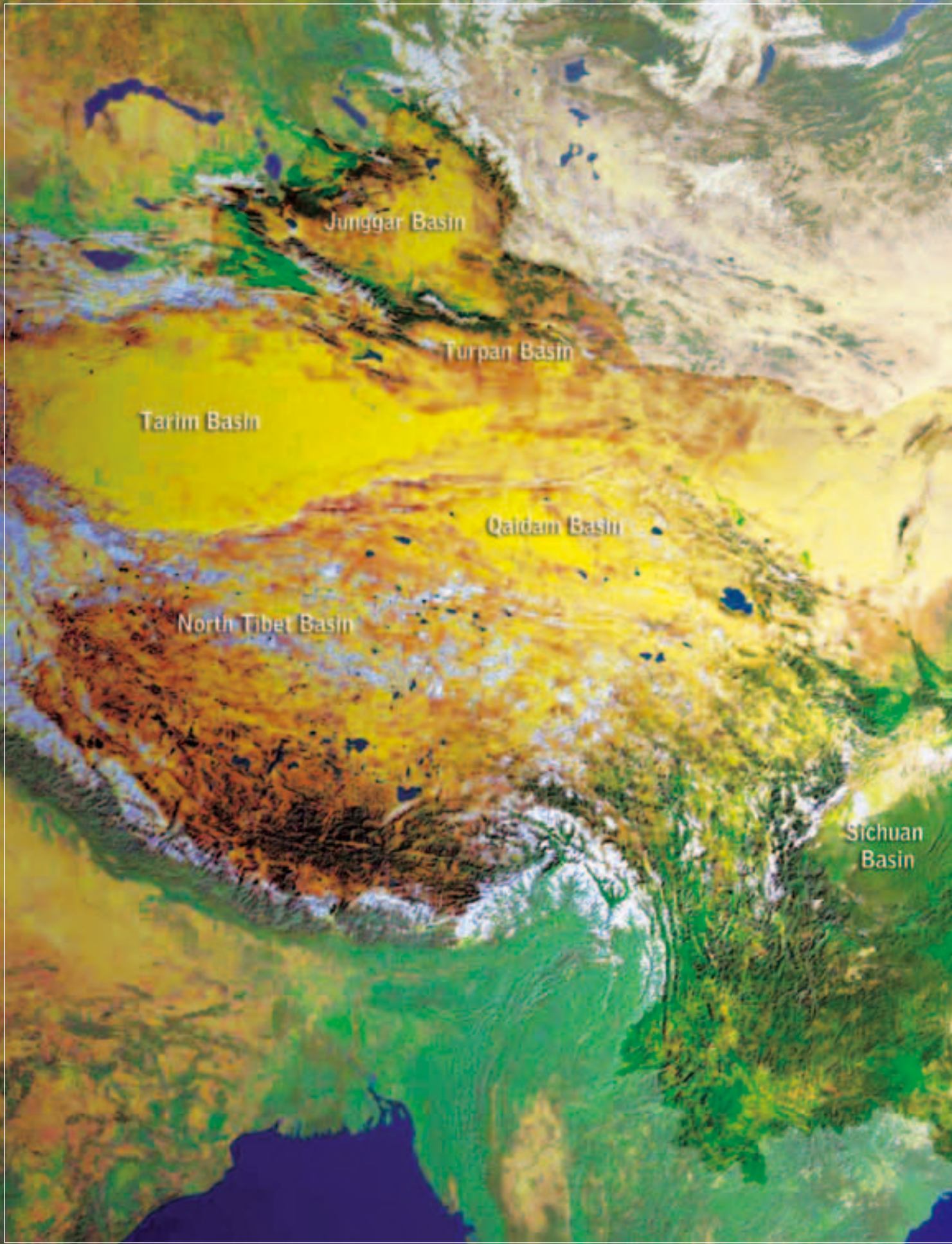


# Ordos Basin



China National Petroleum Corporation



Junggar Basin

Turpan Basin

Tarim Basin

Qaidam Basin

North Tibet Basin

Sichuan Basin

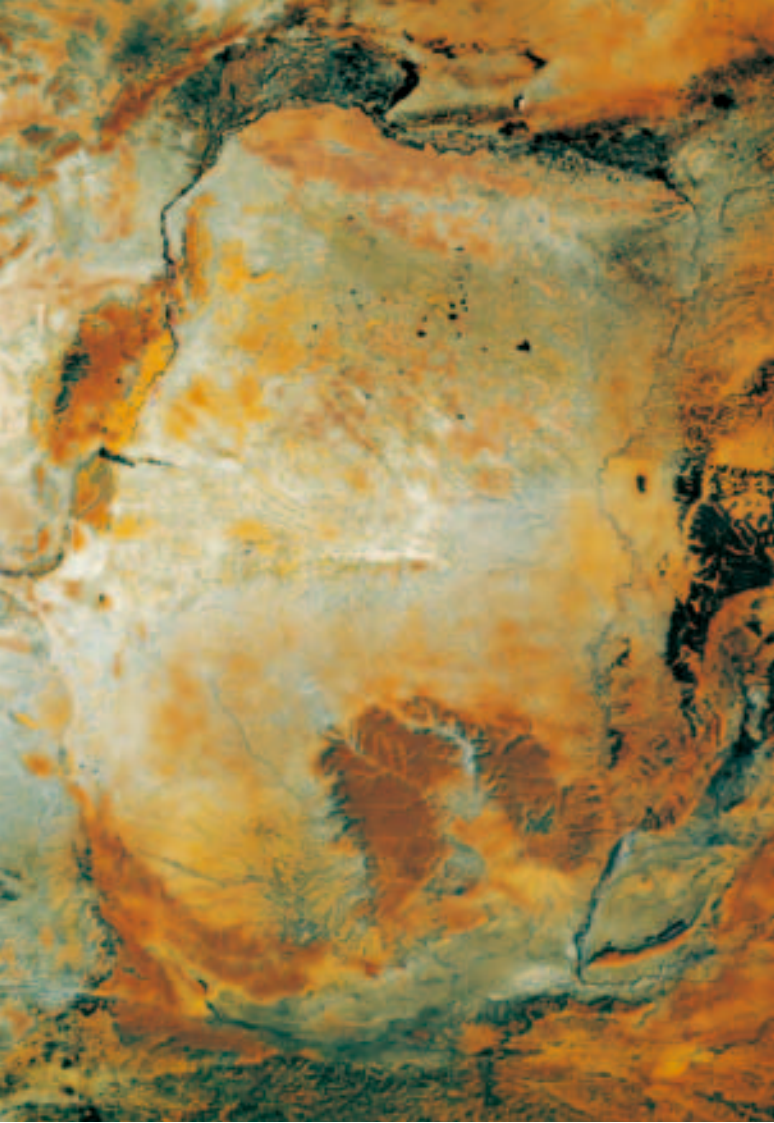


Spread across the vast territory of China are hundreds of basins, where developed sedimentary rocks originated from the Paleozoic Era to the Cenozoic era, covering over four million square kilometers. Abundant oil and gas resources are entrapped in strata ranging from the eldest Sinian Suberathem to the youngest quaternary system. The most important petroliferous basins in China include Tarim, Junggar, Turpan, Qaidam, Ordos, Songliao, Bohai Bay, Erlian, Sichuan, North Tibet, South Huabei and Jiangnan basins.

There are also over ten mid-to-large sedimentary basins along the extensive sea area of China, with those rich in oil and gas include the South Yellow Sea, East Sea, Zhujiangkou and North Bay basins.

These basins, endowing tremendous hydrocarbon resources with various genesis and geologic features, have nurtured splendid civilizations with distinctive characteristics portrayed by unique natural landscape, specialties, local culture, and the people.

In China, CNPC's oil and gas operations mainly focus in nine petroliferous basins, namely Tarim, Junggar, Turpan, Ordos, Qaidam, Songliao, Erlian, Sichuan, and the Bohai Bay.



*The Ordos Basin, China's second-largest sedimentary basin, covers an area of 370,000km<sup>2</sup> across Shaanxi, Gansu and Shanxi provinces and Ningxia and Inner Mongolia autonomous regions in the mid-western region of the country.*

## Ordos Basin

### Geography and Geomorphology

The basin is surrounded by mountains in all directions, including Yin and Daqing in the north, Qinling in the south, Helan and Liupan in the west, and Luliang and Taihang in the east. While these mountains are typically 2,000 meters above sea level, the elevation of the basin is generally between 800 and 1,400 meters. The Great Wall divides the basin into two parts. The northern part consists of the arid deserts of Mu Us and Kubuqi, as well as grasslands, and the southern part is a semi-arid loess plateau that features widespread loess and complex landforms. Near the basin are three large alluvial plains, namely, the Yinchuan plain to the east of the Helan Mountains, the Yellow River Hetao plain to the south of the Lang and Daqing mountains, and the Guanzhong plain to the north of the Qinling

Mountains. These plains have flat terrain, easy access, and are rich in natural resources.

The basin is bounded by the Great Wall to the south, and the Yellow River to the west, north and east. All water systems in the basin are part of the Yellow River system. Most of those in the desert and plain areas are intermittent streams that typically flow into desert lakes or salt marshes. Despite the small permanent flow and poor water quality of surface streams that often dry out in summer, the basin is rich in groundwater, and is inhabited by the Han, Mongolian, and Hui ethnic groups. Its agriculture is characterized by irrigated farming, although dry farming and stock-raising play a considerable role.

