Developing Karamay as a Sub-Central City in Xinjiang: Strategic Choice and Practical Path

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Abstract

"Serving national strategies and promoting the transformation and development of resource-based cities" has consistently been the core mission of Karamay's development. Through analyzing Xinjiang's geographical characteristics and the economic patterns of its various prefectures and autonomous prefectures, this study proposes that developing Karamay into a sub-central city of Xinjiang constitutes an objective necessity for Xinjiang's coordinated regional development. Confronted with the urgent imperative for its own transformation, Karamay should regard building itself into a sub-central city of Xinjiang as a critical breakthrough, thereby promoting the transformation of the city's overall functions rather than merely focusing on industrial transformation and upgrading. Specifically, first, optimize the tax distribution mechanism to enhance local financial autonomy; second, consider administrative division adjustments; third, develop new quality productive forces based on local conditions; and fourth, accelerate the advancement of regional coordinated development and deepen cooperation with surrounding prefectures, autonomous prefectures, and the Xinjiang Production and Construction Corps, thereby gradually developing Karamay into a regional economic highland, a modern transportation and logistics hub, a commercial and trade center, and a highland for technological innovation in future industries.

Full Text

Strategic Choice and Practical Path for Karamay to Build a Xinjiang Sub-Center City

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Abstract

"Serving national strategies and promoting the transformation and development of resource-based cities" has always been the core mission of Karamay's development. Through analyzing Xinjiang's geographical characteristics and the economic patterns of its various prefectures, this study proposes that building Karamay into a Xinjiang sub-center city represents an objective necessity for coordinating regional development across Xinjiang. Faced with urgent transformation needs, Karamay should treat the development of a Xinjiang sub-center city as a crucial breakthrough point to drive the transformation of overall urban functions rather than merely upgrading its industrial structure. Specifically, this involves: first, optimizing the tax distribution mechanism to increase local fiscal autonomy; second, considering administrative division adjustments; third, developing new productive forces according to local conditions; and fourth, accelerating regional collaborative development and deepening cooperation with surrounding prefectures and the Xinjiang Production and Construction Corps (XPCC). Through these measures, Karamay can gradually be built into a regional economic highland, a modern transportation and logistics hub, a commercial and trade center, and a technological innovation highland for future industries.

Keywords: resource-based city transformation; overall urban function transformation; Xinjiang sub-center city

Karamay is a city born from national petroleum strategy. Reviewing its development trajectory, since the 1990s, Karamay has maintained a sense of crisis about "city decline when resources are exhausted," continuously consolidating and expanding its development goals in response to changing circumstances around the core proposition of "serving national strategies and promoting the transformation and development of resource-based cities." In July 1996, the seventh Party Congress of the Karamay Municipal Bureau proposed the development goal of "completing the water diversion project to Karamay and promoting Karamay's second entrepreneurship through the four major strategies of 'big petroleum, big petrochemicals, big agriculture, and big market' " [1]. In September 2006, the eighth Party Congress put forward the "1142" overall objective: one overall goal of taking the lead in basically achieving modernization throughout Xinjiang, and one overall requirement of building Karamay into a key new industrialization city in Xinjiang [1]. In 2016, the eleventh Party Congress proposed the development goal of "developing Karamay beyond Karamay itself, implementing the '632' development strategy, and building a world petroleum city" [2]. In December 2020, the eleventh plenary session of the eleventh Party Congress proposed "adhering to the 'one main, multiple elements' development approach, focusing on 'two transformations' of industrial structure and energy structure, and taking the lead in basically achieving socialist modernization throughout Xinjiang" [3].

Based on Karamay's current development status and building upon the devel-

opment goals and approaches of previous municipal committees, the new municipal committee proposed "consciously considering Karamay's development within the strategic framework of the nation and autonomous region, and from the perspective of Karamay's transformation development path, proposing to build a 'National New Industrialization Demonstration Zone'; from the strategic perspective of integrating into and serving the nation's new development pattern and the broader westward opening, proposing to build an 'Asia-Europe Golden Channel Strategic Hub'; and from the responsibility of serving Xinjiang's overall development and leading regional coordinated development, proposing to build a 'Xinjiang Sub-Center City' [3]."

