



Legacy Report of Olympic and Paralympic Winter Games Beijing 2022 (pre-Games)





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Beijing Organising Committee for the 2022 Olympic and Paralympic Winter Games
Beijing Sport University

Foreword

Creating Olympic legacy is an increasingly important goal for the modern Olympic Movement and is highly aligned with the vision of "building a better world through sport". The value of hosting the Games goes beyond creating a splendid stage for athletes to compete fairly and achieve their personal ambitions, and includes the creation of tangible or intangible long-term benefits for the people, the host territories and the Olympic Movement.

The Olympic and Paralympic Winter Games Beijing 2022 (hereinafter, "Beijing 2022 Games") is the first delivering

a full legacy plan three years before the Games. Since the success of the Beijing candidature on July 31, 2015, the Beijing Organising Committee for the 2022 Olympic and Paralympic Winter Games (hereinafter, "Beijing 2022") has been committed to the mission of hosting "Green, Inclusive, Open and Clean" Games. Under the guidance of the Olympic Agenda 2020 and the New Norm, it is fully engaged in the Games preparation as planned, with a view to delivering "fantastic, extraordinary and excellent" Olympic Games. To achieve the goal, Beijing 2022 is working closely with stakeholders including the

national authorities, host city, social organisations, public institutions and enterprises, and doing its best to align the preparatory efforts with the host city's development objectives and people's expectations for a better life. Beijing 2022 is determined to leave a rich and sustainable legacy for the host city and the region and create a future of mutual benefit and win-win development for both the Olympic Movement and the host country.

To plan and create Games legacies and promote sustainable socio-economic development, Beijing 2022 has been working closely with

the International Olympic Committee (IOC) and the International Paralympic Committee (IPC), drawing on the experience of the previous Games and utilising the legacies of the Olympic Games Beijing 2008. It is working with national authorities, the local governments of Beijing and Zhangjiakou, the venue owners and other stakeholders to establish an efficient coordination mechanism, and formulate and enforce the Strategic Legacy Plan of the Olympic and Paralympic Winter Games Beijing 2022. The plan proposes to create a series of Games legacies in 35 areas, covering sports, economy, society, culture,

environment, urban and regional development.

As a result of the efforts in the last five years, important progress has been achieved in many aspects of the plan and some legacies have already materialised, bringing benefits to the local people and host territories well before the Games. Such early legacies include the popularisation and development of winter sports, urban transformation and upgrade, transformation of the Beijing–Zhangjiakou region into a successful four-season tourism destination, accelerated integration of regional transportation, and contributions to poverty

alleviation. Along with the progress of the Games preparation, Games legacies will materialise, bringing even greater long-term benefits to the people and urban development.

Prepared according to IOC's requirements, this is an annual legacy report for the year of 2020 which summarizes and highlights all essential legacy outcomes and achievements since Beijing's successful candidature in 2015. This will be followed by a series of other legacy reports and case studies to give a full picture of the Olympic legacies created by the Beijing 2022 Games.

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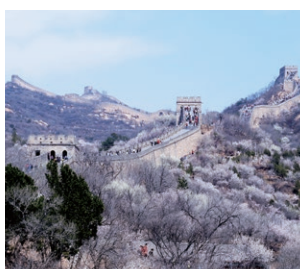
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1

POPULARISATION OF WINTER SPORTS IN CHINA



• Dry skiing at the Shijia Primary School in Beijing

POPULARISATION OF WINTER SPORTS IN CHINA

The preparation and hosting of the Beijing 2022 Games will greatly promote the popularisation and development of winter sports in China. Since the beginning of the Games preparation, Beijing 2022 has been working closely with the central and local governments, aiming to encourage 300 million Chinese to engage in ice and snow sports. To achieve this ambitious objective, a policy framework for long-term development of winter sports has

been established to encourage all people to participate in winter sports. This framework is aimed at breaking the regional, seasonal, social and cultural boundaries in winter sports, facilitating the national fitness for all programme, popularising the sports culture, and promoting the upgrade of winter sports industry. Thanks to these efforts, the ambitious vision of "encouraging 300 million of Chinese to engage in ice and snow sports" is gradually coming true.

Increased access and opportunities to experience winter sports

The past five years witnessed a rapid increase in the population engaging in winter sports. According to China Tourism Academy, the number reached a record-breaking number of 224 million¹ in the winter season of 2018–2019, exceeding 200 million for the first time in history.

Number of snow tourism participants in the 2016–2019 snow seasons



¹ China Tourism Academy, Report on Ice and Snow Tourism Development in China (2020). The number of people engaged in ice and snow sports is based on person time.

Winter sports popularisation plans have been formulated and implemented to expand the winter sports from Northeast China and North China to the south and northwest regions of the country, promote the practice of winter sports in four seasons, and hold various events of winter sports for all.

Creating popular events and activities of winter sports for all

In this regard, winter sports for all activities such as the National Public Ice and Snow Season and National Public Ice and Snow Week are organised; non-governmental sectors are called upon to stage amateur winter sports events; and

concentrated publicity and promotion are made to make these events popular.

Organising winter sports-related events in all seasons

In non-snow seasons, sports events related to winter sports skills such as roller skating, grass skiing and roller skiing are organised; online ice and snow events are also streamed using the Internet technology in all seasons and for all people.

Popularising winter sports among people with impairments

In the whole country each year, more than 1,000 ice and snow activities are organised in diverse forms for people



● Ice Cuqiu

with impairments, such as floorball, table curling, floor curling, ice cuqiu and VR snow sports, providing a platform for them to participate in winter sports.



● Floorball Sports at the Shijia Primary School in Beijing



• The 6th National Public Ice and Snow Season kicks off at Tianjin Olympic Centre Stadium (cnsphoto)

Case study

National Public Ice and Snow Season

Starting from 2014, National Public Ice and Snow Season has been held every December for six consecutive years, gradually growing into a nationwide popular event. To date, this event has become an influential platform to spread the ice and snow culture, promote winter sports and motivate people to participate in winter sports. The 5th National Public Ice and Snow Season attracted more than 22 million participants and a total of 1,408 events were held in 31 provinces, autonomous regions and municipalities across China.

With its sports and cultural programme constantly enriched, the National Public Ice and Snow Season is playing a great role in promoting the healthy development of ice and snow sports for the general public and bringing winter sports closer to their life.

- ◆ Open Classes on Winter Sports for All are organised. Free classes are offered by 33 ice and snow resorts across the country to pass on ice and snow sports knowledge to the general

public. Besides, "Winter Sports Ambassadors" are invited to teach in key classes.

- ◆ A "National Advisory Committee of Winter Sports Experts" is established, bringing together experts, scholars, well-known athletes, coaches, as well as winter sports professionals to contribute their ideas and wisdom for winter sports development in China.
- ◆ To cater for the great interest of the public in winter sports, standards for the training of skiers and assessment of ice and snow sports instructors

**22
Million**

22 Million
Participants

1,408

1,408 Events

31

31 Provinces,
Autonomous Regions,
and Municipalities

The 5th National Public Ice and
Snow Season

(the National Standard for the Technical Levels of Mass Skiers, and the Implementation Rules for Training and Assessing Skating Instructors) are issued, aiming to guide the safe, scientific and joyful development of winter sports for all.

- ◆ Public winter sports event series "Sliding Towards 2022" includes:
 - ◇ National Public Speed Skating Marathon;
 - ◇ National Public Cross Country Skiing and Roller Ski City Challenge;
 - ◇ Skating, Skiing, Ice Hockey and Curling events;
 - ◇ World Snow Day;
 - ◇ Winter Sunshine Sports Meet;
 - ◇ Marathon on Ice and Snow.
- ◆ To promote the leading role of the China Winter Sports Festival, a programme of "100-City Tour" is carried out to encourage public engagement in winter sports and more winter sports enterprises to get involved, aiming at further upgrading the Festival and allowing winter sports to reach out to more regions and people.
- ◆ Nearly 1,000 ice rinks will be built in no less than 100 cities across China (hereinafter, the "Ice Rink Programme"). These ice rinks will be open free of charge or at

an affordable cost to the public, thus encouraging more people to practise winter sports.

- ◆ Complementing the "Ice Rink Programme", and in line with standards for the training of skiers and assessment of ice and snow sports instructors, a series of training programmes are launched, aiming to help winter sports participants improve their skills and increase professionals for training work.
- ◆ The mascots "Bing Wa" and "Xue Wa" of China Winter Sports Festival are released to enhance the public's knowledge and interest in winter sports and promote China's ice and snow culture. A series of mascot

products will be available on the market.



● Bing Wa and Xue Wa

The National Public Ice and Snow Season has met people's diversified needs for fitness in winter and become an impactful event in fulfilling the national strategy of fitness for all and popularising winter sports. It has worked as an engine for promoting the vision of "encouraging 300 million of Chinese to engage in ice and snow sports".



● Yanqing Leg of 2016 National Public Speed Skating Marathon

Promotion of winter sports among the youth

Introducing winter sports into schools. The educational authorities have continuously promoted the "Winter Sports for the Youth" project and the "Ice and Snow Programme for Schools" and issued the Beijing 2022 Olympic Education Programme for Primary and Middle School Students (hereinafter, "Beijing 2022 Education Programme"). To integrate winter sports knowledge into school curriculum, various forms of winter sports education are carried out in schools, such as teaching winter sports knowledge and history, building synthetic ice rinks, opening winter sports classes, training winter sports teachers, and setting up winter sports clubs. A number of schools featuring winter sports and model schools for Beijing 2022 Education Programme are selected and set up all over the country. As of 2019, 627 model schools and 1,036 schools featuring winter sports were designated and named. Beijing 2022 educational and teaching materials are compiled and converted into



● Synthetic Ice Rink



● Beijing 2022 educational materials are released

multimedia versions to diversify the means of education, such as:

- Olympic Values Education Programme (OVEP) Chinese Version;
- Paralympic Values Education Programme (I'm POSSIBLE) Chinese Version;
- Inside Beijing 2022 and a series of Olympic Readers;
- Olympic Knowledge Classroom.

Diverse ice and snow mass events for the youth outside of school. The World Snow Day & International Children's Skiing Festival (a designated event for teenagers held during the National Public Ice and Snow Season), the National Public Ice and Snow Week (held during the summer vacation), the Youth Ice and Snow Winter Camp, and a series of free ice and snow events for the youth held in winter have attracted more and more teenagers.

Neighbourhood communities are encouraged to work with ice and snow enterprises to organise ice and snow activities for the youth.

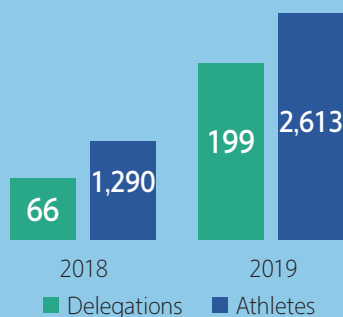
Youth winter sports competitions are in full swing. In 2018, the Chinese Ice Hockey Association organised the U Series Junior Ice Hockey Championships (for primary and middle school students). 1,290 athletes in 66 delegations from 12 provinces, autonomous regions and municipalities competed in five groups at the Championships. In Beijing, youth ice hockey, skiing and figure skating events are flourishing. Among these events, the Beijing Youth Hockey League has become the largest in Asia. In 2019, 2,613 athletes in 199 delegations coming from 31 clubs participated in a total of 824 competitions at the Championships.

At the 2019 Beijing Primary and Secondary School Ice Hockey League, 1,900 athletes in 132 delegations sent by 118 schools competed in 325 competitions. The 1st Beijing Winter Games attracted as many as 62,400 participants, and more than 5,700 athletes competed in the finals.