## Geological Features

Geologically, the Ordos Basin is a tectono-sedimentary basin of platform type in the west of the North China Massif. It is also a large polycyclic cratonic basin that features monolithic vertical movement, migration of depressions, and simple construction. The basement is a metamorphic system of the Archaean and Lower Proterozoic Era. The sedimentary cover is in the Changcheng, Jixian, Sinian, Cambrian, Ordovician, Carboniferous, Permian, Triassic, Jurassic, Cretaceous, Tertiary, and Quaternary systems, with a total thickness of 5,000 meters to 10,000 meters. Hydrocarbons are mainly produced from the Triassic, Jurassic, and Ordovician systems.

The basin rises from west to east at a gentle slope of less than 1° per kilometer. The hydrocarbon reservoirs in the basin can be summarized as a half basin of oil and a full basin of gas, oil in the south, and gas in the north, oil on top, and gas at the bottom. These large areas of reservoirs are widely distributed and comprehensively joined to one another in a multiple formation series. Vertically, the oil-bearing strata are said to be in "four stories". This is why the basin is known as a "Treasury Basin".

## Resources

The Ordos Basin boasts widespread resources in its vast area. These many kinds of energy and mineral resources are characterized by huge potential and considerable reserves. In fact, it contributes most to the reserves of natural gas, coal bed methane, and coal already proven in China, accounting for nearly 6%, 13%, and 20%, respectively. With more than 10 billion tons of petroleum resources, the basin ranks fourth in China. The Ordos Basin contains about 11 trillion cubic meters of natural gas and 19 trillion cubic meters of coal bed methane. Its proven oil and gas fields include Yanchang, Sulige, Ansai, Jing'an, and Jingbian, providing a stable gas supply to the first and second Shaan-Jing Gas Pipelines and the first and second West-East Gas Pipelines.



# Tengger Desert

Tengger Desert, the fourth-largest desert of China, covers an area of 30,000 km<sup>2</sup>, 1,200~1,400 meters above sea level, in southwest Alxa Left Banner of Inner Mongolia and central Gansu Province.

The desert is named Tengger, literally "sky" in the Mongolian language, to compare its vast sand to the boundless sky. In the desert are alternate dunes, lake basins, salt marshes, grasslands, mountains and plains. The dunes cover 71% of the area and 7% of them are fixed or semi-fixed. Most of the migratory dunes are trellis dunes or trellis dune ranges, typically 10~20 meters high. Some compound dune ranges are 10~100 meters in height, and often move southeastwards. These dunes have magnificent peaks, fine, soft and smooth sand grains, and a dazzling golden hue.



The desert contains 422 lake basins of 1 to 100 square kilometers, most of which are covered by grass. These lakes are distributed in belts and generally receive ground water from the surrounding mountains. From afar, the lakes surrounded by piles of salt similar to ice are just like glaciers in a sandy sea. With marsh, meadow, and halobiont vegetation, the lake basins are also the major rangeland in the desert, feeding flocks of sheep and cattle as well as camels on their flat grassland.