Thus, building a Xinjiang sub-center city has become a major strategic project for Karamay, holding significant importance for its transformation and development. This paper conducts research on Karamay's development as a Xinjiang sub-center city from five aspects: the significance of building a provincial sub-center city; why building a sub-center city represents both a strategic choice for serving all of Xinjiang and an inevitable requirement for Karamay's transformation development; the foundations for Karamay to build a Xinjiang sub-center city; the bottlenecks facing Karamay in this endeavor; and practical pathways to promote Karamay's development as a Xinjiang sub-center city.

1. The Significance of Developing Provincial Sub-Center Cities

"Provincial sub-center city" [4] refers to a large or mega city within a province that ranks high in comprehensive strength, exerts certain economic radiation on surrounding cities, possesses a relatively complete economic structure, exhibits certain regional industrial division characteristics with the main center, yet maintains some distance from the main central city. It can function as a growth pole to drive regional development, such as Shizuishan, Guyuan, and Zhongwei in Ningxia Autonomous Region; and Zhanjiang, Shantou, and Zhuhai in Guangdong Province.

At the current stage, the necessity of building provincial sub-centers mainly manifests in several aspects [4]: First, the radiation and driving effect of sub-center cities on regional economies conforms to objective economic laws, with the mechanism primarily manifested in central cities serving as agglomeration and diffusion centers for production factors such as technology, capital, and talent. Second, it enhances urban radiation and driving capacity. Sub-center cities typically possess favorable location and resource advantages, capable of attracting more investment, talent, and technology to form strong economic agglomeration effects. Third, it optimizes urban spatial layout. Building sub-centers can guide population and industry transfer to surrounding areas, optimizing urban spatial layout, alleviating urban pressure, and improving urban livability. Fourth, it promotes industrial upgrading and transformation. Sub-center city construction is often accompanied by industrial structural adjustment and upgrading. By introducing emerging industries, cultivating advantageous industries, and

transforming traditional industries, cities can achieve economic transformation and upgrading, enhancing their industrial hierarchy and competitiveness. Fifth, it improves urban management levels. Sub-center city construction can drive innovation and improvement in urban management models, providing strong guarantees for sustainable urban development.

Once designated as a provincial sub-center city, it often receives policy and resource support from provincial and higher-level governments. Taking Ganzhou as an example, after the State Council issued a document in 2012 supporting Ganzhou's development as a provincial sub-center city, Jiangxi Province introduced a series of policy measures from multiple aspects including major infrastructure construction, industrial platform development, expanding central urban areas, and building regional centers, allocating numerous provincial resources to Ganzhou. This support has underpinned Ganzhou's economic development, increased its share of the provincial economy, and gradually formed a development pattern with Nanchang as the main center and Ganzhou as the sub-center.

The conditions for becoming a provincial sub-center city include [5]: (1) It must be a city with relatively high economic development levels, with a population generally exceeding 300,000. (2) It must be a city with comprehensive industrial development, with various functions such as culture, technology, and politics interconnected. (3) It must be a commercially developed city, playing important roles in agglomerating people and goods while attracting and distributing various industrial and agricultural products. (4) It must be a multi-function comprehensively developed city. The development of urban production and commerce will inevitably drive the development of science, technology, culture, and education, thereby accelerating urban transportation and finance development. (5) It must be a city in the optimal location within the regional spatial connection network. On one hand, it should be within the effective radiation range of the province's primary city; on the other hand, it should have convenient transportation and communication connections with other cities (towns) in the region. This paper will analyze and evaluate Karamay's foundation and development bottlenecks in building a sub-center city based on these criteria.