Improved engagement of social organisations in winter sports

Supporting the development of mass winter sports organisations. Pilot programmes have been launched to improve and reform the national winter sports federations, and boost their roles in sports for all, sports culture and other aspects. Local winter sports associations are encouraged to enhance their capacity to deliver winter sports services on governmental orders. Efforts are being made to accelerate the development of winter sports activities in local communities and rural areas. Beijing facilitates the establishment of winter sports associations at both municipal and district levels, and coordinates the resources of winter sports venue operators and clubs. These winter sports associations are encouraged to establish local clubs for skating, ski, and curling, to provide more convenience for the local residents to participate in winter sports. Hebei Province and the city of Zhangjiakou also support the local winter sports associations to offer services to facilitate people's participation in

The U Series Junior Ice Hockey Championships (for primary and middle school students)



2019 Beijing Primary and Secondary School Ice Hockey League



118 schools



132 teams



1,900 athletes



325 games

winter sports. To date, the total number of winter sports clubs in Hebei Province has reached 162.

Enhancing the training for winter sports instructors. Robust training systems and assessment mechanisms have been in place in order to train highly professional, highly skilled and highly competent winter sports instructors and fitness instructors for people with impairments. As of 2019, Beijing provided training



● Certification training for ski instructors in Yanqing District, Beijing

programmes for a total of 23,000 winter sports instructors, while Hebei Province offered training to 9,300¹.

Creation of a policy system to support winter sports

A series of documents have been issued by governments at all levels. These documents have systematically defined the objectives, tasks and basic paths for the popularisation and development of winter sports, improved the policy environment, and provided strong support for the long-term sustainable development of winter sports in China. The following annex is the list of the documents:

¹ <http://he.people.com.cn/n2/2019/0312/c192235-32728615.html>

Case study

Beijing Ice Hockey Association

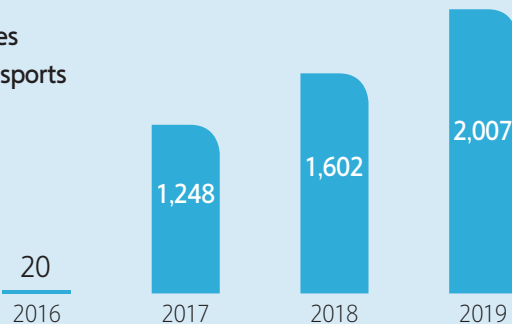
Early after its inception on 28 May, 2012, Beijing Ice Hockey Association decided to plan for the development of ice hockey in Beijing and organise domestic and international ice hockey competitions and international exchange activities.

With the aim of further popularising ice hockey among the young people, the Association has been engaged in organising various ice hockey competitions and related activities on a regular basis over the years. Thanks to its efforts, ice hockey has become a very popular sport for the youth in Beijing, and their family members, classmates and friends are also inspired to practise or follow the sport. Apart from organising competitions, the Association is also engaged in training the junior ice hockey teams and youth ice hockey teams in Beijing.

Today, more than 4,000 ice hockey players are registered with Beijing Ice Hockey Association, and more than 2,500 ice hockey competitions

Beijing youth athletes registered in winter sports

Ice hockey



at various levels are held throughout the year. At the National U Series Junior Ice Hockey Championships (for primary and middle school students) from 2018 to 2020, the Beijing team won a total of 11 gold medals. At the 2nd National Youth Games in 2019, the Beijing team pocketed all three gold medals for men's teams and won one gold and one silver for women's teams in the ice hockey competitions.

Major events organised by the Association currently include the



4,000+

4,000+ ice hockey players registered



2,500+

2,500+ ice hockey competitions held

Beijing Youth Hockey League, Beijing Primary and Middle School Ice Hockey League, and the Olympic City Cup Minor Hockey Invitational Tournament. In addition, each year the Association sends the Beijing junior hockey teams to America and Europe to participate in international tournaments and international exchange programmes, and the teams of all age groups have achieved remarkable results.

Beijing not only boasts the largest number of young ice hockey players, but also represents the highest level of performance in the country. While competing with their peers from all over the world, these athletes also serve as ambassadors of the city to promote international exchanges and friendship.

Case study

Integration of Olympic Education into Special Education

Olympic education has been effectively carried out at schools of special education¹. Courses on sports suitable for students with impairments, such as ice cuqiu, simulated curling and roller skating, are provided at schools of special education to engage more

teenagers in winter sports. As of 2019, there were 7 schools of special education featuring ice and snow sports (with about 1,503 students) and 8 Olympic model schools of special education (with about 2,108 students). As such, winter sports are effectively popularised among

students with impairments, and a special education system with winter sports teaching, training, competitions and services is established.

¹ Special education refers to the education system for people with impairments and special needs

Winter sports programmes in schools of special education in Beijing



Winter sports programmes in schools of special education in Zhangjiakou







2

WINTER SPORTS DEVELOPMENT IN CHINA

- Sui Wenjing (up) and Han Cong of China perform during the Pairs' Free Skating program at the 2019 Shiseido Cup of China ISU Grand Prix of Figure Skating in Chongqing

WINTER SPORTS DEVELOPMENT IN CHINA

Being a driving force in popularising winter sports in China, Beijing 2022 has also greatly advanced the competitive level of winter sports in China. The following are the numbers of medals that the national teams of winter sports harvested in various international events in the last few years:

Year	Medals
2013	40
2015	42
2017	63
2019	69

To prepare for the competitions of the Games in 2022, China's winter sports team is building up its strengths while working to overcome its weak points. The structure of winter sports is being optimised while the building of professional teams has been strengthened and the development of a talent pool of athletes has been emphasised. Now, the national team of China is ready to participate in all events of winter sports.



Chinese player Gao Tingyu participated in the speed skating competition of the Olympic Winter Games PyeongChang 2018

China's Progress in Winter Sports

5,108

2015

10,622

2019

In China, 10,622 athletes registered in national ice and snow sport events in 2019, doubling the number of 5,108 in 2015

4,000

4,000 athletes and coaches prepared, 7 times more than PyeongChang 2018

1,153

1,153 athletes selected to participate in Beijing 2022

31

31 National Training Teams

109

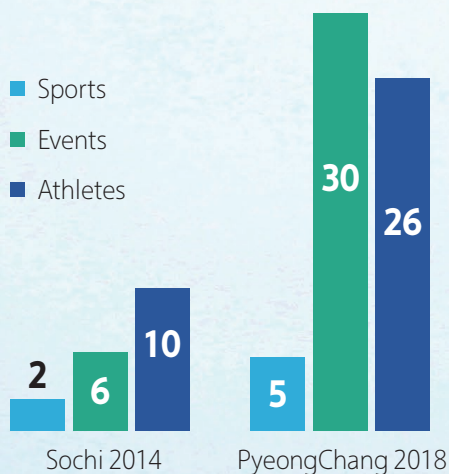
Participate in 109 events at Beijing 2022



Para-winter sports participation

10 athletes with impairments, 6 events in 2 sports at Sochi 2014

26 athletes with impairments, 30 events in 5 sports at PyeongChang 2018



FIRST

2018

Chinese Wheelchair Curling Team – China's first Paralympic gold medal in PyeongChang 2018
Chinese Paralympic Ice Hockey Team – 1st place in Group C at the World Championships



2019

Chinese Wheelchair Curling Team – First gold medal at the World Championships
Chinese Para-Snowboarding Team – 2 Gold medals at the World Championships
Chinese Para-Alpine Skiing Team – 3 Gold Medals at the World Cup competitions
Chinese Paralympic Ice Hockey Team – 1st place in Group B





● Chinese delegation's achievements in PyeongChang 2018

Development of competitive winter sports reaching a new level

The structure of the winter sports teams is more balanced in order to cover all events of winter sports. By the end of 2018, 31 national training teams, covering all the 109 events of Beijing 2022, and about 4,000 athletes and coaches, 7 times more than those preparing for PyeongChang 2018 in corresponding period, were in place. In 2019, the number of athletes preparing for the Games was slimmed down from 4,000 to 1,153 and the building of national teams and training teams covering all the 109 events was completed.

As a long-term strategy, a talent pool of athletes has been developed. Schools, enterprises and non-governmental sports organisations are encouraged and guided to play their part with respect to the development of future winter sports talents. The year 2019 saw 10,622



● Xu Mengtao, Shao Qi and Xu Nuo won all medals of the Ladies' Aerials at the 2018/19 FIS Freestyle Ski Aerials World Cup in Lake Placid

athletes registered in national winter sports events, which doubled the number of 5,108 in 2015. By the end of 2019, five youth ice hockey teams and one ski team of municipal level were built with the support of Beijing municipal government; 126 winter sports teams were established at district level; and 5,517 youth athletes registered in winter sports. Meanwhile, in Hebei Province, 10 talent-pool athlete bases and 20 clubs for winter sports were set up; and 20 schools were designated as pilot schools in introducing winter sports.

The national team's performance is steadily improving through intensive training and preparation for the Games. The national teams have achieved good results in international competitions, winning 69 medals in 2019 compared to 42 in 2015. The number of medals won in snow sports international competitions was almost doubled from 16 in 2015 to 31 in 2019.¹ At PyeongChang 2018, the Chinese delegation participated in a record-high number of events, and achieved breakthroughs in four events, namely the first Olympic gold medal of Men's Short Track Speed Skating, the first Olympic medals in Snowboard and Men's Speed Skating, and the fourth place in Figure Skating Men's Individual. In the 2018–2019 season, China's

¹ Data source: *Follow the National Teams*, the Winter Sports Administrative Centre of the General Administration of Sport of China



● Chinese team won a gold medal at PyeongChang 2018

Skeleton team championed the IBSF Europe Cup and North American Cup. In the 2019–2020 season, the Chinese teams with full lineups participated in all the competitions of Freestyle Skiing Aerials and Snowboard Halfpipe World Cups. This is achieved through the development of technological solutions, improvement of medical rehabilitation, technical and tactical training, and upgrade of sports equipment.

Competitive winter sports for people with impairments

The fundamental work has been strengthened. The ice sports facilities for people with impairments have seen

a rapid growth with 10 new national-level winter sports training bases set up since 2015. China Disabled Persons' Federation has been working closely with countries with excellent winter sports traditions including Finland, Russia, and Greece in selecting and training coaches, classifiers and referees. A supporting system for selecting and training athletes with impairments in winter sports has been established and improved. A pool of athletes has been built and maintained through the approaches of selecting winter sports athletes from summer sports, inside and outside China, with and without international coaches, and integrating competitions with trainings. As the result of more

Paralympic winter sports events, both national and international, staged in China, the athletes' competitive level is constantly improving.

Results in competitions improved greatly. As more and more Paralympic winter sports competitions are taking place in the country, trainings and competitions have covered all Paralympic events. There have been drastic improvements in both the number of athletes participating in international competitions and their results. In 2017, China won its first gold medal in Para Snowboard World Cup and championed the Intercontinental Cup in Para Alpine Skiing. Compared with a delegation of 10 athletes

attending 6 events in 2 sports in Sochi 2014, a delegation twice the size participated in PyeongChang 2018, with 26 athletes attending 30 events in 5 sports, the largest delegation ever sent by China to the Paralympic Winter Games. The Chinese Wheelchair Curling Team won China's first Paralympic gold medal in PyeongChang, which was a historic breakthrough. In the same year, the Chinese Paralympic Ice Hockey Team made its debut in the World Championships and topped Group C. In 2019, the Chinese Wheelchair Curling Team won the gold medal at the World Championships for the first time; the Para-Snowboarding Team grabbed two gold medals in the World Championships; the Para-Alpine Skiing team pocketed three gold medals in the World Cup competitions; and the Paralympic Ice Hockey Team won the third place in Group B.