Standing on high dunes of Tengger Dalai, you'll be amazed by a strange primitive lake that is shaped like an outline of a map of China, with distributed reed indicating all provinces and autonomous regions of the country. This is the so-called Moon Lake. The lake is fresh in one half but salty in the other. The water is so purifying that it keeps clear even after having been retained for millions of years. Despite 220mm precipitation a year, the water level has increased. Moon Lake is the only primitive lake with a coastline among its many peers in the desert. On its coastline, which is 3km long and 2km wide, you can find black sandy mud that is ten of million years old under a thin cover. Rich in dozens of trace elements, the mud is even better than the black mud from the Dead Sea with its unique effect to health if applied on human bodies.

About 35km north of the Moon Lake is the Swan Lake, which is 35km east of Bayanhaote town, where the Banner government is located. If you connect the two lakes and the town to each other with lines on a map, you get an obtuse isosceles triangle. The Swan Lake is surrounded by a vast desert where rolling dunes appear like surging waves, providing a magnificent and relaxing scene. The larger Swan Lake and the smaller Moon Lake are outstanding among of the more than 190 lakes in the desert. Each with unique charms, they set off each other and attract many tourists.



# Hukou Waterfall on the Yellow River

Hukou Waterfall is in the middle reaches of the Yellow River at the intersection of Shanxi and Shaanxi provinces, about 5 to 6 hours drive from the city of Taiyuan and a little more than 2 hours drive from the city of Xi'an. The rushing and roaring waterfall is the most magnificent along the river, and the second-largest waterfall in China, after Huangguoshu Waterfall in Guizhou Province.

The waterfall is a product of local strata, construction, climate, and hydrological conditions. It has been caused by developed joints and faults, as well as the intense down-cutting of water which has been further intensified due to the interlaced soft and hard strata in the river valley.

When the Yellow River surges to the rock valley where the waterfall is located, its width is abruptly narrowed from over 300 meters to less than 60 meters. The rolling and roaring water, like boiling in a huge teapot, drops from the top of a rock cliff as high as more than 20 meters and into a stone channel that is a little wider than 30 meters. The water roars like the thud of galloping horses and a dragon stirring the sea, as if it were pouring down from a huge teapot. This is why it is called Hukou (literally, "Flask Mouth") Waterfall.





*Xi'an, known as "Chang'an" and "Jingzhao" in ancient China, is one of the four Great Ancient Capitals of the World. It was also the most influential capital, holding the position for the most dynasties over the longest period of time in Chinese history. The city is indeed the cradle of the Chinese nation and civilization, and is representative of Chinese culture.*



King Wen of the Zhou Dynasty

## Xi'an

### – An Ancient Capital

Xi'an was first built by King Wen of the Zhou Dynasty in the 12th century BC. It was the capital of 13 dynasties and eight other ruling bodies, including Zhou, Qin, Han, and Tang, the most prosperous dynasties in Chinese history. Xi'an city is where the Yangganzhai ancient ruin was discovered. Located in the county of Gaoling, the ruin has confirmed that the history of Chinese cities can be traced back to the late Neolithic age 6,000 years ago, and that Xi'an was the first city ever built in the history of the world.







Xi'an was China's political, economic and cultural center. As the starting point of the famous Silk Road, it was also the earliest city to open to the outside world. Here you can find the grand Terracotta Army of Qin Shihuang, the first emperor of China. Known as one of the "Eight Wonders of the World", these terracotta warriors demonstrate how profound the history and culture of Xi'an City were. With such a long history and culture, it is no wonder that Xi'an is renowned as a "natural museum of history", where the types, quantities, and value of historical relics and sites are greater than any other city in China. In fact, many treasures found here are unique in China and rare in the world.

As early as the Tang Dynasty, Xi'an, then called Chang'an, was an economically developed and powerful city, where literature, arts, song and dance, architecture, and religion were more developed than ever before. It was in fact an international city and a hub of cultural exchange. This large city, with its unconstrained and eclectic mindset, attracted scholars, officers, businessmen, and monks from around the globe. Visitors from more than 70 countries were once treated in the Hall of Linde in the royal Daming Palace. Diplomats from more than 300 countries and regions in Europe, Asia, and Africa came to the city. More than 10,000 of the 1 million people in the city were foreigners, who permanently resided here to do business, study, or conduct religious activities. Despite their different cultures and mutually conflicting beliefs, people lived in harmony in this city.

Xi'an is the capital of Shaanxi province, and one of seven regional centers of China. It is also one of the Asian centers of knowledge and technological innovation, and the largest hub city along the China's section of the New Eurasia Land Bridge and in the Yellow River area. In addition, the city is China's manufacturing base for large planes, and its largest and most important base for scientific research, higher education, national defense technologies and industry, and high and new-tech industries in the central-western region of the country. Following Beijing and Shanghai, Xi'an has been named the third "international metropolis" of China.





## Big Wild Goose Pagoda

The Big Wild Goose Pagoda, also known as "Dacien Temple Pagoda", is situated in Dacien Temple in Yanta (literally "Wild Goose Pagoda") District of Xi'an City. It was built as a brick pagoda in the western pagoda yard of the temple to enshrine Buddha statues, sariras, and Sanskrit works brought by Master Xuanzang from India in the third year of the Yonghui Period in the reign of Emperor Gao in the Tang Dynasty (652 AD). The pagoda was initially a five-story structure before it was rebuilt to seven stories in the reign of Wu Zetian, the only female emperor of China. This 64.5-meter-high building has a succinct and magnificent body of pyramid shape. It is one of the rare masterpieces of Chinese Buddhist architecture.

Historical architecture is so famous and representative of Xi'an that it is in the center of the city's emblem.

*Located to the northwest of the Big Wild Goose Pagoda in Xi'an City, the comprehensive Shaanxi History Museum is a complex that showcases the history and culture of Shaanxi province and the ancient civilization of China.*



## Shaanxi History Museum

The museum's architecture highlights the style of the glorious age of the Tang Dynasty. It is a group of buildings consisting of "a central palace surrounded by four lofty towers, one at each corner", typical in the Tang Dynasty. The layout is axially symmetrical, with primary buildings and supporting buildings arranged in an orderly manner. In this architectural style of a palace and courtyards of the Tang Dynasty, its functions as a modern museum are integrated.

The museum houses more than 370,000 historical relics spanning more than 1 million years of history. From simple stone ware used by primitive people to all types of wares used before 1840, these vast number of many types of high-grade and valuable relics include fine bronze ware of the Shang and Zhou dynasties, terracotta of different figures in different historical periods, gold and silver ware of the Han and Tang dynasties, and tomb murals of the Tang Dynasty. This is why the museum is renowned as the "Chinese Treasury" and the "Palace of Chinese Civilization".