2. Building a Sub-Center City as Karamay's Strategic Choice to Serve All of Xinjiang and an Inevitable Requirement for Transformation Development

Xinjiang currently has only two provincial sub-center cities—Yining and Kashgar—both located in border prefectures far from the main central city of Urumqi. Through analyzing Xinjiang's geographical characteristics and regional economic development, this study proposes that building Karamay into a Xinjiang sub-center city conforms to Xinjiang's geographical features and the objective needs for healthy regional economic development, representing a strategic choice to serve all of Xinjiang. From the perspective of its own

development, relevant research suggests that Karamay's transformation should involve not only the transformation of its original resource-based industries but, more importantly, the transformation of overall urban functions [5][6]. This paper argues that building a sub-center city serves as an important means for Karamay to achieve this overall urban functional transformation.

From the perspective of Xinjiang's geographical characteristics, Xinjiang covers a vast territory of 1.6649 million square kilometers, accounting for approximately one-sixth of China's total land area [7]. As shown in Figure 1 [Figure 1: see original paper], Urumqi's radiation capacity as the capital diminishes with distance, making it difficult to effectively cover the entire region, resulting in insufficient central city radiation. Karamay is located 331 kilometers from Urumqi, an optimal distance that enables it to undertake broader economic radiation and driving functions. Geographically, it is an excellent choice for building a sub-center city.

Figure 1: Straight-line distances from various Xinjiang administrative centers to the capital Urumqi

As shown in Figure 2 [Figure 2: see original paper], from the perspective of healthy regional economic development, Xinjiang exhibits a clear economic 断层 (gap) phenomenon among its prefectures. In 2023, Urumqi's GDP far exceeded other prefectures, creating a significant 断层 [8]. For example, Urumqi's GDP accounts for approximately 22% of the province's total GDP [8], while the next largest prefectures—Changji and Aksu—are only about half of Urumqi's level. This economic 断层 phenomenon requires sub-center cities to address. Moreover, due to its historical foundation and advantages as the capital, Urumqi occupies substantial resources, leaving other prefectures and cities relatively resource-scarce and creating an overall ecological imbalance. Karamay ranks first in regional GDP among northern Xinjiang regions (Bortala, Tacheng, Altay, and Karamay). Building it as a sub-center city can better allocate resources at the autonomous region planning level, promote balanced resource distribution across Xinjiang, and alleviate resource pressure on Urumqi. Additionally, Xinjiang's existing urban structure development system suffers from imbalance, lacking support from medium and large cities. Building sub-center cities can optimize Xinjiang's urban structure and promote coordinated regional economic development.

Figure 2: Regional GDP of Xinjiang prefectures and regions

From the perspective of its own transformation and development, Karamay's secondary industry accounts for nearly 80% of its economy, an excessive proportion indicating heavy reliance on the petroleum industry and making it a typical resource-based city [7]. To break through current development bottlenecks (see Section 4 below), this study proposes that Karamay's transformation requires relying on the transformation of overall urban functions. By leveraging the development of a Xinjiang sub-center city as the entry point, Karamay can comprehensively enhance its functions across economic, technological, social,

and environmental dimensions, building itself into a regional economic highland, modern transportation and logistics hub, regional sci-tech industrial innovation highland, and modern commercial and trade center. Rather than merely upgrading industries, Karamay should establish a broad resource perspective and develop toward a comprehensive city with multiple industrial structures coexisting, forming a regional growth pole. The city's own development should drive overall regional economic progress, which in turn promotes the city's own advancement through peripheral regional improvements, achieving sustainable economic development.

3. Foundations for Karamay to Build a Xinjiang Sub-Center City

Karamay possesses unique advantages in policy and resources that surrounding cities lack.

In terms of policy advantages: First, favorable national and Xinjiang policies for western development. In 2020, the Ministry of Science and Technology's "Implementation Opinions on Strengthening Scientific and Technological Innovation to Promote a New Pattern of Western Development in the New Era" stated, "Accelerate the enhancement of innovation capabilities in regional characteristic prefecture-level cities such as Karamay and Deyang, explore differentiated innovation development paths, build distinctive regional innovation highlands, and create a power system for innovation-driven new and old kinetic energy conversion." In 2021, the State Council's "14th Five-Year Implementation Plan for Western Development" noted, "Accelerate the enhancement of Karamay's innovation capabilities as a regional characteristic prefecture-level city, explore differentiated innovation development paths, and build a distinctive regional science and technology innovation center."