Winter sports events growing in both quantity and quality

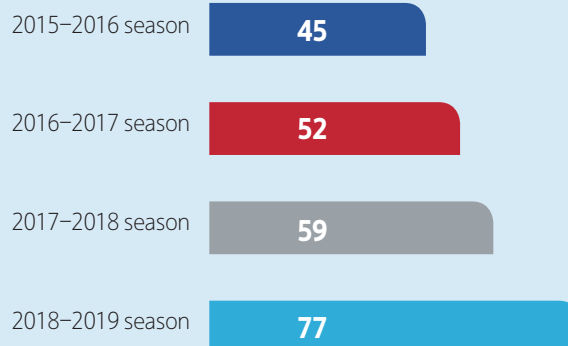
An increasing number of winter sports events are taking place year by year and the level of these events is steadily upgrading, which have provided a great platform for the development of winter sports and the growth of athletes in China. It has also played an important role in expanding the popularity of winter sports in China.



● National Ice Sports Arena for People with Impairments

National winter sports events staged increasingly year by year

Number of national winter sports competitions held from 2015 to 2019



International events are becoming increasingly popular

China hosted 10 international winter sports events in 2015/16 season¹



IHF Ice Hockey Women's
World Championships
Division I, Group B



Audi Cup of China ISU Grand Prix
of Figure Skating



Air + Style Beijing World
Snowboard Tour

Beijing hosted 28 international winter sports events in 2019²

WCF Curling World Cup Grand Final

10 countries and regions
24 teams
81 athletes



FIS China Beijing Roller Ski World Cup 2019

22 countries and regions
168 athletes



(cnsphoto)

FIS Cross-Country Skiing China City Sprint Beijing

30 countries and regions
200+ athletes



FIS Freestyle and Snowboard World Cup

25 countries and regions
146 athletes



¹ <http://www.sport.gov.cn/dyzx/n5172/c744688/content.html>

² Source: Beijing Sports Competition Management Centre



An aerial photograph of a snowy mountain slope. Several skiers are visible on the slope, moving downwards. The snow is bright white, and the surrounding trees are covered in a thick layer of snow, appearing white and brown. Long shadows are cast across the snow, indicating a low sun position. The overall scene is a winter sports venue.

3

EXPANSION OF WINTER SPORTS VENUES AND FACILITIES IN CHINA

● A ski resort in Zhangjiakou



● Beijing Sport University Ice Hockey Rink



● A ski resort in Chongli

EXPANSION OF WINTER SPORTS VENUES AND FACILITIES IN CHINA

The preparation for Beijing 2022 has made Chinese people increasingly enthusiastic about winter sports, which has resulted in a growing need for more winter sports venues and facilities. Beijing 2022 has been an opportunity to re-deploy public resources and obtain broader private capital investment in the construction of high-quality winter sports facilities nationwide. These efforts have facilitated the popularisation of winter sports and the healthy growth of winter sports industry in China.

Plan for winter sports venues and facilities formulated and implemented

The *Plan for the Construction of Winter Sports Venues and Facilities in the Country (2016–2022)* has been formulated, in which the General Administration of Sport of China put forward the "Ice Rink Programme":

- building a number of new venues;
- renovating existing venues; and
- transforming abandoned or unused buildings.

Local governments, including those of Beijing and Hebei, have developed and implemented their own construction plans for winter sports venues. Consequently, the construction of winter sports facilities throughout the country is now up to a new level.

Number of Winter Sports Venues



¹ Report on Development of China's Ice Sports Industry (2017)



Requirements for the construction of winter sports venues and facilities

Firstly, the construction of skating rinks:

- Cities with more than 500,000 permanent residents in urban areas are encouraged to build public skating rinks. For those with available appropriate conditions, at least one skating rink with a $61\text{m} \times 30\text{m}$ ice surface should be built.
- Schools are also encouraged to build skating rinks. Construction of natural skating rinks and removable skating venues is promoted for schools, parks, leisure squares and public spaces in local communities.
- Beijing has requested each of its districts to build at least one new indoor skating rink or removable skating rink with an ice surface of no less than $1,800\text{ m}^2$ and 50 open-air



• Sunac Snow Park

skating rinks to be available in the whole city.

- In Hebei Province, the government has requested each city to build one standard public skating venue with

an area of $1,830\text{ m}^2$, each county to build an indoor skating rink, and at least 200 indoor skating rinks to be available in the whole province.

Secondly, the construction of ski venues.

The Plan supports the construction of ski tracks covering an area of more than $50,000\text{ m}^2$, the improvement of supporting facilities for existing venues, the upgrading of venues and capacity expansion of snow resorts, so as to provide better facilities and services.

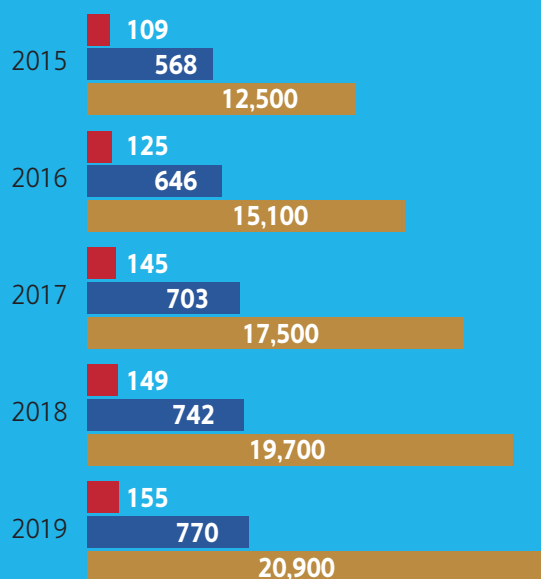
Thirdly, the construction of ice and snow parks.

To provide convenience for people to enjoy the fun of ice and snow sports, the Plan supports the building of indoor or open-air ice and snow leisure parks at public spaces.



• China World Mall Skating Rink

Number of ski resorts in operation in China
and number of visits from 2015 to 2019



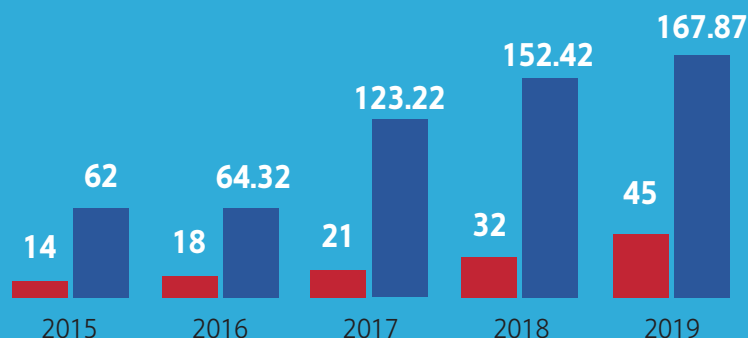
■ Number of visits (thousand)
■ Number of ski resorts
■ Number of ski resorts with cableways

Number of indoor ski fields in operation
in China from 2015 to 2019

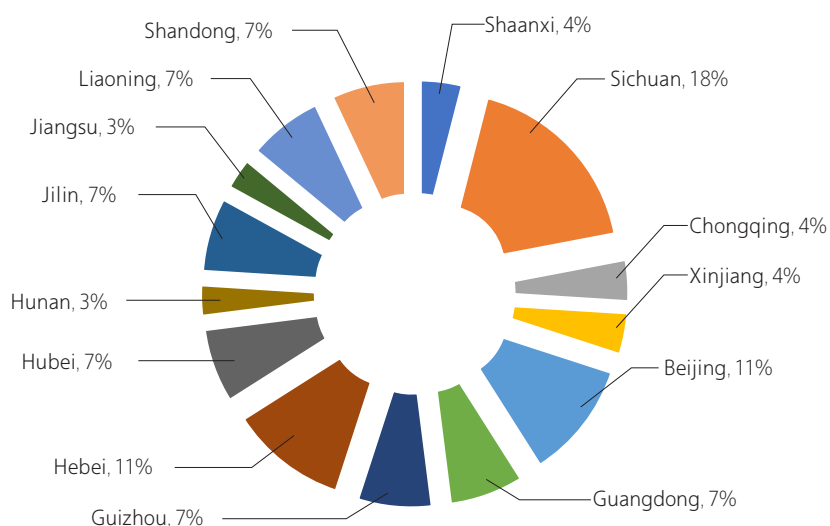


Number and total areas of dry ski slopes in China from 2015 to 2019

■ Number of dry ski slopes
■ Areas of dry ski slopes (thousand m²)



Distribution of dry ski slopes in operation in 2019



Construction of the National Ice Sports Arena for People with Impairments

Located in Shunyi District of Beijing, the National Ice Sports Arena for People with Impairments is China's first ice sports training venue dedicated to people with impairments. It will serve as the training venue for the Chinese Paralympic ice sports teams to prepare for Beijing 2022. This fully accessible venue includes arenas meeting international federations' standards, advanced equipment, and services for physical training, research and medical care, rehabilitation, meeting, etc.

The Arena covers an area of 18,000 m², with a total floor space of 31,473m². It consists of a competition and training hall for Para Ice Hockey, a training hall for Wheelchair Curling and a multi-function building.



● National Ice Sports Arena for People with Impairments

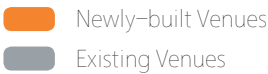


● Beijing Olympic Park

4

POST-GAMES USE OF OLYMPIC VENUES





POST-GAMES USE OF OLYMPIC VENUES

The Olympic Winter Games have made good use of existing venues and facilities. For the newly-built venues, full consideration was given to the post-Games use from the early stage of venue planning. A venue legacy plan has been developed for each of the competition venues and some non-competition venues. As the Games preparation proceeds steadily, the venue legacy plans are under constant improvement.