# Terracotta Army

*The Terracotta Army or the "Terra Cotta Warriors and Horses", is a collection of terracotta sculptures depicting the armies of Qin Shihuang, the first Emperor of China. It is a form of funerary art buried with the emperor in 210-209 BC and whose purpose was to protect the emperor in his afterlife.*

## Discovery

The discovery of Terracotta Army was by chance. In March of 1974, six farmers in Lintong, Xi'an were sinking a well near to the royal mausoleum of Emperor Qin Shihuang, when stumbled on a concentration of terracotta fragments and ancient bronze weapons.

The objects immediately captured the attention of archaeologists and began to excavate the site. Shortly after extending the digging site and after examination and study of the other artefacts that were uncovered, archaeologists proved the site to be one of the burial pits associated with China's first feudal emperor Qin Shihuang.

With two more pits subsequently discovered and excavated, the archaeological site was covered and built into an enormous museum to preserve the findings while attracting nearly two million tourists annually.

The excavation have been lasting for over 30 years, archaeologists reveal part of the artefacts that are the astonishing demonstration of technology, power and organization reflecting the breathtaking scale of the First Emperor's afterlife ambitions.



## Legend of China's Emperor Qin Shihuang (259BC-210BC)

Before the era of the China's First August God of the Qin, China was run on feudal orders through aristocratic family ties. With the royal line broken and fast growing of the feudal states by defeating and taking over the others, the royal power gradually diminished and thus chaos and ferocious warfare ensued. Gradually, seven main Kingdoms called 'Seven Overlords' emerged including westernmost Qin.

In 246 BC, the king of Qin died and his son Ying Zheng, later China's First August God of the Qin succeeded him at the age of 13. When Ying Zheng turned to be an ambitious young man, he embarked on his campaign of conquest. By then Qin Kingdom had developed an unstoppable army through hundred years of reforming. The Qin king committed everything he had to this army: new provisions, better weapons and half a million more men. All these reflected his sophisticated mode of attack: shock troops, followed by heavy infantry and backed by cavalry. In the following decades, he conquered the other six kingdoms through bloody conflict.

His ultimate dream came true in 221 BC. At the age of 34, Ying Zheng was crowned with a veil of stars symbolizing the divinity of First August God. He was sending the clear message that he would have supreme power over the land that was later to be known as China. His empire, covered around one-third of Modern China was then the largest in the world and is believed to be the oldest political entity.

# Emperor Qin's Vast Mausoleum Complex- Ruling Afterlife



Emperor Qin's mausoleum is situated at the northern foot of Mount Li, some 35 kilometers east of Xi'an city. With the Emperor's grand mausoleum at the center, it is estimated there are 180 potential satellite burial pits and tombs scattered within the area of 56.25 square kilometers. Among them there discovered the elaborate royal member's tombs, bronze chariots and horses pit, rare birds and animals pit, servant pit, stone armor and helmets pit together with the enormous underground terracotta warrior army as the guardians. These suggest that the Emperor wanted to keep his empire with him even in his afterlife and firmly control all aspects – just as he lives.

It is no doubt that the Qin's vast mausoleum complex is a mass burial site with much more spectacular wonders to be uncovered. But a large number of artifacts will remain untouched underground including the emperor's huge mausoleum itself. Precious artefacts - textiles and lacquer, for example are difficult to preserve once exposed to air. In fact the work to conserve what they have already excavated is challenge enough.



*Servants near Emperor Qin's Mausoleum*



*Bronze Crane near Emperor Qin's Mausoleum*



*Stone Helmet and Armor near Emperor Qin's mausoleum*

It was said that Emperor Qin began to construct the mausoleums complex as early as he was 13, once after he became the King of Qin. The mass project had taken some 700,000 workers and craftsmen 38 years to complete. One can imagine the difficulty facing China's megalomaniac first emperor: huge quantities of raw materials - clay, water, timber, bronze - need to be accumulated; thousands of teams of engineers, craftsmen and slaves had to be fed and housed...

What kind of systems of administration so early in human history could achieve such complexity? The tremendous mysteries on various aspects 2200 years ago might remain a mystery forever.

# Terracotta Warrior Army Museum

As a part of Emperor Qin's vast mausoleum complex, Terracotta Warrior Army Museum enjoys China's top historical sight symbolizing China's history and internationally recognition.

The terracotta warrior museum officially opened to the public on October 1, 1979 is divided into three sections according to the respective pit number and the order of their discovery. It is located 1.5 kilometers east of Emperor Qin's mausoleum. The artifacts unearthed are the replicas of the First Emperor's real

army to protect his nearby flat-topped pyramid mausoleum so that he could continue ruling in his afterlife.

In 1988, two sets of large painted bronze chariots and horses found near the Qin's mausoleum were moved to the terracotta warrior museum. This shows to the public astonishing high standard of metallurgical technology and weapon making technique which Qin Dynasty reached 2200 years ago.

## Pit No.1 — the Largest Pit of Qin Terracotta Soldiers Arrayed in Battle Formation

Everyone will be awed by the magnificent and fantastic scene when walking in the Pit No.1, which is 230 meters long and 62 meters wide. In fact it is the largest burial pits and is estimated to unearth over 6000 Qin terracotta soldiers and 40 woody chariots, most of which are infantrymen.

China's ancient royal soldiers seem standing into the battle formation, poised to fight, alertness in their faces and stance, each figure different in some detail; some have slight paunches, others are slender.

