constructing new lines to complete the existing rail network on the following routes:

- Deir Ez-Zor – Palmira – Al Sherkieh (295 km);
- Al doir – Al Sherkieh (via Abu Shamat);
- Aleppo – Al Hasakeh (via Ar`Raqqah, without passing through Deir Ez-Zor).

Rail Developments in CFS

- 2008 - proposed joint rolling stock factory with Turkey at Aleppo
- On 22 April 2005 Syria ratified the Agreement on International Railways in the Arab Mashriq, which provides for the implementation of a variety of north-south and east-west links between the states of the region, including the restoration of direct rail links between Syria and Lebanon and Iraq.

Syrian Hejaz Railways (SHR)

The **Hejaz Railway** was a narrow gauge railway (1,050 mm) that ran from Damascus to Medina, through the Hejaz region of Saudi Arabia, with a branch line to Haifa on the Mediterranean Sea. It was a part of the Ottoman railway network and was built to extend the line from the Haydarpaşa Terminal in Kadikoy beyond Damascus to the holy city of Mecca. It got no further than Medina, 400 kilometres (250 mi) short of Mecca, due to the interruption of the construction works caused by the outbreak of World War I. Damascus to Medina is 1,300 kilometres (810 mi).

The main purpose of the railway was to establish a connection between Constantinople, the capital of the Ottoman Empire and the seat of the Islamic Caliphate, and Hejaz in Arabia, the site of the holiest shrines of Islam and the holy city of Mecca, the destination of the Hajj annual pilgrimage. Another important reason was to improve the economic and political integration of

the distant Arabian provinces into the Ottoman state, and to facilitate the transportation of military forces.

This railway with the gauge of 1050 mm is one of the two independent state railways of Syria. The length of Hejaz rail network in Syria is 338 km.

Turkey

Turkey, officially the **Republic of Turkey**, is a transcontinental parliamentary republic in Eurasia, mainly on the Anatolian peninsula in Western Asia, with a smaller portion on the Balkan peninsula in Southeast Europe. Turkey is a democratic, secular, unitary, constitutional republic with a diverse cultural heritage with a total population of slightly over 80 million people and area of 783,562 km².



Area	783,356 km ²
Capital	Ankara
Population	Over 80.1 million people
Language	Turkish
Government type	Unitary parliamentary constitutional republic
Currency	Turkish lira (TRY)
International calling code	+ 90

Turkey is bordered by eight countries: Syria and Iraq to the South; Iran, Armenia, and the Azerbaijani exclave of Nakhichevan to the East; Georgia to the Northeast; Bulgaria to the Northwest; and Greece to the West. The Black Sea is to the North, the Mediterranean Sea to the South, and the Aegean Sea to the West. The Bosphorus, the Sea of Marmara, and the Dardanelles, which together form the Turkish Straits, divide Thrace and Anatolia; they also separate Europe and Asia. Turkey's location between Europe and Asia makes it strategically important.

Transport in Turkey

Turkey is bordered by eight countries: Syria and Iraq to the South; Iran, Armenia, and the Azerbaijani exclave of Nakhchivan to the East; Georgia to the Northeast; Bulgaria to the Northwest; and Greece to the West. The Black Sea is to the North, the Mediterranean Sea to the South, and the Aegean Sea to the West. The Bosphorus, the Sea of Marmara, and the Dardanelles, which together form the Turkish Straits, divide Thrace and Anatolia; they also

separate Europe and Asia. Turkey's location between Europe and Asia makes it strategically important.



Road transport

Beginning from the 1950's, road transport has experienced a significant development process and now, it is considered as the dominant transport mode of Turkey.

Major ongoing road projects

There are currently 15 road projects to be built on a BOT basis and to be completed by 2023. They account for a total of 5500 km. Major projects that can be pointed out are:

- The North-Marmara Highway which is the largest BOT project in Turkey to date (300 km highway and a bridge at an estimated cost of USD 4 billion).
- The three-lane suspension Çanakkale Bridge, the country's longest bridge (3623 m), which is still under project.
- The Istanbul-Izmir Highway (to be completed in 2017) which is a USD 11 billion BOT which includes the world's second-longest suspension bridge over the gulf of Izmir.
- The 5.4 km long, double-deck Avrasya Tüp Tüneli, a road tunnel under the Bosphorus to be completed in 2016. (The total cost of the project is estimated at USD 1.3 billion, partly funded by the European Bank for Reconstruction and Development (USD 150 million) and a USD 350 million loan from the European Investment Bank).