Beijing Zone

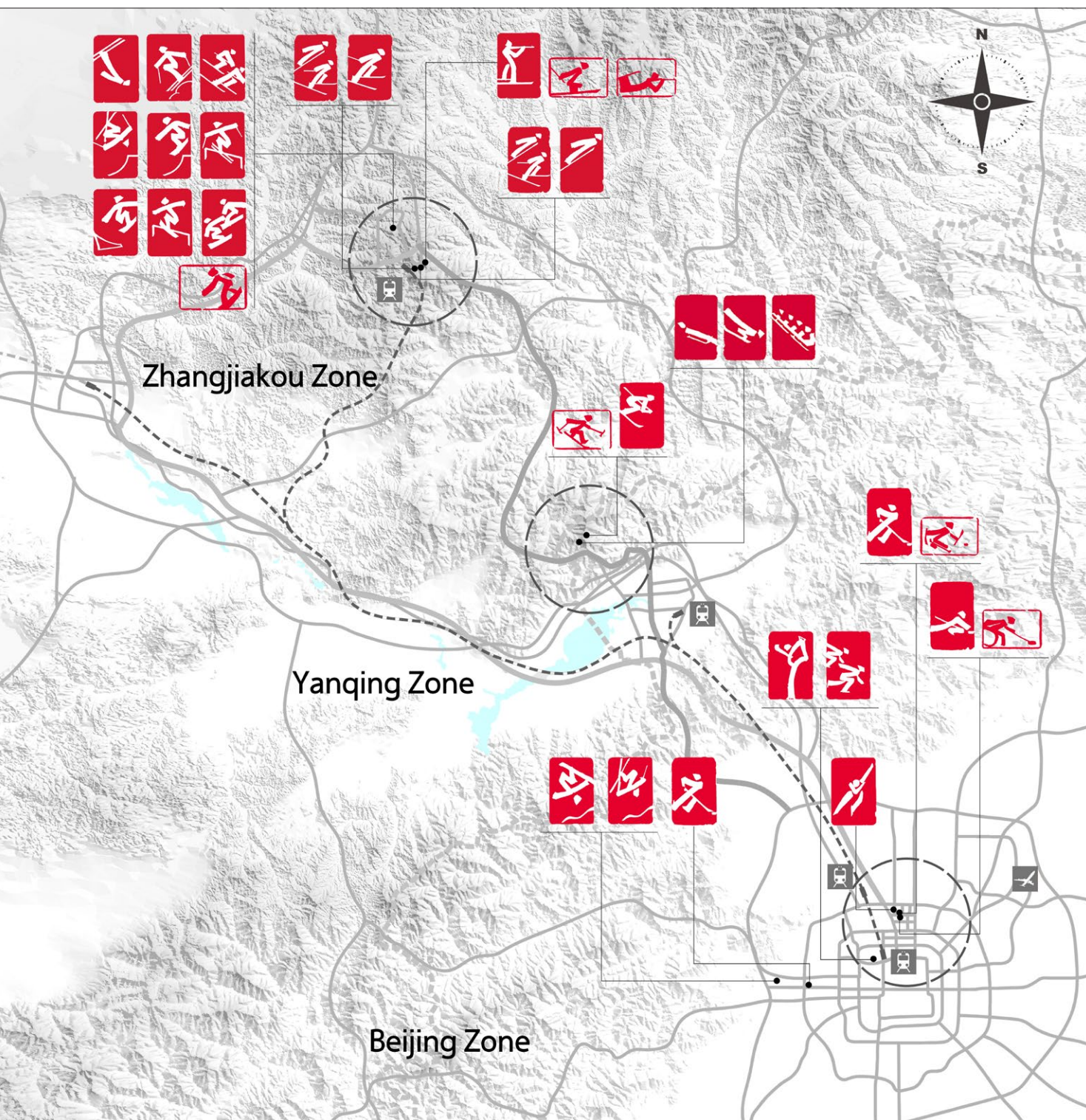


Yanqing Zone



Zhangjiakou Zone





6 Venues for both summer and winter Olympic Games

4 Ice-making with CO₂

CTS: Capital Indoor Stadium

CFT: CTS Figure Skating Training Hall

CST: CTS Short Track Speed Skating Training Hall

NAC: National Aquatics Centre

NIS: National Indoor Stadium

NST: National Stadium

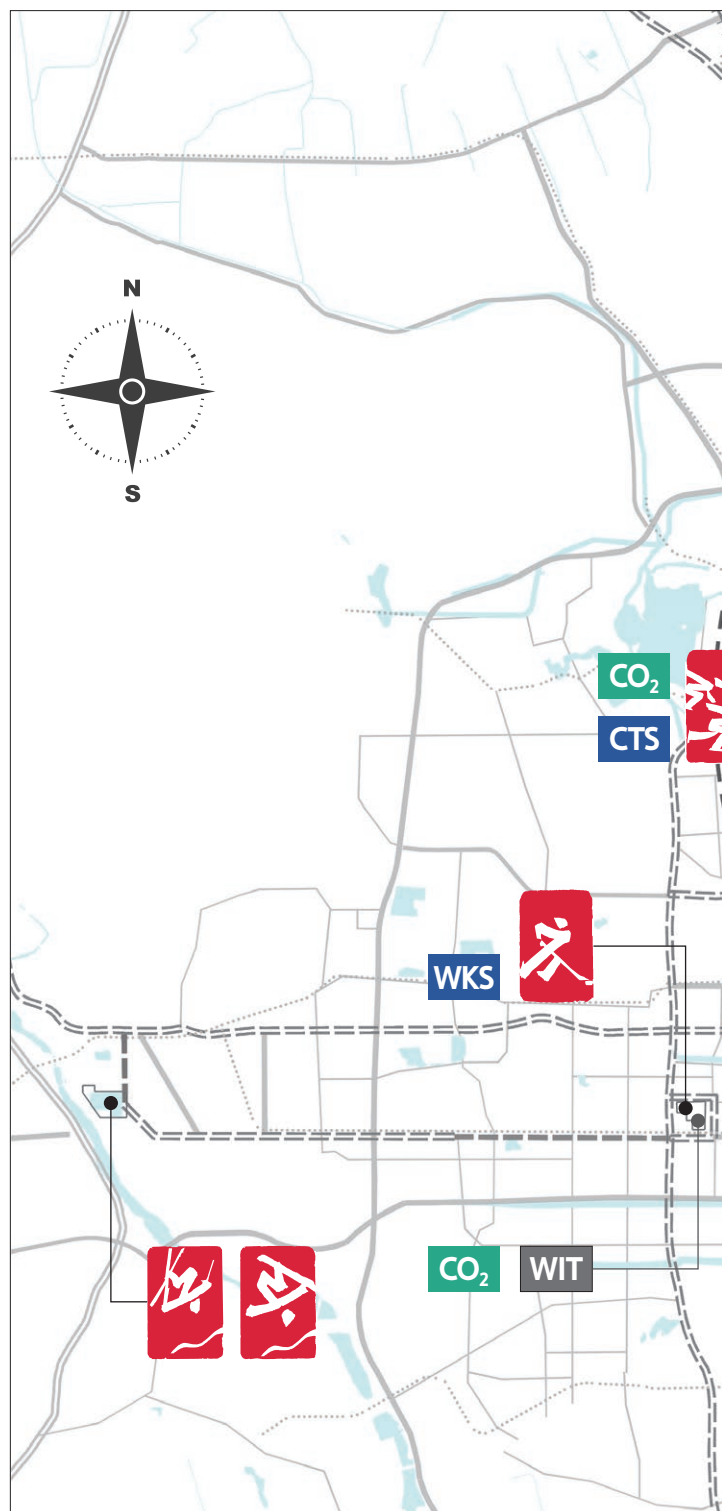
WKS: Wukesong Sports Centre

WIT: WKS Ice Hockey Training Hall

Beijing Zone

As the first city to host both summer and winter Olympic Games, Beijing has an abundance of Olympic legacies, particularly in venues and infrastructure. Beijing 2022 has maximised the use of the rich Olympic legacies of Beijing 2008. Six venues from Beijing 2008 have been renovated and upgraded to accommodate winter sports. Now, these venues not only satisfy the needs of Beijing 2022, but also serve as general sports facilities for the development of competitive sports, mass fitness and diverse commercial activities.

As a natural refrigerant, carbon dioxide will be used in four venues for Beijing 2022 Games, which helps tremendously reduce emissions.





The National Aquatics Centre

The National Aquatics Centre, known as the "Water Cube", where the Swimming, Diving and Artistic Swimming events of Beijing 2008 took place, will serve as the venue for the Curling and Wheelchair Curling events of Beijing 2022. By using the stilt-structure switching technology, the existing swimming pool can be turned into a curling venue, making it the first venue in China to feature the "water-to-ice conversion". After the Olympic Winter Games, the venue will be fit for ice sports events, swimming events and large cultural performances, achieving multi-purpose and long-term use of the venue.





The National Indoor Stadium

The National Indoor Stadium, where the Gymnastics, Trampoline, Handball and Wheelchair Basketball events of Beijing 2008 were held, will be the venue for the Ice Hockey and Para Ice Hockey events of Beijing 2022. After the Games, the ice rink of the stadium will be preserved as a permanent legacy of the Olympic Winter Games. In addition to being used for ice sports, the venue can be converted to serve different types of non-ice sporting events. This mostly "sport-oriented" venue will also stage cultural and tourism activities, organise experience activities and provide general youth training programmes.

Wukesong Sports Centre

Wukesong Sports Centre and its adjacent facility was the venue for the Basketball and Baseball events of Beijing 2008. Its basketball court will serve as the venue for the Ice Hockey events of Beijing 2022, and the baseball field, which was a temporary venue of Beijing 2008, has been dismantled and turned into a business service centre, a new urban landmark, which combines the facilities for basketball, e-sports, cultural performances, leisure, dining and business. Currently, Wukesong Sports Centre is the first sports facility in China that can cater for both ice hockey and basketball, and the switching from a venue for basketball to that for ice hockey or cultural performances takes only six hours. After the Games, with the cultural and sports industries as its main focus, Wukesong Sports Centre will continue to serve as a central stage to showcase the vitality of the city.



The National Speed Skating Oval ("the Ice Ribbon")

The National Speed Skating Oval ("the Ice Ribbon") is built on the site of the temporary venues for the Archery and Hockey events as well as the Football 7-a-side and Football 5-a-side of Beijing 2008. It is the venue for the Speed Skating competitions of Beijing 2022. The venue is designed to have a full-size ice surface of about 12,000m², which can satisfy not only the technical requirements of the five major ice sports, namely Speed Skating, Short Track Speed Skating, Figure Skating, Curling and Ice Hockey, but also the needs of local residents for fitness training after the Games. The venue will serve as an ISU (International Skating Union) Centre of Excellence¹ after the Games where ice sporting events and public sports activities will take place. It will be a multi-function ice sports centre that serves the needs for sporting events, mass fitness, culture and leisure, exhibition and social welfare.

¹ ISU will set up a centre of excellence in Beijing as part of legacy plans following the 2022 Winter Olympics in the Chinese capital. A memorandum of understanding has been signed with the China Winter Sports Administrative Centre (CWSAC) to launch the facility which will be for both speed and figure skating. It is hoped that the Centre will be used to further develop skating sports in China and across Asia.



The Capital Indoor Stadium

Built in 1968, the Capital Indoor Stadium was China's first indoor skating rink. It was the venue for the Volleyball events of Beijing 2008. The Short Track Speed Skating and Figure Skating competitions of Beijing 2022 will be staged here. In addition to serving as the daily training venue for the national team after the Games, it will stage various high-level ice sports events. The venue will be open to the public, particularly the youth, and become a public ice sports training base and a winter sports experience centre.





The Big Air Shougang

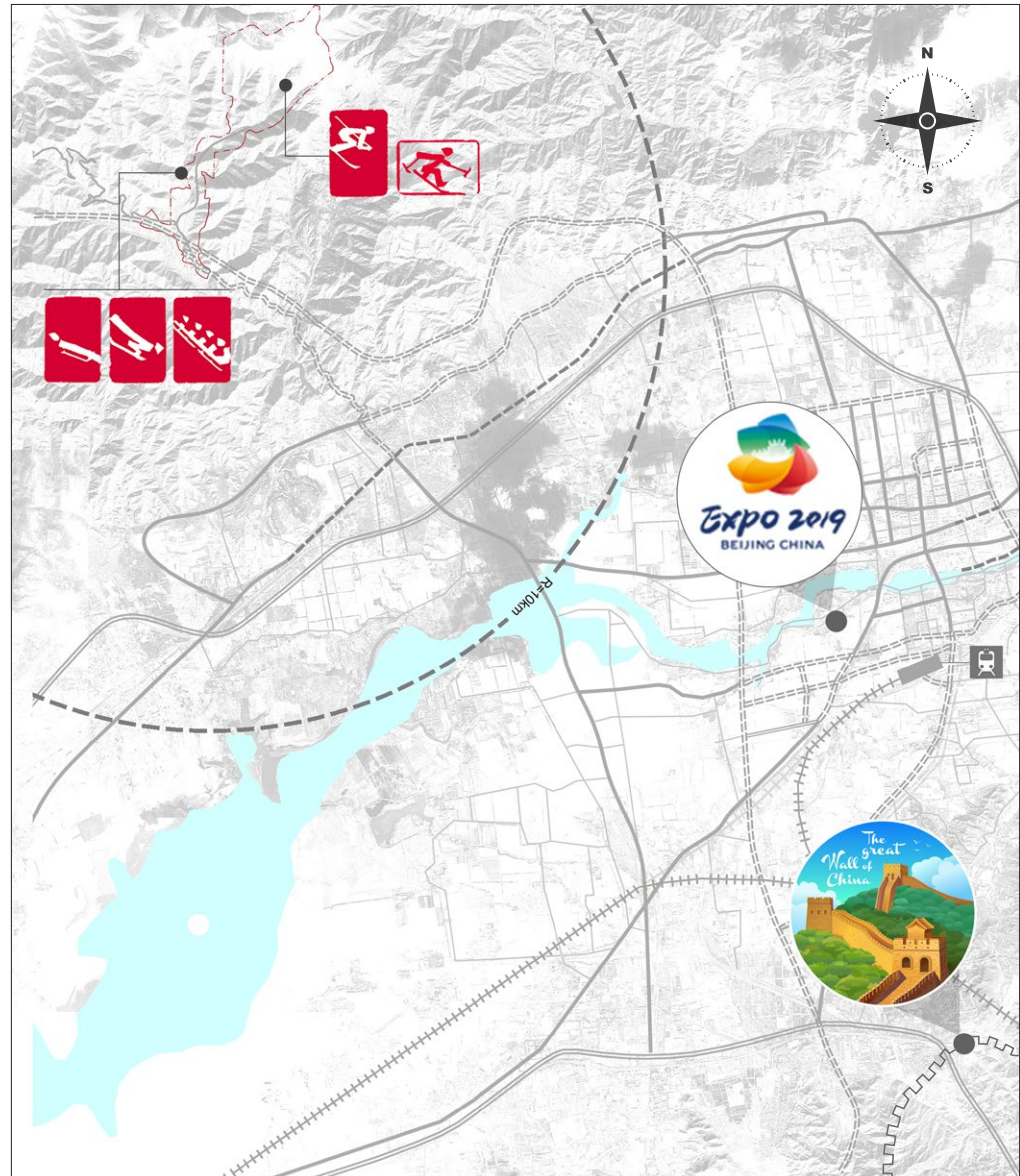
The Big Air Shougang is the first permanent Big Air venue in the world. During the Games, the Snowboard and Freestyle Skiing Big Air events will take place here. After the Games, it will serve as the training base for the Chinese national teams and youth teams as well as the venue for different national and international sports events. The venue will offer fitness-for-all and public experience programmes and stage winter sports carnivals. Apart from the activities held in winter, sports, cultural and business events will also be launched in other seasons to ensure year-round operations of the venue.