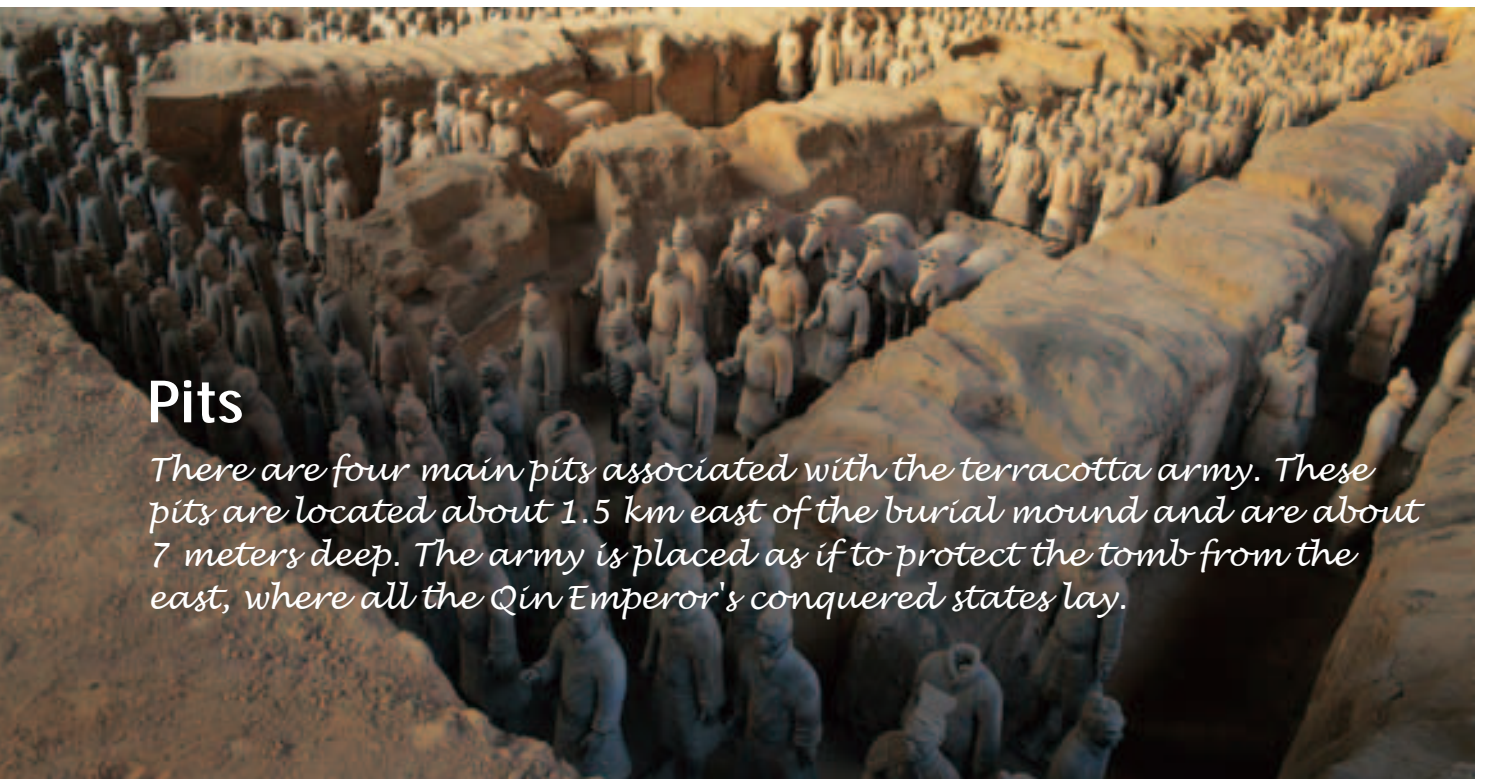
In the front, there are three rows of vanguards followed by infantry soldiers who are arranged in 11 corridors separated by 10 rammed partition walls across which huge and strong rafters were placed, then covered with mats and fine soil and filling earth. The floors are paved with bricks. There is one row of warriors in the south, north and west of the corridor respectively, facing outward. They are probably the flanks and the rear guard.



*Qin Terracotta Soldiers Arrayed in Battle Formation- Vanguards and the Followed Infantry*

## Pits

*There are four main pits associated with the terracotta army. These pits are located about 1.5 km east of the burial mound and are about 7 meters deep. The army is placed as if to protect the tomb from the east, where all the Qin Emperor's conquered states lay.*





### **Pit No.2** **— the Pit with the Most Kinds of Military Terracotta Figures**

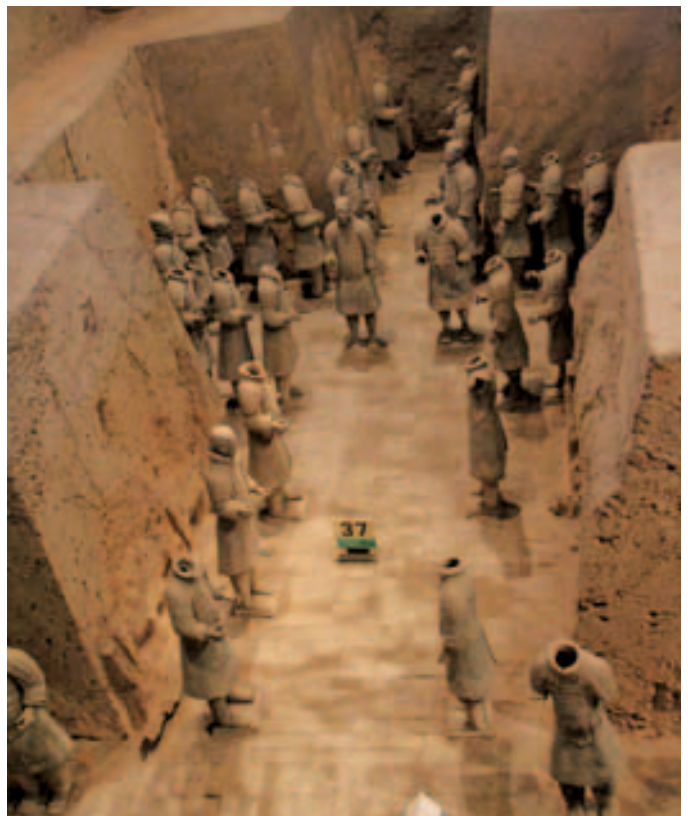
The L-shaped pit, 124 meters long and 98 meters wide, consists of four different mixed military forces of infantry, cavalry, archer and charioteer with over 900 terracotta figures and 350 pottery horses together with about 90 wooden chariots.

The four arrays are closely connected to constitute a complete battle formation and can be divided up to act independently, capable of attacking and defending and of self-protection and quick response. This reflects the unique military strategy of Chinese ancient army array.

### **Pit No.3** **— the Underground Command Center Guarded by Pottery Soldiers**

Pit No. 3 suggests to be the command center of the entire terracotta warrior army by the layout. It is the smallest with only 66 pottery soldiers and one wooden chariot drawn by four terracotta horses. Rather than arranged in a battle formation, the pottery soldiers stand opposite to each other in two rows. Only one kind of weapon was found, which had no blades and was probably used by the Qin guards of honor.