Second, Karamay is located at the center of the western region of northern Xinjiang. It sits at the heart of the "four prefectures and five divisions"—Tacheng, Altay, Bole, and XPCC's 5th, 7th, 8th, 9th, and 10th Divisions—within the core area of the Tianshan North Slope Economic Belt. Third, Karamay is an important participant in the national westward opening strategy. It is located at the intersection of the China-Pakistan Economic Corridor, the New Eurasian Land Bridge, and the China-Central Asia-West Asia Economic Cooperation Corridor, as well as the intersection of the Silk Road Economic Belt's northern corridor, the Tianshan North Slope urban agglomeration, and the north-south Xinjiang corridor. Relying on its unique geopolitical and energy advantages, Karamay holds an important position in national and regional external cooperation. Fourth, it has abundant external opening platforms. Karamay maintains economic and trade relations with many countries, has established friendly relations with cities along the Silk Road Economic Belt, and has concluded international sister-city relationships with multiple cities in Russia, Kazakhstan, Pakistan, and Mongolia. It has joined the World Energy Cities Partnership (WECP), the China-SCO Big Data Cooperation Center Xinjiang Branch has

been unveiled and is operating substantively in Karamay, and it has been successively approved to open temporary aviation ports. These factors provide a solid foundation for international exchange and cooperation, making Karamay an important window for Xinjiang's opening-up [4].

In terms of resources, Karamay is resource-rich with thriving diversified industries. First, it has a solid industrial system foundation [7]. Numerous engineering technology service enterprises have gathered in Karamay, establishing a complete petroleum and petrochemical industrial system integrating production, transportation, storage, and refining. It is the region in Xinjiang with the most complete upstream and downstream petroleum and petrochemical industry chains, the strongest scientific research and engineering technology service capabilities, and the best financial service system, capable of providing full industrial chain services for onshore oil and gas exploration and development. Second, it has outstanding energy resource endowments. In terms of traditional energy, the Junggar Basin where Karamay is located has petroleum and gas resources reaching tens of billions of tons, with low comprehensive exploration degrees, making it the main battlefield for national oil and gas production. Oil sand, coalbed methane, and shale oil resources are also abundant. Regarding new energy, photovoltaic and wind power development prospects are broad; Karamay belongs to areas with very rich solar energy, and the city has large areas of land directly available for new energy industries such as wind and photovoltaic power. With numerous hydrogen application scenarios and large demand, it possesses the foundation and advantages for developing a hydrogen energy industry. Third, it leads in information technology capabilities. Karamay was the earliest in Xinjiang to deploy the information industry, having gathered the Xinjiang Autonomous Region Disaster Recovery Center, Huawei Cloud Service Data Center, CNPC (Karamay) Data Center, China Mobile (Xinjiang) Data Center, Carbon and Water Cooling Data Center, and other big data centers. It has opened the first international internet data dedicated channel in Northwest China, with cloud computing and data storage capabilities ranking among the top in Northwest China. It has rich experience in empowering traditional industries with digital technology, having launched "digital oilfield" construction early on. Currently, the oilfield IoT has basically achieved automated production process control, making it a national intelligent manufacturing pilot. These advantageous conditions have laid a solid foundation for Karamay to build a Xinjiang sub-center city.

4. Bottlenecks in Karamay's Development as a Xinjiang Sub-Center City

First, the industrial development structure is suboptimal. Local economic development heavily relies on the petroleum and petrochemical industry, with a singular industrial structure. The petroleum and petrochemical industry accounts for over 80% of Karamay's total economic output [7][8]. Under the current "tax-sharing" fiscal management system, the vast majority of taxes paid

by centrally-administered enterprises go to the central and autonomous regional governments, with insufficient tax revenue retained locally [7][8]. Meanwhile, local control over resources is insufficient, and the benefits of resource development do not adequately reach the local level. Oil and gas resources are controlled by centrally-administered enterprises, with large amounts of natural gas used as fuel for steam flooding oil extraction, creating difficulties for gas supply even in gas-producing cities. Additionally, the petroleum and petrochemical industry has low correlation with the local economy. Karamay's economic attraction and radiation capabilities to surrounding areas are limited, with "enclave" characteristics being quite prominent. Emerging industries have not yet formed scale or competitive advantages, contributing insufficiently to the local economy. Although the digital economy was deployed early, results are not obvious, lacking leading market entities and contributing little to economic growth. New energy and new materials industries are in their initial stages, with small industrial scale, insufficient industrial chain extension, and a lack of more leading enterprises and major projects [7][8].