Yanqing Zone

The planning and design of Yanqing Zone of Beijing 2022 is based on the core concept of sustainability, which attaches great importance to resource and energy conservation and prioritises ecological conservation in venue construction and utilisation. Yanqing Zone has remarkable cultural, historical and natural resources, including the most popular section of the Great Wall.

After the Games, Yanqing Zone will further enhance its skiing facilities for the public and build ice and snow resorts to provide services for winter sports, leisure and tourism. In spring, summer and autumn, a variety of outdoor leisure and sport activities will be offered.

The high-speed railway and expressway connections to Yanqing Zone and the broad prospects of post-Games use of the venues will boost the development of the entire region.



R = 10 km from Yanqing Olympic Village



The National Alpine Skiing Centre

The National Alpine Skiing Centre will stage the Alpine Skiing events of Beijing 2022. After the Games, it will continue to be a sports venue for Alpine Skiing events and serve as the training venue for the National Alpine Skiing Team and other professional skiing teams. In addition to satisfying the needs of professional competitions and training, the venue will also be open to high-level amateur skiers in winter, and serve as a mountain sightseeing and outdoor sports venue for the rest of the year, so as to maximise the economic and social value of the Olympic venue.

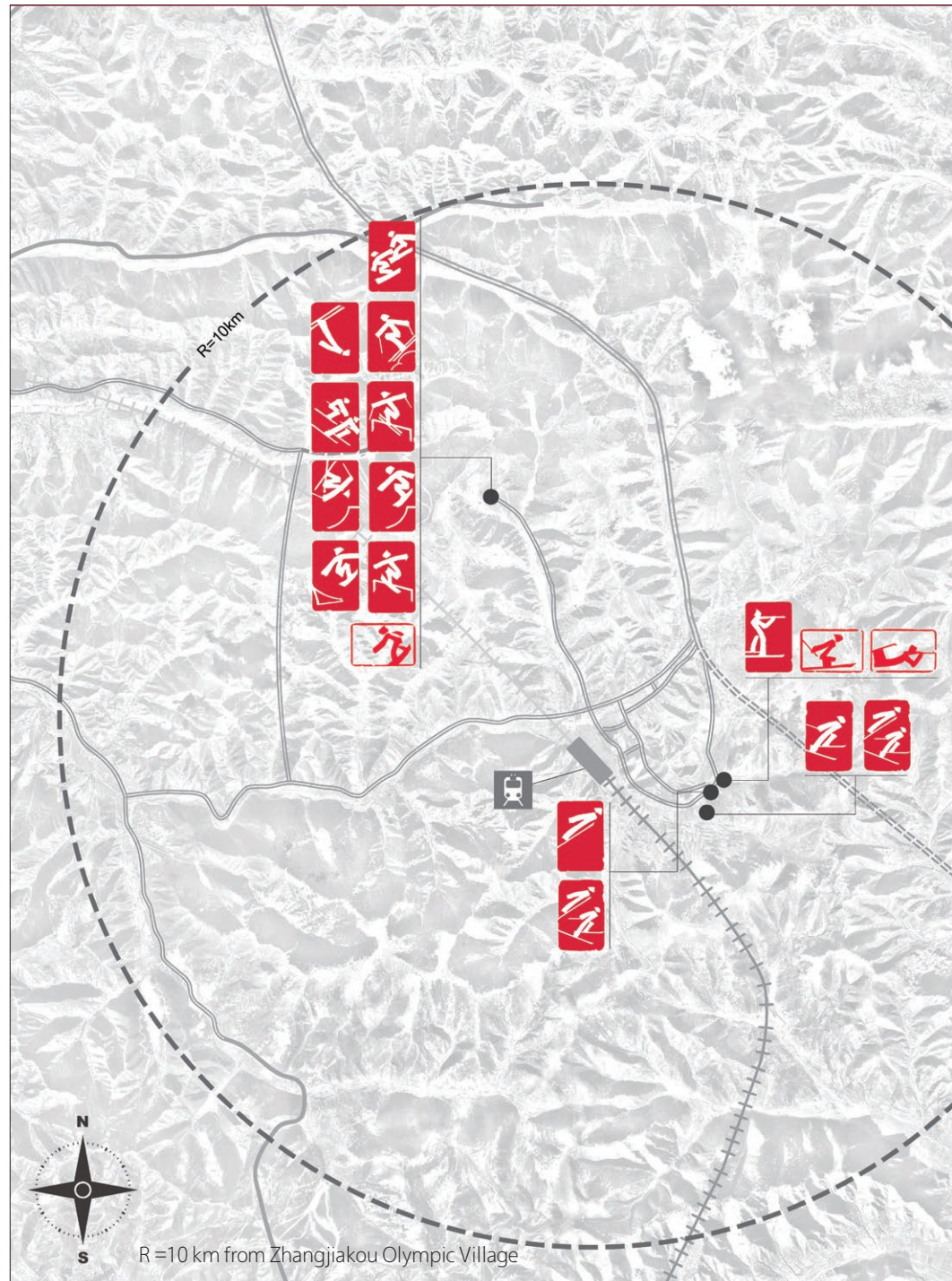
The National Sliding Centre

The National Sliding Centre, the only venue for Bobsleigh, Skeleton and Luge in China, will continue to serve as the venue for various high-level competitions after the Games and provide a professional training venue for the national team and youth. The centre has a special starting point reserved for the general public along the track, which will allow the public to experience the sliding sports after the Games, creating a multiple-purpose venue that is able to stage major sports events and cater to recreational demand.



Zhangjiakou Zone

Zhangjiakou Zone is home to many venues and facilities of the Olympic Winter Games, including the National Ski Jumping Centre, National Cross-Country Skiing Centre, National Biathlon Centre, Zhangjiakou Olympic Village and Genting Snow Park. The post-Games Zhangjiakou Zone will focus on the staging of sports events and enhance the multi-purpose utilisation of the venues. Private investment in sports industry projects is encouraged, such as setting up international skiing schools, specialised sports and leisure zones and sports training bases. Work was done to establish in the region a modern service and support system for fitness and leisure, sports competition, sports training and outdoor sports, as well as conferences and exhibitions. After the Games, the entire area of Zhangjiakou Zone is expected to become a winter entertainment centre and a popular summer-holiday resort for the general public.



The Genting Snow Park

The Genting Snow Park is a well-operated commercial ski resort. The resort has an attractive natural environment, with landscapes of snow-covered winter, cool summer breezes and well-developed facilities for winter sports and mountain holidays. With these core advantages, the Genting Snow Park will grow into a mountain-tourism resort that combines the functions of sports, leisure, conference and holiday.





The National Cross-Country Skiing Centre

The area, where the National Cross-Country Skiing Centre is located, will be converted into a mountain park after the Games. In winter, events such as ice and snow mini-theatre and snowmobile rides will be organised in the park, and in summer, the facilities in the park will be converted into a forest theatre to stage mountain concerts. It is also an ideal place for equestrian clubs and training grounds. The 3km-long ice ring is a good venue for holding cultural and sporting events such as running and cycling.

The National Ski Jumping Centre

After the Games, the ski jumping hill of the National Ski Jumping Centre will continue to be used for skiing in winter, providing services for competitions and professional training. Grass will be planted on the hill in summer for the recreational activities like grass skiing.





The National Biathlon Centre

The National Biathlon Centre will retain some of its functional rooms and tracks after the Games. These facilities will be used for the country's specific sports training projects and competitions in winter. In addition, ski training, ice and snow experience programmes and a recreational air-rifle shooting range will be available for children in winter season. In summer, it will be turned into an outdoor activity centre with cross-country cycling and a mini theatre to make it more entertaining.

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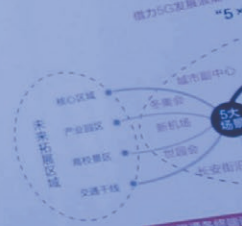
5

DEVELOPMENT OF WINTER SPORTS INDUSTRY IN CHINA



5G+8K 智慧冬奥

5G+8K 智慧冬奥



5G+8K 智慧冬奥

5G+8K 智慧冬奥



● The high-speed and large-capacity detachable cableway system installed in a scenic area in Urumqi

DEVELOPMENT OF WINTER SPORTS INDUSTRY IN CHINA

As Beijing 2022 approaches, winter sports are becoming a part of life for more and more Chinese, and the winter sports industry is showing a bright prospect. Over the last five years, the industry has undergone structural reforms and seen expedited improvement of the policy system supporting the industrial development. Areas including

technology, human resource and standards, which are fundamental to the industrial development, are being consolidated. Emphasis has also been placed on developing renowned enterprises and providing support for related enterprises to grow and expand. These efforts have brought about the rapid development of China's winter sports industry.

Ice and snow fitness and leisure industry

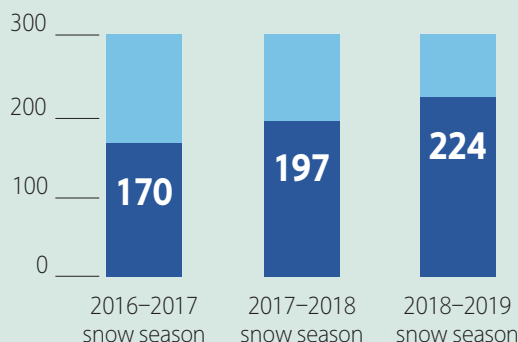
Investment in the industry amounted to around 610 billion yuan between 2018 and 2019. In the snow season of this period, the number of tourists reached 224 million and an income of about 386 billion yuan was generated, representing a year-on-year growth of 13.7% and 17.1% respectively. The ice and snow tourism consumption per capita was 1,734 yuan in China between 2018 and 2019, equal to 1.87 times that of domestic tourism and showing the impressive capacity of ice and snow tourism in promoting the domestic demand². The above figures show that China's ice and snow tourism has entered a period of rapid development. Along with the growth of ice and snow tourism, a large number of "ice and snow resorts" have emerged in China, which combine different forms of business such as sports, holiday, shops, leisure and entertainment. A total of 26 "ice and snow resorts" were built in China in 2017, and the number reached about 40 in 2019.

¹ Winter Tourism Research Report of Jilin Province 2017-2018

² 2020 China Ice and Snow Tourism Development Forum.