Unearthed also in this pit were a remaining deer-horn and animal bones. This is probably the place where sacrificial offerings and war prayers were practiced.



*The Pottery Soldiers Stand Opposite to Each Other in Two Rows*

## Terracotta Warrior Sculptures

The height of the terracotta warrior sculptures varies from 5.6 feet (1.7 meters) being the shortest to about 6.4 feet (1.95 meters) being the tallest, a slightly greater than the contemporary average height. Officers were sculptured taller than soldiers while the generals were the tallest.

In order to keep the balance of these sculptures, the craftspeople added a pedal to each terracotta sculpture under the feet.

Each face of Qin terracotta Sculpture is so realistically modeled that they look vivid, different in appearance and expressions. It is presumed that over 8000 life-size sculptures were made according to the real valiant Qin army soldiers by the Qin workmen. Such massive scale and mega size with individuality of expression had never been seen before in Chinese art.



## Qin bronze chariots and horses

In December 1980, two bronze chariots and horses were found 20 meters west to Qin's mausoleum. They were originally enclosed in a wooden coffin and buried in a burial pit seven meters deep. When unearthed, the bronze chariots and horses were seriously damaged into thousands of pieces due to the collapse of the decayed coffin and the earthen layers. With the following two and half years of painstaking work, the two sets of bronze chariots and horses were finally restored and started displaying to the public on October 1, 1983.

One after another, each of the large painted bronze chariots is a single shaft, driven by an imperial charioteer and drawn by four horses. They were modeled after the real chariot, horse and driver, but half size. It seems that the chariots and horses were the deluxe sedans served for the First Emperor in his afterlife tours.

The two chariots and horses played different roles in the journey. The front chariot was called "High Chariot". Standing on the chariot, the charioteer was equipped with crossbows, arrow and shields, which shows that he was employed as both a charioteer and a security guard.

The followed chariot, which was for the emperor himself, is called "Safe Chariot". In the deluxe compartment, there designed windows with small holes for ventilation and a back door for getting on and off. All the windows and doors can still close and open easily. Over the chariot, there poles an elliptical umbrella as a canopy. The chariot was color painted against a white background with more than 1,500 pieces of silver and gold and other ornaments, looking luxurious, splendid and graceful.







## Famen Temple

Famen Temple is located in Famen town, Fufeng County, Baoji City, Shaanxi Province. It is 10 kilometers north of the county town of Fufeng, 120 kilometers west of Xi'an City, and 96 kilometers east of Baoji City. First built in the reigns of Emperor Huan and Emperor Ling during the latter years of the Eastern Han Dynasty, the temple is more than 1,700 years old and is regarded as the "ancestor of pagoda temples in Guanzhong region". Its halcyon days were in the Tang Dynasty, in which the emperors were holy followers of Buddha and worshippers of Buddhist relics. At that time it was a holy and royal temple promoting both Theravada and Mahayana and combining Exoteric and Esoteric Buddhism.

An underground palace was also built in the Tang Dynasty, which was discovered on April 3, 1987. This discovery led to the unearthing of a glorious cultural treasury of the Tang Dynasty that had been buried for 1,113 years. This includes the only four finger sariras of the Sakyamuni Buddha in the world, which had been sought by Buddhists for more than a thousand years; the Esoteric Mandala finally completed in the Tang Dynasty to

enshrine the sariras; and thousands of unrivalled treasures used by the imperial family of the Tang Dynasty as Buddhist oblations.

The historical relics revealed include: 121 pieces (groups) of golden and silver oblations contributed by the imperial family of the Tang Dynasty; a series of imperial mystic color ceramics of the Tang Dynasty unearthed for the first time; a group of colored glaze ware from ancient Rome and other places; and almost 1,000 silk (golden) fabrics embodying the silk fabric craft of the Tang Dynasty, including rare skirts and other clothes contributed by Wu Zetian and other Tang empresses. These treasures are rare for their quantity, types, grade and preservation.

This archaeological discovery is another significant one following the finding of the Banpo Ruin and the Terracotta Warriors of Qin Shi Huang in China, and is regarded as a great contribution to the cultural history of the world. Now, Famen Temple is a Buddhist worship center of the world, a research centre of Buddhist culture, and a destination for tourists from home and abroad.



## Yaodong (Cave-house)

A yaodong is a traditional form of dwelling on the Loess Plateau in northwestern China. More than 4,000 years ago, people began to dig this green dwelling in loess that is as thick as up to dozens of kilometers in the Ordos Basin.

Viewed from outside, a traditional yaodong is arch-shaped. A tall arch and high windows at the door opening allow sunlight to go deeper into the cave in winter (see the figure). This design maximizes the utilization of solar radiation. The interior space is also arch-shaped to increase its height, thereby giving it a roomy and comfortable feeling.

As underground earth constructions, yaodongs feature architecture that is distinct from normal buildings. They are generally of the in-cliff, sunken, and independent types. The most popular caves are the in-cliff type, which are dug in cliffs or tablelands. Sometimes, an in-cliff cave may have a courtyard. In other cases, rows of caves are arranged in steps up the slope of a hill and the roof of a lower step is made the courtyard of the upper step to present a commanding view. A sunken yaodong is dug in a wall of a square pit that's excavated on the ground. The structure that is formed is an underground courtyard dwelling.

Yaodongs are economical and environmentally friendly buildings that save farmland, and most importantly, are warm in the winter and cool in the summer. In the agricultural age, they were the basic aspiration of a hardworking peasant, where he could get married and settle down and where his wife could do chores and bring up children while he farmed on the loess land. Even today, more than 40 million people in the vast area of Shaanxi, Gansu, and Ningxia dwell in yaodong houses, a time-honored legacy of ancient culture and a unique characteristic of the Loess Plateau.



# Ansai Waist Drum Dance

The "waist drum dance" is a folk dance popular in northern Shaanxi province. One form of it is the so-called Ansai waist drum dance that is performed by several or even thousands of drummers on open yards in the region of Ansai County. This more than 2,000-year-old folk art is unique and representative of northern Shaanxi province.