Ports

Ports and berthing facilities in Turkey are owned and operated by three different groups, state owned companies, municipalities and private companies.

Major ports are owned and operated by the Turkish State Railways (TCDD) or Turkish Maritime Organization (TDİ), which are so-called State Economic Enterprises (Turkish: *Kamu İktisadi Teşebbüsü* or KİT). However, some of these ports are already privatized and some others, which all belong to the TCDD, are within the ongoing privatization process.

Municipality owned ports are comparatively smaller. Limited to a small volume of coastal traffic, they serve the local needs of provincial towns.

Privately owned ports are mostly constructed and used in special purpose to the particular needs of the industrial plants. However, third parties are also allowed to use these ports.

Major ports in Turkey are as the following:

- Port of Bartın
- Port of Erdemir (aka Port of Karadeniz Ereğli)
- Port of Giresun
- Port of Hopa
- Port of Ordu
- Port of Rize
- Port of Samsun
- Port of Tirebolu
- Port of Trabzon
- Zonguldak TTK Port
- Port of Alemdar, Dilovası
- Port of Ambarli, Istanbul Province
 - Akcansa Ambarli Port
 - Alemdar Port
 - Ambarli Armaport
 - Ambarli Mardas Port
 - Ambarli Soyak Port
- Port of Bandirma
- Port of Derince
- Port of Diler, Hereke
- Gemport
- Port of Haydarpaşa, Istanbul
- Kumport
- Port of Martaş, Marmara Ereğlisi
- Port of Sedef, Dilovası
- Port of Tekirdag (Akport)
- Port of Zeytinburnu (aka Zeyport)

Rail Transport in Turkey

The State Railways of the Turkish Republic or TCDD is the government owned, national railway infrastructure company in the Republic of Turkey, headquartered in Ankara. The TCDD was formed in 1927 by the Turkish Government to take over the administration of the existing rail lines within the borders of the Republic of Turkey.



At the birth of the Republic of Turkey in 1923, there were 3,660 km of standard gauge lines, of which 1,378 km were state-owned; while the lines owned by foreign investors were eventually nationalized starting from 1927.



By the «Law No. 6461 on the Liberalization of Turkish Railway Transportation» entered into force on 1st May 2013; TCDD is re-structured as railway infrastructure manager and “TCDD Transport JSC” is established as an affiliated company of TCDD in order to realize passenger and freight transportation. This law provides opportunity for the private railway operation, private railway infrastructure management is also promoted.

The first operation of railway in Turkey was made on a 130 km line. Construction of this rail line began in 1856 by granting a concession to an English company. Pursuant to the independence campaign, the rail network that had been extended up to 4000 km, confined only to the national borders, which were identified by the declaration of the Republic of Turkey. In 1924, the railway officially became nationalized; so the maintenance, repair and operation of the rail lines were undertaken by it (therefore it becomes evident that TCDD is in charge of ports either). The railway that had been launched with a small amount, changed into a state economic sector that offered competitive and qualitative services to the public. Finally, upon a decree issued in 1984, this organization changed into a state and economic institution with higher scope.

Falling between Europe and the "true" MENA region, Turkey is nonetheless worth consideration for its record of successfully closing PPP projects and for the government's focus on improving rail infrastructure by 2023, the republic's centenary.

Turkey has ambitious plans to upgrade and install a new and efficient rail network with a number of projects either planned or underway, some of which we note below. This includes plans to build an additional 9,000km of high-speed train lines. The government, which is focusing on the liberalization of the rail transport sector, is opening this market up to international competition. The government will also separate the functions of infrastructure managers and railway undertakings. In this context, Turkish State Railways (TCDD) was reorganized in 2013 as the infrastructure operator and a new state-owned company named TCDD Taşımacılık A.Ş. was established as a train operator.

Network

Total Railway Network	12.532 km
Lenght of High Speed Lines	1.213 km
Lenght of Conventional Lines	11.319 km
Lenght of Signalized Lines (% 44)	5.462 km
Lenght of Electirified Lines (% 35)	4.350 km

Here is some technical information (standards) about the Turkish railway system:

- Rail Gauge - 1,435 mm standard gauge
- Electrification - 25 kV, 50 Hz AC Overhead lines
- Loading Gauge - UIC GC
- Traffic - Right-Hand traffic
- Pantograph - 1950 mm (Old) and 1600 mm (New, Rebuilt and High-speed lines)
- Rail - S49 (Old) and UIC 60 (New, Rebuilt and High-speed lines)
- Sleepers - Wooden & Steel (Old) and Concrete (New, Rebuilt and High-speed lines)
- Fastening - Baseplate based with Screw spikes (Old) and Tension Clamp (New, Rebuilt and High-speed lines)
- Platform height - 380 mm (Low platforms), 550 mm (High-speed trains' platforms) and 1050 mm (Commuter rail platforms)
- Coupling - Buffers and Chains (Locomotives and Passenger cars) and Scharfenberg (MUs)

Key rail projects of TCDD

High Speed Lines under Operation:

Since 2004, 1.213 km high speed lines have been constructed and started to be operated.