Number of winter tourists in China 2016 – 2019

Unit: million



Winter-tourism revenue in China 2016 – 2019

Unit: billion yuan



● Tourists at a ski resort in Zhangjiakou

Ice and snow equipment manufacturing

The innovation capacity of China's ice and snow equipment manufacturing continues to enhance. The "High-tech-based Olympics Research Plan" is under implementation, according to which, enterprises are encouraged to step up their research efforts in the development and innovation of ice and snow equipment. Positive progress and results have been achieved following increased investment in scientific research and improved innovation capacity.

For instance, through concerted efforts, the core technology of high-speed and large-capacity detachable cableway was successfully developed, which was granted 9 patents. This scientific research achievement has been successfully commercialised and a demonstrative project set up



● World Winter Sports (Beijing) Expo 2018

in Zhangjiakou Zone. As a result, this home-produced cableway has accounted for 50% of the newly increased products of the same type in the Chinese market.

Another example is the technological research on the integration of snow making and snow storage at the temperature above 0°C. The research has overcome the difficulties in snowmaking in high temperature environments. The model machine is able to produce 6 m³ of snow per hour, and the common weak point of short shooting distance for snowmaking machines is removed. The "rotating prop for tower snowmaker", the first in China, was granted 8 patents¹ and greatly upgraded the quality and efficiency of snowmaking.

The building of ice and snow equipment industrial parks is progressing steadily. By 2019, nearly 20 ice and snow equipment industrial parks were under construction or planned in the whole country, nine of which are located in Hebei Province². In this regard, Zhangjiakou uses the existing resources of machinery industry to actively attract renowned ice and snow equipment R&D and production enterprises from both home and abroad. As a result, the number of contracted projects in Zhangjiakou increased: from 8 in 2017, to 21 in 2018

and 32 in 2019³, the coordinated production capacity of the industry chain continues to strengthen and the supporting facilities continue to improve at these parks, which has created a sound environment

for further development of the equipment manufacturing industry.

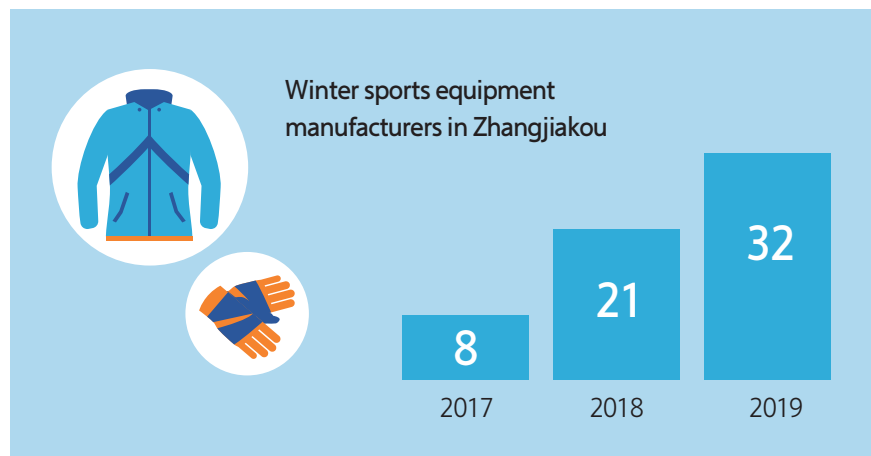
1 Tap into Winter Economy and Move on to High-End Industries. <http://hbrb.hebnews.cn/pc/paper/c/201905/08/c132790.html>. (Hebei News)

2 CCID Consulting.

3 Progress Report of Hebei Provincial Government 2020.



● World Winter Sports (Beijing) Expo 2018



Winter sports events

The calendar of high-level winter sports competitions continues to expand as the result of the strengthened collaboration with international organisations and the well-planned introduction of top international winter sports events into China. In recent years, a number of renowned international winter sports events have taken place in Beijing and Hebei Province, including:

WCF Curling World Cup Grand Final

IIHF Ice Hockey Women's World Championship Division I Group B events

FIS Cross-Country Skiing China City Sprint Beijing

Air+Style Beijing FIS Big Air World Cup

Freestyle Ski Moguls Championship

Freeski Halfpipe Championship

The market of high-level sports events is becoming increasingly active in China.

Winter sports competitions such as Alpine Skiing, Ski Jumping, Speed Skating, Figure Skating, Ice Hockey, Curling, Bobsleigh, Skeleton and Luge are being vigorously promoted in the country in order to advance the development of professional winter sports events in China. Furthermore, professional Ice Hockey League competitions are held, commercial winter-sports performances



● "Olympic City Cup" Beijing World Minor Hockey Invitational Tournament 2019

encouraged and popular ice and snow events created for the public. Private sports organisations are guided and encouraged to stage amateur winter sports events.

Youth winter sports competitions are gradually flourishing. Among these sports events, the Youth Ice Hockey Club League Matches involved 2,613 athletes from 199 teams of 31 clubs in 2019. Primary-School Ice Hockey League Matches of Beijing, Youth Ice Hockey Club League Matches, Youth Skiing Competitions, Youth Figure Skating Competitions and School Winter Sports Meets have become the "five highlights" in the youth winter sports family of Beijing. This is not only driving the development of youth winter sports, but also building up the potential consumption

demand for winter sports industry in the future.

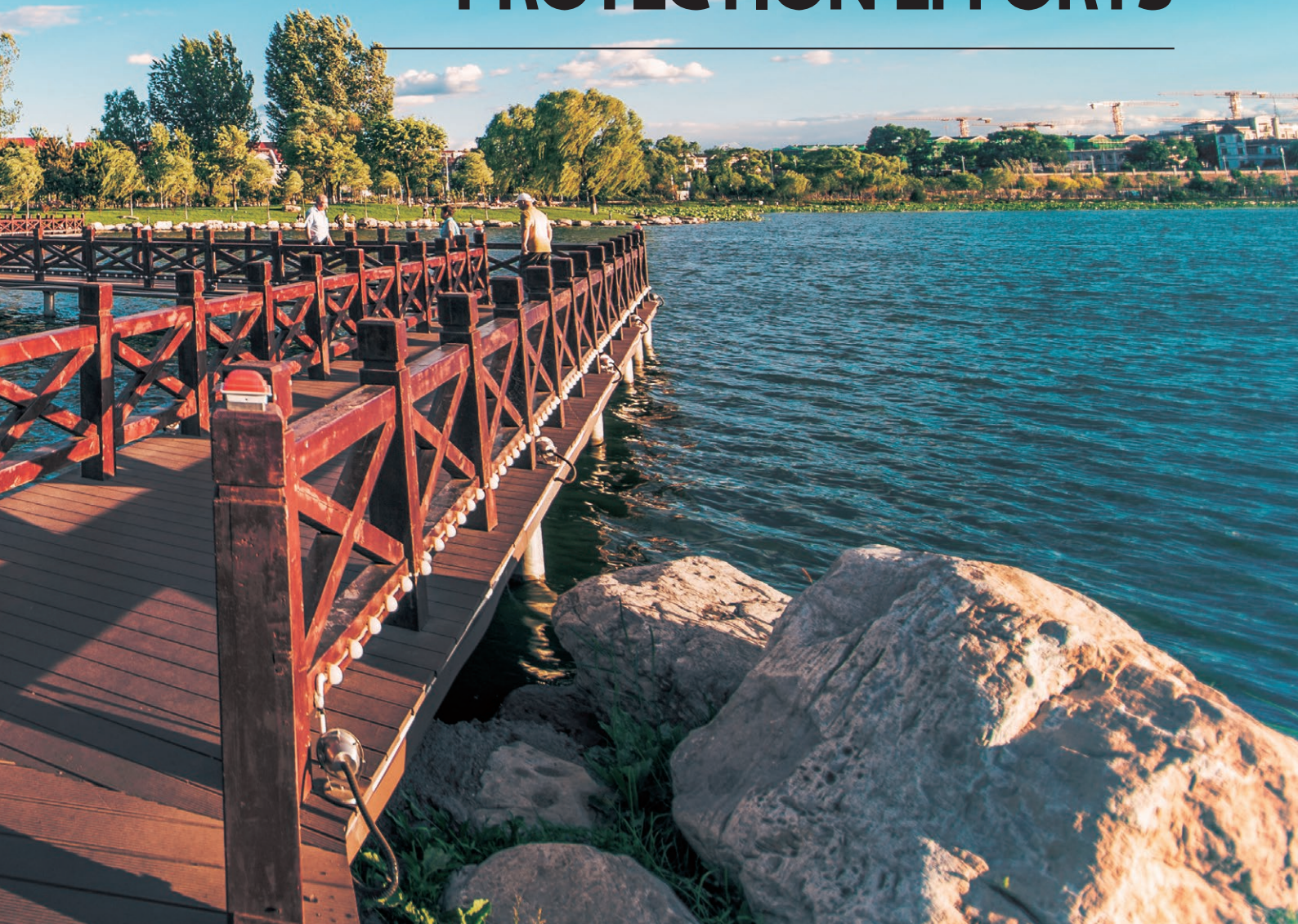
The market of winter sports competitions and performances is increasingly diversified. In 2019, the Winter Sports Administrative Centre of the General Administration of Sport of China, Sina Sports and the Chinese Ski Association co-staged sports events in an effort to create the largest amateur ski event in Asia. The Chinese Figure Skating Interclub League Competitions have taken place for two consecutive years since 2018, for the purpose of meeting the market demand and the latest public interest of popularising figure skating in the southern part of China. The market of winter sports competitions and performances is developing in a diversified and vigorous manner.



● Yanqing Xiadu Park

6

ENVIRONMENTAL PROTECTION EFFORTS



ENVIRONMENTAL PROTECTION EFFORTS

The preparations for Beijing 2022 have increased the ecological environment protection efforts of the host city and facilitated the implementation of a series of projects and action plans in this regard. Efforts to control air pollution, desertification and flood have been enhanced, and the work of venue construction has been associated with ecological restoration and environmental improvement efforts. Consequently, the environmental quality of Beijing–Zhangjiakou Region has seen an improvement, giving visibility to an example of integrated development of sport infrastructure and natural environment.

The air quality in Beijing and Zhangjiakou has improved substantially. The average level of particulate matter (PM 2.5) in the air decreased by 47.9% between 2015 and 2019 in Beijing, and by 26% in the same period in Zhangjiakou. In the meantime, the forest coverage of Beijing and Zhangjiakou continued to increase, reaching 44% and 50% respectively in 2019; illustrating

a 2.4% increase and a 13% rise compared to 2015 figures. The water environment of both

cities has also noticeably improved. Sewage–treatment rates reached 94.5% in Beijing in 2019 showing a 6.6 percentage–point increase compared to 2015. The overall water quality in Zhangjiakou (for the monitored sections) showed a 100% compliance rate with the Chinese Ministry of Ecology and Environment quality

By the end of 2019

PM2.5



47.9% decrease
compared to
2015 in Beijing



26% decrease
compared to 2015
in Zhangjiakou

Forest coverage

44%



Beijing

50%



Zhangjiakou

Water

100%

100% compliance with
Chinese national quality
standards for water
quality in major river
basins

87.5%

87.5% compliance
with Chinese
national quality
standards for surface
water quality

94.5%

94.5%: Sewage–treatment in Beijing, 6.6% increase
compared to 2015



● Shougang office of Beijing 2022 Headquarters

standards in 2019, while surface water compliance rate is as high as 87.5%.¹

The environmental quality of Yanqing and Zhangjiakou Zones and surrounding areas is continuously improving.

Improvement of air quality in Beijing and Zhangjiakou

The air quality in the whole area of Beijing improved significantly during the period from 2015 to 2019. Although it has yet to reach

the standards as stipulated in *WHO Air Quality Guidelines*, it has taken a giant step towards achieving them.