Second, the market is narrow and marketization levels are low. A sound market mechanism is a prerequisite for regional central cities to realize their economic functions. Karamay's population is less than 500,000, smaller than some medium-sized cities in eastern China, which severely constrains its development into a regional central city. The local market within the region is too small, making it difficult to achieve economies of scale and limiting outward development, with diffusion effects also severely constrained. Moreover, as a petroleum city, Karamay's state-owned economy dominates, causing economic development factors to largely depend on the state-owned system, with the state as the main investment entity, underdeveloped talent and technology factor markets, and backward market concepts among citizens. Therefore, both in terms of the macro market environment and micro market operation mechanisms, Karamay lags far behind developed coastal market economies. As a resource-based city, Karamay's economic development process exhibits prominent characteristics of industrialization and marketization being out of sync and uncoordinated. In promoting regional economic cooperation, the degree of marketization is more important and fundamental than the industrialization foundation. Underdeveloped market systems, insufficient vitality of market entities, urban economies operating within dominant industries, inadequate spatial expansion momentum for economic development, and weak connections with surrounding economies have become major obstacles limiting Karamay's own development and that of its surrounding areas.

Third, scientific and technological innovation capacity is insufficient. The leading role of the high-tech zone in innovation is not effectively played. As a newly established high-tech zone, its scale is small, the innovative role of enterprises as the main entity is insufficient, and efforts to introduce and cultivate high-tech enterprises need to be strengthened. Local enterprises have weak innovation capabilities. Among Karamay's industrial enterprises above designated size [9], the proportion of enterprises with R&D activities is lower than the national level.

Except for petroleum and petrochemical enterprises, other local technology enterprises have incomplete R&D infrastructure and weak independent R&D capabilities. Research platforms are not high-level and the system is incomplete. Karamay has few scientific and technological R&D platforms that are small in scale, with no truly national-level platforms, and most research platforms focus on petroleum development and technical services, with few platforms in emerging fields. The Silk Road Innovation Development Research Institute has an unclear development positioning and its intellectual support role is not obvious. Investment in scientific research and innovation is insufficient. In recent years, constrained by the small total number of enterprises, single industrial layout, and the impact of the COVID-19 pandemic, Karamay enterprises have generally low willingness to invest in scientific research. In 2022, the city's total social R&D expenditure was 0.74% [7][8], ranking third in Xinjiang but far below the national average of 2.55% [7][8].

Fourth, green development remains a formidable task. In 2021, Karamay's total energy consumption almost entirely came from centrally-administered petroleum and petrochemical enterprises [7][8]. The heavy industrialization industrial structure and sector characteristics determine that Karamay faces heavy pollution prevention tasks, high resource and energy utilization intensity, and difficulty in rapidly adjusting its industrial structure.

Fifth, infrastructure support capacity is weak. In transportation, the overall network system remains incomplete with low grades; highways to ports have significant deficiencies; interference between main highways and urban planning is increasingly prominent; existing railway transport capacity is insufficient; as an important diversion and alternate airport for Urumqi International Airport, the current airport service support capacity is insufficient with too few routes, requiring acceleration of airport expansion and renovation projects. In energy, power grid support capacity is insufficient with risks in the power grid framework and inefficient management systems; new energy projects face difficulties in market-oriented grid connection access, with wind and photovoltaic power generation potential not fully released. In water conservancy, water resource endowment conditions are insufficient, heavily dependent on external water transfers with single water sources; the water diversion project has been operating for many years and urgently needs upgrading and renovation; there is neither a clear and comprehensive overall plan nor adequate water conservancy infrastructure support for comprehensively and efficiently promoting water resource utilization, agricultural modernization, and ecological civilization construction.