The Ansai performance is a combination of dance, martial arts, gymnastics, percussion music, wind music, and folk songs, played by rough and manly performers in a straightforward and bold manner. Its vigor, excitement and swiftness are demonstrated by changing rhythms and in patterns that are varied but kept in order. What they display are the happy people of northern Shaanxi province celebrating victory and a bumper harvest. This unique art embodies the unsophisticated, honest, and optimistic character of the people living on the Loess Plateau.

As part of the culture in the Yellow River area, this popular art has gone beyond rural areas in the Loess Plateau. It has been performed not only in cities all over China, but also at celebrations on Tian'anmen Square and other important events like the Chinese Peasants' Games and the Asian Games. Moreover, the dance has been shown on TV and films with direction from professional choreographers and has won international prizes. The world has recognized its beauty of rapid beats, vigorous steps and varied patterns.



# Paper-cutting

Paper-cutting is a popular Chinese folk art with a long history. It appeared as early as the Northern Dynasty (386 – 581), as revealed by some archeological discoveries. After the Sui and Tang dynasties, the art became increasingly prosperous and even grew into an industry in which paper-cutting masters emerged in the Song Dynasty. During the Ming and Qing dynasties, paper-cutting witnessed its peak of development.

Paper-cutting is an art of varied subjects and themes. It has been generated and spread in close relation to rural festivals and customs. Peaceful patterns pray for auspiciousness and avoid bad luck. Patterns of moppets, gourds, and lotus symbolize fertility. Domestic fowls and animals, as well as melons, fruit, fish, and insects, which are closely related to people's life, are also important subjects of paper-cutting.

To celebrate the Spring Festival, Chinese families paste their windows with new white paper on which red and green paper-cuts are attached. Paper-cuts are also attached to doors and windows. During the Lantern Festival, paper cuts are pasted on lanterns at night. All of this creates an exciting festive atmosphere. Wedding paper-cuts are pasted in bridal chambers for the purpose of decoration. Paper-cuts are also used to mark birthdays or funerals. In addition, some paper-cuts are pasted on walls and ceilings to decorate a room. In summary, they are mostly pasted in courtyards or on items to decorate the environment and enhance the festive atmosphere. Moreover, paper-cuts can be used to make embroidery patterns and to decorate gifts. It is a very popular and practical form of folk art.





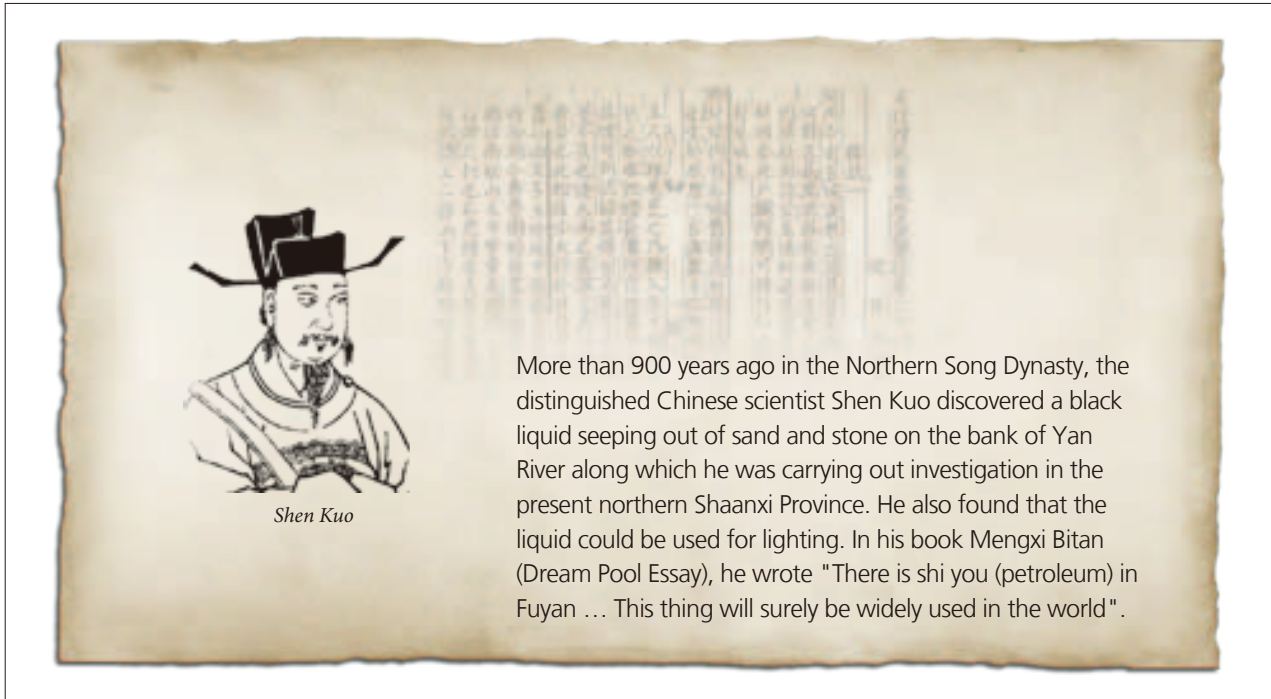




The Ordos Basin witnessed its first extensive geological survey and drilling for petroleum in the 1950s. In the 1960s, low-yield oil flows were discovered in Lingwu of Ningxia Autonomous Region. These were the first industrial oil flows obtained by stimulating low-permeability reservoirs using fracturing technologies. Following this was its first peak of reserve growth and the beginning of its large-scale oil exploration and development in the 1970s, an achievement of which was the birth of the 1.35Mt/a Changqing Oilfield in 1979.

The 1980s witnessed the discovery and massive and efficient development of several large-scale oil and gas fields, thanks to the application of low-permeability and super-low-permeability production technologies, as well as the development mode of directional, horizontal, and multilateral wells. In 2010, Changqing produced 4 million metric tons of oil and 21.1 billion cubic meters of natural gas, equivalent to 35 million tons of oil, from extremely low permeability reservoirs.

# The first oil well in Mainland China — Well Yan-1



*Shen Kuo*

More than 900 years ago in the Northern Song Dynasty, the distinguished Chinese scientist Shen Kuo discovered a black liquid seeping out of sand and stone on the bank of Yan River along which he was carrying out investigation in the present northern Shaanxi Province. He also found that the liquid could be used for lighting. In his book *Mengxi Bitan* (Dream Pool Essay), he wrote "There is shi you (petroleum) in Fuyan ... This thing will surely be widely used in the world".