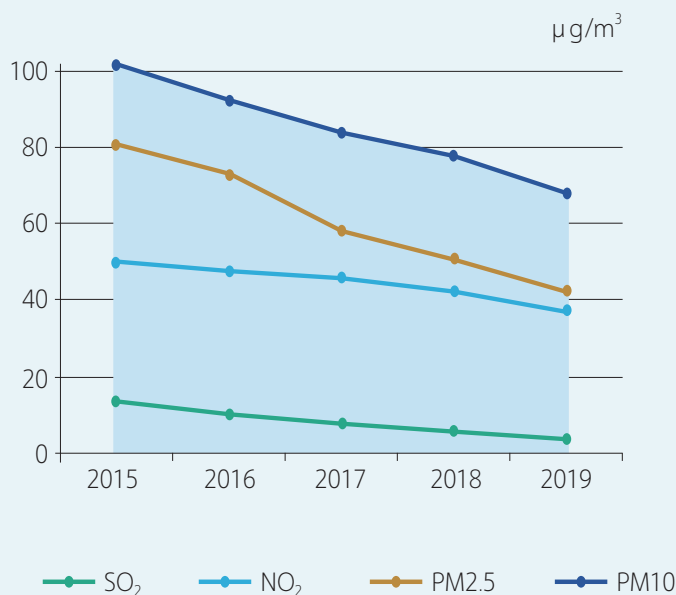
During the period from 2015 to 2019, Zhangjiakou achieved its objective for the first phase of its blue-sky protection campaign as it reached the air-quality target for the Beijing 2022 Games two years ahead of schedule. Although some indices have reached the air-quality standards set out by WHO after continuous efforts, there remain indices that may still be improved.



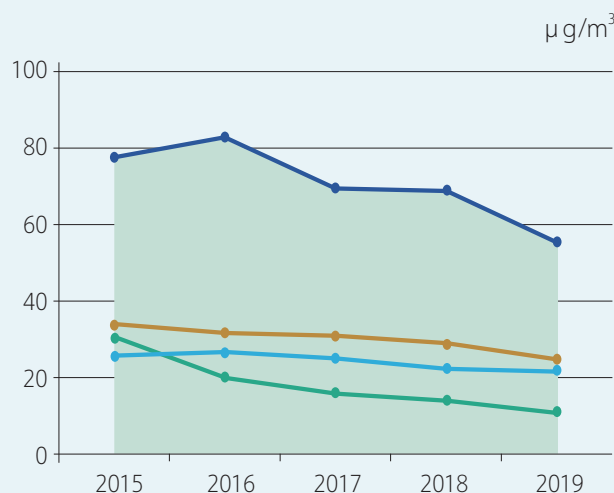
● New-energy vehicle

¹ The monitoring method is based on the *Environmental Quality Standards for Surface Water* (GB3838-2002) as published by the Ministry of Ecology and Environment. Samples are regularly taken from selected sections of surface water to monitor its pH value, chemical oxygen demand, biochemical oxygen demand and pollutants such as ammonia-nitrogen and heavy metals. The water quality is considered as satisfactory when the results comply with the corresponding standards for functional zones of water environment.

Changes of annual average concentration values of main air pollutants in Beijing



Changes of annual average concentration values of main air pollutants in Zhangjiakou



The governments of Beijing, Tianjin, Hebei and their neighbouring areas have jointly established a steering committee for air pollution control to improve the cooperation mechanism beyond administrative boundaries and strengthen the regional coordination in air-pollution prevention and control. Beijing and Zhangjiakou have adopted many measures to prevent air pollution and improve the air quality. The measures include:

Developing green transport systems.

It is one of China's national strategies. Beijing 2022 has expedited the promotion and utilisation of new-energy¹ vehicles in Beijing and Zhangjiakou. More vehicles that do not comply with national or local emission standard are scrapped and dismantled². The inventory of new-energy passenger vehicles³ in Beijing increased from 2,211 in 2013 to 308,900 by the end of 2019.

Zhangjiakou has put 49 fuel-cell buses into operation.

- 1 New-energy vehicles here refer to battery electric vehicles, plug-in hybrid electric vehicles, fuel-cell vehicles and other alternative-energy vehicles.
- 2 Vehicles that are scrapped and dismantled refer to those vehicles that are forced to stop service by the government because they have expired the stipulated service life or been irreparably damaged. The dismantling of vehicles is done in scrapyards, and 70% of the ferrous metal is recycled.
- 3 The passenger vehicles here refer to all the vehicles for passenger transport, including private vehicles, buses and taxis.



● Landscape in Chongli, Zhangjiakou

Using low-carbon and/or high-efficiency energy for heating.

Specifically speaking, the use of lower-carbon heating sources such as natural gas, electricity, geothermal energy, biomass, solar energy and industrial waste heat, is accelerated and coal-burning boilers are eliminated or renovated¹ in the Beijing-Tianjin-Hebei Region; efforts are made to raise energy efficiency and expedite the development of clean and new energy. The execution of these measures will also help China achieve its carbon-neutrality target

by 2060.

Emphasising pollution control in the Beijing-Tianjin-Hebei Region to drastically reduce pollutant discharge.

The specific work includes the efforts to control the pollution by diesel trucks, emissions from industrial furnaces and other industrial pollution.

Enhancing environment-monitoring system in the Beijing-Tianjin-Hebei Region and tightening law enforcement and supervision. To that

end, the environment monitoring and control network is improved and technological support reinforced. To date, a general environment-monitoring network has been in place in this region; forecast and early warning for regional air pollution are provided based on data integration, in addition to the evaluation of the control technologies for various regional pollution sources.

¹ "Coal-burning boilers are eliminated or renovated" refers to the work to put small boilers out of use and to make super-low emission renovation to large boilers.

All the measures described above are based on governmental plans. The State Council and the municipalities of Beijing and Zhangjiakou have formulated and enforced:

- *Three-Year Action Plan for Clean Air (2018 – 2020)*;
- *Clean-Air Action Plan (2013–2017)*;
- *Three-Year Action Plan for Clean Air (2018 – 2020)*; and
- *Execution Plan for Air-Quality Improvement Project of Zhangjiakou (Blue-Sky Action Plan 2016 – 2022)*.

Desertification control and afforestation in Beijing and Zhangjiakou

The staging of Beijing 2022 has reinforced the collaboration and

coordination between Beijing, Tianjin and Hebei in forestry and ecological development. Joint efforts have been made to conduct the major afforestation and ecological restoration projects in Beijing and Zhangjiakou Zones, Yanshan and Taihang Mountains, the areas of national reserve forest areas, and the Beijing–Tianjin–Hebei Region as a whole. The major projects include:

- Afforestation in the functional zones of water and soil conservation¹ and water-source conservation² in the Beijing–Tianjin–Hebei Region;
- Ecological restoration of the Yongding River Basin;
- Sandstorm-source control in the Beijing–Tianjin areas;
- Reforestation of farmlands³;

- Afforestation in North, Northwest and Northeast China;
- Afforestation in Yanshan and Taihang Mountains; and
- Afforestation in plains, urban and rural areas of the Region.

1 The functional zones of water and soil conservation refer to areas that suffer from serious soil erosion and that require environmental control and protection.

2 Water-source conservation zones are specific areas designated for purposes of preserving, retaining and supplementing water.

3 Farmers are requested to quit farming and their farmlands are reforested. Following the reforestation of farmlands, farmers receive a certain financial compensation and production support. They are permitted to grow short-straw crops such as beans and encouraged to develop under-forest economy. Private forest forms and diversified production are encouraged. After the reforestation, the local government provides various financial support for the farmers to adjust their agricultural production or develop industries in order to increase their income and maintain the reforestation.



• A functional zone of water-source conservation in Yanqing

Continuous improvement of forestry in the Beijing-Tianjin-Hebei Region.

Region. By 2019, forest coverage in this region reached 7,600,000 hectares, the area of wetlands exceeded 1,260,000 hectares, and desertification control and prevention area reached 1,070,000 hectares. A land greening campaign has been carried out extensively across the Region. As a result, 1,330,000 hectares of afforestation were completed and the regional forest coverage reached over 35% during the period from 2016 to 2019. The quality of forests has also been improved, with 1,000,000 hectares of middle-age and young forest taken care of, 130,000 hectares of declining forests restored and forest stock volume increased from 126 million cubic metres to 171 million cubic metres. The construction of a national park system in the areas around the capital is under way, which includes three national natural reserves, 10 national forest parks and

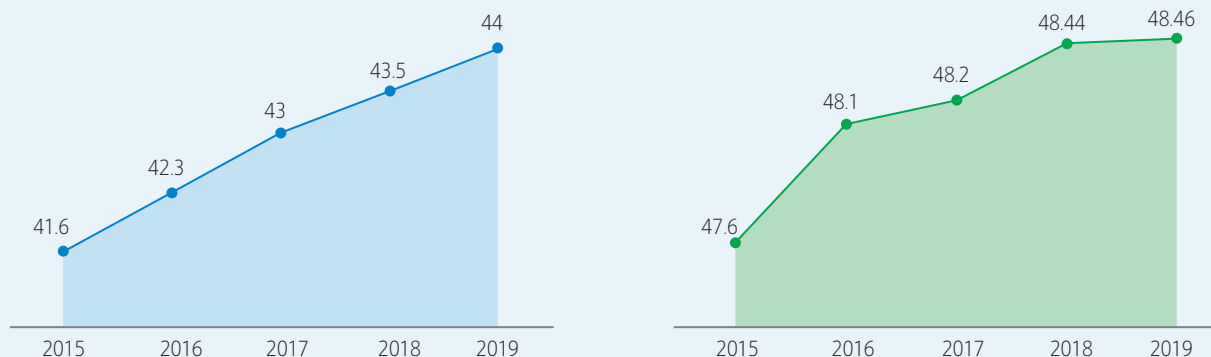
12 national wetland parks.

The reforestation and forest conservation areas in Beijing have increased significantly since 2015. The reforestation area increased by 70,000 hectares in 2019 compared to 2015 figures and the forest coverage reached 44% in 2019, a 2.4% increase compared to 2015.

Zhangjiakou is located in northwest Hebei Province and the transitional area between the Inner Mongolia Plateau and the Haihe Plain. It is a major area of water-source conservation, sand-dune stabilisation and windbreak for Beijing. The staging of Beijing 2022 has placed higher demands on the ecology and environment of this area. During his visit to Zhangjiakou in January 2017, Chinese President Xi Jinping requested the city to promote local development

through the preparations for Beijing 2022, strengthen its ecological development and build a water-source conservation and ecological and environmental supporting area for the capital. So far, Zhangjiakou has completed 1,430,000 hectares of the Beijing-Tianjin sandstorm-source control project. In 2018, the construction of 60,000 hectares of water-source conservation functional zones for the Beijing-Tianjin-Hebei Region was completed in the areas of Zhangjiakou and Chengde. In 2019, 50,000 hectares of reforestation were completed in Zhangjiakou. By the end of 2019, the greening area in Zhangjiakou reached 1,840,000 hectares, an increase of 32,313 hectares compared to 2015, and the greening rate of the city reached 50%, which is 13 percentage points higher than the 2015 figure.

Forest coverage (Left) and urban greening rate (Right) of Beijing (2015 – 2019)



Upgrading the joint conservation of forestry resources in the Beijing–Tianjin–Hebei Region.

The staging of Beijing 2022 is a driving force to expedite the coordinated environmental development in Beijing, Tianjin and Hebei. The National Forestry and Grassland Administration and local governments of the three places have compiled and implemented the *Framework Agreement on Jointly Efforts in Making Breakthroughs in the Coordinated Development of Forestry and Ecology in the Beijing–Tianjin–Hebei Region*, which is intended to break through the administrative boundaries of these areas, and strengthen collaboration among the local governments. Consequently, tough issues that previously could not be solved independently by one of the three places have also been successfully tackled, for instance, defining the baseline for forestry ecological conservation in the region, tightening up on the supervision and control of forestry resources, and enhancing the conservation and utilisation of forestry resources. To elevate the development, management and protection of natural reserves, wetlands, forest parks and scenic areas, a regional forest park system across Beijing, Tianjin and Hebei was established. Efforts in wetland conservation and restoration have intensified in the Beijing–Tianjin–Hebei Region, and mechanisms for coordinated



● A forest in Yanqing

wetland conservation and ecological compensation are being explored.