5. Practical Pathways to Promote Karamay's Development as a Xinjiang Sub-Center City

5.1 Optimize the Tax Distribution Mechanism

Increase the tax retention ratio for centrally-administered petroleum enterprises stationed in Karamay to enhance local fiscal autonomy and build a regional eco-

nomic highland. Currently, taxes on crude oil and natural gas from Xinjiang Oilfield Company stationed in Karamay are allocated according to administrative jurisdiction. As an old oilfield development area, Karamay's jurisdiction faces increasing pressure to maintain stable production. With the development and construction of new blocks outside its jurisdiction, the local tax and fee allocation ratio for crude oil and natural gas is declining year by year, creating a prominent issue of "increased production without increased tax revenue." Meanwhile, with urban development, fiscal rigid expenditures have further increased, particularly after assuming social service functions from centrally-administered petroleum and petrochemical enterprises. Therefore, it is recommended to seek support from the state and autonomous region to launch the localization registration and joint venture cooperation work for centrally-administered enterprises, promote the diversification reform of Xinjiang Oilfield Company and Dushanzi Petrochemical Company's equity structure, and change them from branches to subsidiaries so that relevant taxes can be retained in Karamay. On this basis, gradually strengthen Karamay's infrastructure construction and promote ecological environment construction and green sustainable development.

5.2 Consider Administrative Division Adjustments

Incorporate Kuitun City into Karamay's administrative jurisdiction to build a modern transportation and logistics hub and commercial center. Historically, Kuitun City was once under Karamay's jurisdiction (1958-1975). Currently, as an "enclave" of Ili Kazakh Autonomous Prefecture, Kuitun City serves an important transportation hub function. As shown in Figure 3 [Figure 3: see original paper], incorporating it into Karamay would truly lay the foundation for Karamay to build a modern transportation and logistics hub. Transportation-wise, it would enable Karamay to radiate to major cities and important export ports in northern Xinjiang: northward to Tacheng City, Altay City, Bakhtu Port, Jeminay Port, Ahetubiek Port, and Hongshan 嘴 Port; eastward to Yining City, Alashankou Port, and Khorgos Port; westward to Urumqi City, Hami City, and inland regions. On this basis, vigorously develop modern service industries such as logistics and transportation, commercial cooperation, and chain operations to improve the current unbalanced industrial development structure.

Figure 3: Transportation and administrative division map of Karamay and its surrounding areas

5.3 Develop New Productive Forces According to Local Conditions

Develop new productive forces according to local conditions to build a technological innovation highland for future industries. Most importantly, it is essential to identify the positioning of new industries, followed by leveraging government investment and financing for investment attraction to introduce high-quality external enterprises to drive local industrial development. In this process, continuously accumulate substantial capital, human resources, and advanced technology to cultivate Karamay's own innovation and development capabilities.

In the initial stage, various regions can adopt a zoned positioning approach, striving for complementary and coordinated development among industries.

5.4 Accelerate Regional Collaborative Development

Table 1 shows the resource distribution of Karamay and its surrounding "four prefectures and five divisions" [7][8]. Cooperation with surrounding prefectures and XPCC divisions should be deepened in infrastructure, industry, livelihood, and ecological environment to further enhance Karamay's agglomeration, radiation, and engine functions. Build regional industry-university-research integration platforms to promote integrated development of higher education in western northern Xinjiang. Accelerate the construction of autonomous region-level regional medical centers, build a northern Xinjiang regional medical specialty alliance and medical and health talent training base, and promote sharing of regional medical resources. Research and promote the joint construction of Bakhtu Port infrastructure interconnectivity between Karamay and Tacheng. Leverage the role of the "Urumqi-Changji-Turpan-Shihezi-Karamay" five-region tourism alliance to form an integrated development pattern for large-scale tourism in northern Xinjiang. Jointly promote the construction of the Duku Highway scenic route with counties and cities along the highway. Strengthen industrial cooperation in western northern Xinjiang, prioritizing the launch of major resource development and processing and manufacturing projects with consensus and foundation. Accelerate cooperation with surrounding prefectures such as Tacheng and Altay in facility agriculture, standardized breeding, and planting technologies to build regional famous, special, and excellent agricultural and livestock product brands. Actively promote cooperation with surrounding prefectures such as Ili and Altay on rational development, utilization, and management protection of major river water resources. Continue strengthening complementary industrial cooperation in the "Kuitun-Dushanzi-Urumqi-Hutubi" region and promote joint prevention and control of regional air pollution.