- Ankara-Eskişehir High Speed Line (245 km): Turkey's first high speed line inaugurated to the operation on 13th March 2009.
- Ankara-Konya High Speed Line (310 km): Ankara-Konya High Speed Line put into service on 24th August 2011.
- Ankara-İstanbul High Speed Line (513 km): This line put into service on 25th July 2014.
- Konya-Eskişehir-İstanbul High Speed Line (631 km): High Speed Line between Konya-Eskişehir started to be operated on 23rd March 2013 and was extended to İstanbul on 17th December 2014.


Lines under Construction:


The construction works of 1.906 km high speed line and 1.042 km rapid line is still going on.

- Ankara-Sivas High Speed Line (405 km): under construction
- Ankara-İzmir High Speed Line (624 km): under construction
- Bursa-Bilecik Rapid Line (110 km): under construction
- Konya-Karaman Rapid Line (102 km): The infrastructure and superstructure works of the Konya-Karaman Rapid Line is completed and supplementary works beside electrification and signaling works are going on.
- Karaman-Ulukışla Rapid Line (135 km): The construction of Karaman-Ereğli-Ulukışla Rapid Line is started.
- Mersin-Adana Rapid Line (67 km): under construction
- Adana-İncirlik-Toprakkale Rapid Line (79 km): The construction of Adana-İncirlik Rapid Line is started.







Railway links with adjacent countries

West neighboring countries

-  Bulgaria - open - 1,435 mm and 25 kV, 50 Hz AC - (On 20th February 2017, İstanbul-Sofia train put into service between Halkalı (İstanbul)-Sofia (Bulgaria).

-  Greece - open - 1,435 mm and 25 kV, 50 Hz AC - (But no train runs since February 2011 due to economic crisis in Greece.)

East neighboring countries

-  Georgia - under reconstruction - break-of-gauge 1,435 mm/1,520 mm at Akhalkalaki (Georgia)
-  Armenia - closed since 1993 - break-of-gauge 1,435 mm /1,520 mm (see the Kars-Gyumri-Tbilisi railway line)
-  Azerbaijan - no direct link - break-of-gauge 1,435 mm /1,520 mm via Georgia under reconstruction
-  Iran - via Lake Van train ferry - 1,435 mm
-  Iraq - no direct link, traffic routed via Syria - 1,435 mm
-  Syria - closed because of the Syrian Civil War - 1,435 mm

United Arab Emirates

Sometimes simply called the **Emirates** or the **UAE**, is a federal absolute monarchy in Western Asia at the southeast end of the Arabian Peninsula on the Persian Gulf, bordering Oman to the east and Saudi Arabia to the south, as well as sharing maritime borders with Qatar to the west and Iran to the north.



The country is a federation of seven emirates, and was established on December 2, 1971. The constituent emirates are Abu Dhabi (which serves as the capital), Ajman, Dubai, Fujairah, Ras al-Khaimah, Sharjah and Umm al-Quwain. Each emirate is governed by an absolute monarch; together, they jointly form the Federal Supreme Council. One of the monarchs is selected as the President of the United Arab Emirates.

The United Arab Emirates is situated in Middle East, bordering the Gulf of Oman and the Persian Gulf, between Oman and Saudi Arabia; it is in a strategic location slightly south of the Strait of Hormuz, a vital transit point for world crude oil.

Overview

Area	83,600 km ²
Capital	Abu Dhabi
Population	Over 9.3 million people
Language	Arabic
Government type	Federal monarchy
Currency	UAE dirham (AED)
International calling code	+ 971

Transport in UAE

Dubai International Airport was the busiest airport in the world by international passenger traffic in 2014, overtaking London Heathrow. A 1,200 km country-wide railway is under construction which will connect all the major cities and ports. The Dubai Metro is the first urban train network in the Arabian Peninsula. The major ports of the United Arab Emirates are Khalifa Port, Zayed Port, Port Jebel Ali, Port Rashid, Port Khalid, Port Saeed, and Port Khor Fakkan.