However, due to the limited technologies at the time, people could only skim petroleum from stone cracks and the water surface to lubricate vehicle bearings, for lighting, or to cure animal acariasis. It was not until September 6, 1907 that the first oil well in Mainland China was drilled at a village called Qili by the Yan River in Yanchang County. The well, named Yan-1, produced 150 liters of oil a day. The first oil plant – the State-run Yanchang Petroleum Plant – was also built there. The kerosene refined by the plant had quite an impact on Xi'an, the capital city of Shaanxi Province, because it could fuel lamps to emit extremely bright light. Petroleum finally saw wide applications as Shen Kuo had predicted hundreds of years before. As a result, the modern onshore production of petroleum on an industrial scale commenced in China. So far, Yanchang Oil Mine has been developed into a medium-scale oil producer with an output of more than 3 million tons of oil from eight hydrocarbon blocks.



# Changqing oil & gas province

## Jing'an Oilfield

Jing'an oilfield is situated on a typical loess-tableland landform at an elevation of 1,400 m – 1,700m in central Ordos Basin. With an average permeability of only 1.81md, it is one of the largest onshore uncompartmentalized extremely low permeability oilfields in China, with proven reserves of over 300 million metric tons.

## Ansai Oilfield

Ansai oilfield is on a loess-covered and gully-crisscrossed ground at an elevation of 1,100m – 1,500m in central Ordos Basin. Geologically, it is in the Triassic Yanchang group. Discovered in 1983 and having an effective permeability of only 0.49md, it is the first uncompartmentalized super-low-permeability oilfield developed in China. By the end of 2008, it had 340 million metric tons of oil in place accumulatively proven.

## Xifeng Oilfield

Xifeng Oilfield is situated on the Dongzhi Tableland, the largest loess tableland of China, on the Longdong Plateau of the Ordos Basin. It boasts 1.05 billion tons of hydrocarbon resources in an exploration area of about 5,000km<sup>2</sup>. With a proven reserve of 630 million tons, Xifeng is the third uncompartmentalized and super-low-permeability oilfield with a proven reserve of more than 100 million tons that has ever discovered following Ansai and Jing'an oilfields in Changqing, and also one of the largest uncompartmentalized oilfields that CNPC has discovered in the past decade.

Xifeng Oilfield features low permeability, low pressure, deep burial, high gas-oil ratio, considerable formation variation, and complex surface conditions. Using integrated and efficient development technologies for low-permeability reservoirs and a digital model of oilfield management, it can produce more than 1.1 million tons per year.

## Sulige Gas Field

Sulige gas field is located deep in the Mu Us Desert of Ordos Basin. Being the largest gas field in China, it has 1.1 trillion cubic meters of gas reserves already proven. Sulige is also a typical tight sandstone gas field of low permeability, low pressure, and low abundance.

Its tight sandstone gas reservoirs have been efficiently developed by integrating drilling (well completion), stimulation, and surface engineering technologies. Now Sulige has an annual production capacity of 13.5 billion cubic meters, becoming China's largest hub of gas supply, transport, and regulation.



Jing'an Oilfield



Ansai Oilfield



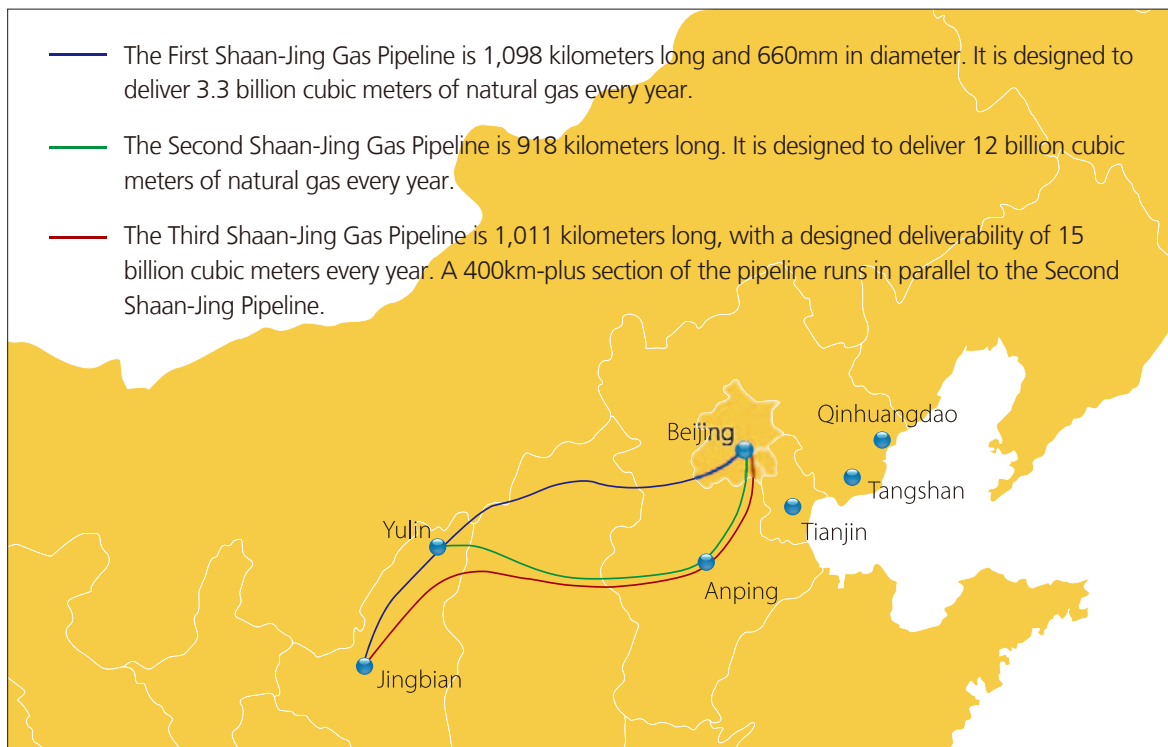
Xifeng Oilfield



Sulige Gas Field

# Shaan-Jing Gas Pipelines

The Shaan-Jing Gas Pipeline is a gas supply network consisting of the First, the Second and the Third Shaan-Jing Pipelines, as well as auxiliary underground gas storages. In addition, it is connected to the West-East Gas Pipeline by the Ji-Ning Branch. Gas supply to Beijing is thus secured by three large gas sources: Changqing, Tarim, and Huabei oil and gas provinces.





# Ordos Basin



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