Table 1 Main Resource Characteristics of the Four Prefectures and Five Divisions

Region	Resource Type	Characteristics
Karamay City	Mineral Resources	Petroleum, natural gas, natural asphalt, asphalt sand, etc.
	Tourism Resources	18 A-level scenic spots, 1 AAAAA-level (Urhe World Devil's City)
	Water Resources	Relatively scarce; has Ailik Lake and Karamay River within city; built water diversion project

Region	Resource Type	Characteristics
Altay Region	Mineral Resources	Copper, nickel, lead, zinc, gold, iron, rare metals, muscovite, bentonite
	Tourism Resources	47 A-level scenic spots, 2 AAAAA-level (Kanas Scenic Area, Koktokay Scenic Area); 417 glaciers covering 293.2 km^2; 56 rivers with basin area of 95,700 km^2 and annual runoff of 12.344 billion m^3; major lakes include Ulungur Lake, Kanas Lake, Jili Lake
	Forest Resources	Xinjiang's largest natural forest area with 69.9568 million mu of forest land
(5th Division)	Mineral Resources	Limestone, salt, glauber's salt, quartz, decorative granite, copper, gold, geothermal
	Tourism Resources	34 A-level scenic spots, 1 AAAAA-level (Sayram Lake Scenic Area)
(7th Division)	Mineral Resources	Oil and gas, coal, gold, salt, bentonite
	Tourism Resources	68 A-level scenic spots but lacks 5A-level scenic spots
	Water Resources	107 rivers of various sizes, divided into 5 water systems: Manas River, Kuitun River, Emin River, Baiyang River, and Hobok River
(8th Division)	Mineral Resources	Limestone, granite, geothermal resources
	Tourism Resources	Strange Stone Valley Scenic Area (AAAA)
	Water Resources	5 reservoirs with total capacity of 29.08 million m^3; 26 small hydropower stations
(9th Division)	Tourism Resources	Yanghu River Eco-tourism Scenic Area (AAA, National Wetland Park)
	Water Resources	Yanghu City has 12 reservoirs with total capacity of 343.995 million m^3

Region	Resource Type	Characteristics
(10th Division)	Tourism Resources	Xinjiang Corps Military Reclamation Museum (AAAA), Anjihai Grand Canyon (AAA)
	Water Resources	Abundant water resources; 5 main rivers within territory: Manas River, Ningjia River, Jingou River, Danangou River, and Bayingou River, with annual runoff of 1.53 billion m^3; 11 large, medium, and small reservoirs with total storage capacity of 433 million m^3
	Tourism Resources	Peony Valley (AAAA), Bayimuzha (AAAA), Sun Longzhen Patriotic Education Base (AAA)
	Mineral Resources	Beryllium, muscovite, potassium feldspar, gold, copper, nickel, bentonite
	Water Resources	Abundant water resources; 7 main water diversion rivers belonging to 3 major water systems: Irtysh River, Ulungur River, and Sawur Mountain area; 16 medium and small reservoirs

The transformation and development of resource-based cities involves not only the transformation of original resource-based industries but, more importantly, the transformation of overall urban functions. To achieve leapfrog economic development, Karamay should fully leverage its policy and resource advantages, using the construction of a Xinjiang sub-center city as a crucial breakthrough point to align urban transformation with Xinjiang's overall economic development strategy, building itself into a regional economic highland, modern transportation and logistics hub, regional sci-tech industrial innovation highland, and modern commercial and trade center.

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Note: Figure translations are in progress. See original paper for figures.