The UAE's extensive road network connects each of the seven emirates and links major transportation hubs and population centers. The road network also links the UAE with

neighboring Oman and Saudi Arabia, facilitating trade. Traffic, and congestion on the roads, was once a major problem, particularly in the emirates of Dubai and Sharjah. However, traffic and congestion have eased with continued expansion of the road network.

The UAE has made major investments in its infrastructure, resulting in modern ports and airports that serve as some of the most active gateways into the Gulf region for business, commerce and tourism.

The major ports in the UAE are:

- Jebel Ali, Dubai
- Mina Rashid, Dubai
- Mina Zayed, Abu Dhabi
- Mina Khalid, Sharjah
- Khor Fakkan, Sharjah

Federal Transport Authority (FTA)

The FTA is the Competent National Authority having the overall responsibility for Rail Regulations, National Rail Standards and Independent Safety Assessor role. U.A.E plans to construct a 1,500-km long, high-speed passenger and cargo railway network linking all seven emirates. The purpose is to connect Ras Al Khaimah and Fujairah to Ghewaifat through Sharjah, Dubai and Abu Dhabi. The project will be phased over several years. In the end, the railway will connect the UAE to Saudi Arabia via Ghweifat city in the West and Oman via Al Ain in the East. The project will be complete in 2015.

Phase I (275 km) will connect the Shah Gas field with oil and gas facilities at Habshan and will transport granulated sulphide. The construction operations started in 2011.

In Phase II the line shall extend to Al Ein in the east and Saudi border in the west which shall link all United Emirates together.

In the final phases the network continues to Dubai. Emirates north and eastern coast.

The network shall get to the 1000-km long rail network of Gulf Cooperation Council. There are no rail links with neighboring countries.

Rail Projects:

Stage 1:

Status: Commercial activity for Etihad Rail commenced in December 2015 after safety authorizations were granted by the Federal Transport Authority. To date, Etihad Rail has transported more than 7.4 million tons of granulated sulphur for Abu Dhabi National Oil Company (ADNOC), the equivalent of 494,000 truck trips.

One train removes approximately 300 trucks from the road, producing 70%-80% less carbon dioxide emissions than trucks required to transport the same tonnage.

Location: Stage One of the rail network links Shah and Habshan to the port of Ruwais

- With a capacity to transport 22,000 tons of granulated sulphur daily
- The monthly average tonnage of sulphur transported stands at 457,000 tones.

Length (km): 264 km

Locomotives: Seven state-of-the-art locomotives from U.S.-based Electro-Motive Diesel, equipped with an in-cab European signaling system (ETCS level 2), and built to accommodate double stack containers.

The Etihad Rail network is of standard gauge with mainly double track, designed for an integrated transport network and mixed-use traffic.

Wagons: 110 wagons fully equipped with extended safety features including Hot Bearing and Hot Wheel detectors on each wheel, ECP brakes and derailment protection. Weighing 30 tons each if unloaded and 130 tons when loaded, the wagons are covered hopper wagons for the movement of granulated sulphur, featuring top hatch covers for loading and “kwik drop” bottom

doors for unloading.



Stage 2:

Location: Stage 2 will connect the railway to Mussafah, to the Gulf ports of Khalifa and Jebel Ali, and to the Saudi and Omani borders.

Length (km): 628 km

Status: Etihad Rail is committed to the delivery of the UAE's national railway network in line with its mandate and is continuing to work closely with partners and stakeholders in the UAE and on a GCC level, to assess the most appropriate timeline for the construction of Stage Two.

Stage3:

Location: Stage 3 will extend the network from Dubai to the northern regions of Fujairah, Ras Al Khaimah and Sharjah

Length (km): 279 km

Regardless of the plans of individual Emirates discussed below, the UAE has one of the most ambitious transport plans in the GCC region; the Federal Railway project. This plan includes the project for the first stage, within the UAE, of the wider plan to develop the GCC rail network. The Federal Railway project aims to link the seven Emirates of the UAE by rail, initially for freight and then later passenger traffic.

It is intended that by 2017, Abu Dhabi and Dubai will be connected by rail, initially for freight only, with passenger services to be provided in the future. The project is being overseen by Etihad Rail Company PJSC (Etihad Rail), a state-owned vehicle. Deutsche Bahn's (DB) UK-based rail freight operating arm, DB Schenker Rail, and Etihad Rail formed a joint venture company called Etihad Rail DB Operations LLC to oversee the freight operations for the Federal Railway.



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