All the actions described above are based on governmental plans. The National Forestry and Grassland Administration, Beijing and Tianjin Municipalities and Hebei Province have jointly formulated and released the following plans:

- *Plan for the Co-development of Forestry Ecology in the Beijing–Tianjin–Hebei Region (2016 – 2020)*;
- *Framework Agreement for Promoting the Pioneering and Coordinated Development of Forestry Ecology in the Beijing–Tianjin–Hebei Region*;
- *Plan for Environmental Protection*

and Ecological Development of Beijing in the Period of the 13th Five-Year Plan;

- *Measures for Encouraging Reforestation in Zhangjiakou*; and
- *Plan for Building a Green Zhangjiakou (2016 – 2022)*.

Constant improvement of water quality in Beijing and Zhangjiakou

Continuous improvement of surface water quality. The quality of river water and surface water environment of Beijing is improving every year. The water quality of lakes and reservoirs is better and up to the national standards¹ for water environment

functional zones. The water quality of the drinking water sources for the city and districts is all up to or better than the national standards. The sewage-treatment capacity of the city has increased. Sewage-treatment rate has risen from 87.9% in 2015 to 94.5% in 2019, and that of the six urban districts reached 100%.

The water quality of major river basins in Zhangjiakou has a 100% compliance rate in 2019, and the surface water with Category I-III (good) qualities² account for 87.5%

Coordinated control of river basins.

Beijing, Tianjin and Hebei have signed and implemented a series of collaborative agreements to improve the water environment of the river basins by executing joint and coordinated control. Governments in Beijing and Hebei have established a lateral ecological protection compensation mechanism for the water-source conservation area of Chaobai River Basin in the upstream of Miyun Reservoir, and carried out an early-stage study on such ecological protection compensation mechanism for the upstream of Guanting Reservoir. Beijing, Tianjin and Hebei have also



● Yeya Lake, Yanqing

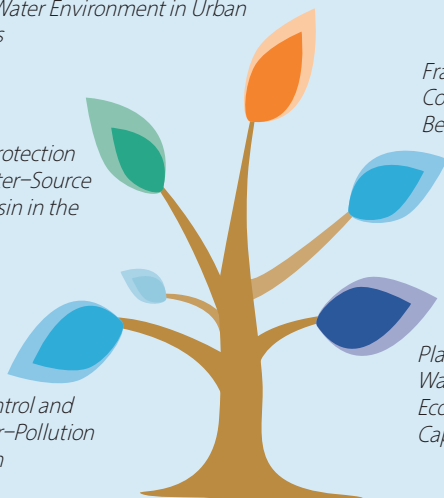


1 The standards refer to the *Environmental Quality Standards for Surface Water* (GB3838-2002) as published by the Ministry of Ecology and Environment.
2 Good-quality waters for which the quality has reached Categories I to III according to the *Environmental Quality Standards for Surface Water* (GB3838-2002).

*Three-Year Action Plan for Accelerating
the Control of Water Environment in Urban
and Rural Areas*

*Agreement on the Lateral Ecological Protection
Compensation Mechanism for the Water-Source
Conservation Area of Chaobai River Basin in the
Upstream of Miyun Reservoir*

*Collaborative Agreement on Coordinated Control and
Prevention Mechanism for Unexpected Water-Pollution
Incidents in the Beijing-Tianjin-Hebei Region*



*Framework Agreement on the Pioneering
Cooperation in Environmental Protection in the
Beijing-Tianjin-Hebei Region*

*Plan of Zhangjiakou for the Construction of
Water-Source Conservation Functional Zones and
Ecological Conservation Supporting Areas for the
Capital (2019 – 2035)*

established a mechanism for the law enforcement of environmental protection and emergency response and released the *Contingency Plan for Unexpected Water-Pollution Incidents in Key Sections of River Basins in the Beijing-Tianjin-Hebei Region*, in order to carry out the joint supervision and examination of water pollution prevention and control, as well as the coordinated law enforcement operations by the fishery administration.

Promoting domestic sewage treatment in rural areas of Beijing.

In compliance with the principles of combining pollution control with resource utilisation and taking both engineering and ecological measures, the efforts in domestic sewage



● Yanchao Bridge on the Chaobai River in Tongzhou District of Beijing

treatment are focused particularly on villages around water sources, and densely populated villages. Sewage collecting, transport and treatment processes have been adopted to address the treatment of domestic

sewage in less-populated villages.

Improving the water sources

conservation in Zhangjiakou. To enhance the overall water source conservation capacity of the eco-

system, small watersheds have been cleaned and the network of surface water reservoirs improved. Zhangjiakou has implemented the national water saving project to play a part in the drive of building a water-saving society. Actions have been taken to control excessive groundwater extraction and reduce the water for irrigation. In order to achieve effective ecological water replenishment, water is diverted from multiple water sources, rainwater is used as a resource, and water recycling is promoted.

Environmental protection at the competition zones

To effectively monitor and control the impact of venue construction and operations on the environment, Beijing 2022 worked with relevant national authorities to conduct a comprehensive investigation of the forests and ecological systems in Yanqing and Zhangjiakou Zones, as well as an assessment of the environmental impacts of the construction related to the Games. *Matrix Tables of Responsibilities for Environmental-Protection Measures* have been developed by Yanqing and Zhangjiakou, which respectively contain 54 and 44 protective measures for flora and fauna, soils, water resources, atmospheric environment and solid waste. These measures are further categorized under four subjects,



● Longqing Gorge in Yanqing of Beijing

namely avoidance (prevention), mitigation (management), restoration (remedy) and compensation. The tables also define the responsible parties and timelines to ensure the strict fulfilment of responsibilities and high-standard protection of the ecological environment of competition zones. The execution of the above-stated ecological protection measures is reducing the impact of venue construction and operations on the surrounding ecological environment and the biodiversity.

The local governments at Yanqing and Zhangjiakou Competition Zones have respectively organised

professional third parties to conduct evaluations and compile EIA reports on the competition-zone planning in 2017. To complete the EIA work, the reports were submitted to local environmental authorities for review and comments. Currently, the professional third parties are involved in the follow-up work on the environmental impact assessment of the competition zones and the final compilation of the reports.

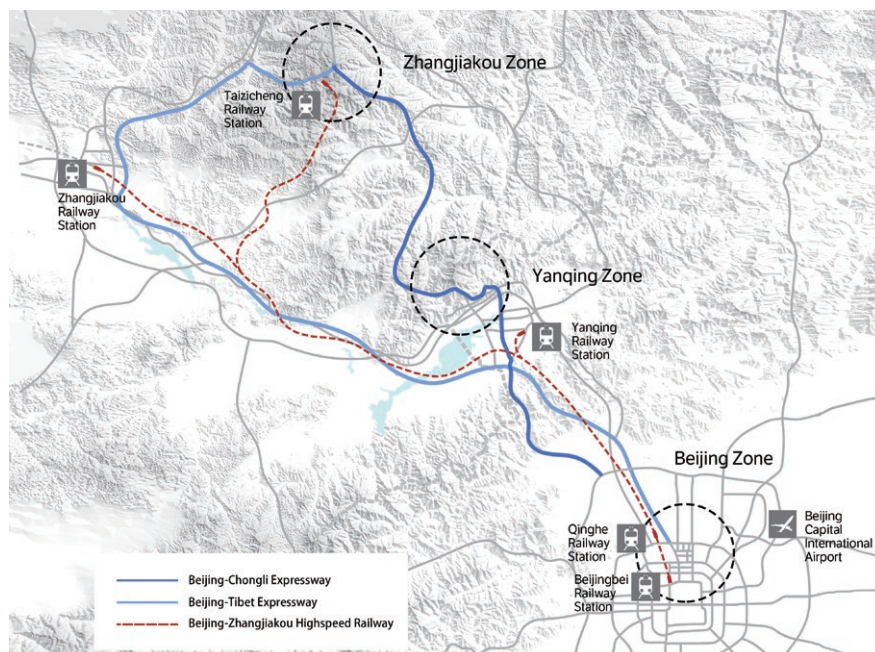


● Beijing Xizhimen Overpass

An aerial, long-exposure photograph of a complex multi-level highway interchange at night. The image shows multiple levels of overpasses and ramps, with light trails from cars creating vibrant streaks of red and white. The surrounding urban landscape is visible in the background, with city lights and buildings under a dark, cloudy sky. The overall scene conveys a sense of constant movement and modern infrastructure.

7

IMPROVING TRANSPORT FACILITIES AND BUILDING THREE- DIMENSIONAL TRANSPORT NETWORK



IMPROVING TRANSPORT FACILITIES AND BUILDING THREE-DIMENSIONAL TRANSPORT NETWORK

The Beijing-Zhangjiakou High-Speed Railway and the Beijing-Chongli Expressway are in operation. The completion of many major transport lines and passenger-transport hubs in and around the competition zones has not only satisfied the needs of the Games, but also provided powerful support to the long-term sustainable development of the region after the Games.

Construction of Beijing-Zhangjiakou High-Speed Railway

The preparation for Beijing 2022 has boosted the construction of the Beijing-Zhangjiakou High-Speed Railway. According to China's *Medium- and Long-Term Railway Network Plan*, the high-speed railway is a major component of the Beijing-Lanzhou Railway Line. The then

Ministry of Railways conducted a pre-feasibility study on the construction of the high-speed railway in December 2008, and construction began in 2014. As a major transport facility, together with the Zhangjiakou-Hohhot High-Speed Railway and the Zhangjiakou-Datong High-Speed Railway, it is of great significance for speeding up the construction of railway lines connecting Beijing with Northwest China, western Inner Mongolia and northern Shanxi. It plays a pivotal role in promoting the communication among the people and facilitating the coordinated development of these regions.

Enhancing the overall transport capacity of the Games. The Beijing-Zhangjiakou High-Speed Railway was completed and put into operation on December 30, 2019. Now, from Qinghe Station in Beijing, it takes 20 minutes to travel to Yanqing Station and 50 minutes to Taizicheng Station in Zhangjiakou. The greatly reduced travel time has benefited the Games preparations. During the Games, the Beijing-Zhangjiakou High-Speed Railway will provide fast and convenient Games-time transport services for the Olympic family, reporters and spectators, while easing traffic pressure, reducing Games costs and decreasing environmental pollution.

Boosting the development of multiple industries in Zhangjiakou and Yanqing areas. The launch of the Beijing-Zhangjiakou High-Speed Railway

has made Zhangjiakou accessible within one hour from the capital and connected it to a market of over 20 million people. Now the residents of Beijing have easy access to winter

sports, the Great Wall and grasslands, which will in return greatly promote the development of ice and snow, cultural and tourism industries in Zhangjiakou and Yanqing. According

to statistics, the Beijing–Zhangjiakou High-Speed Railway transported nearly 30,000 passengers on the first day of its operation, and almost 1.4 million passengers in the first month.

Case study

A historic railway: Beijing–Zhangjiakou Railway

As the predecessor of the Beijing–Zhangjiakou High-Speed Railway, the Beijing–Zhangjiakou Railway first opened in 1909. It was the first railway that was independently designed and constructed by Chinese people and represented the pinnacle of China's industrial–production standard at the time. The Beijing–Zhangjiakou Railway was not only the glory of China's modern engineering and the starting point of its independent railway–technology innovation, it also embodied the dauntless national spirit against the unusual historical background of a century ago.

In response to the challenges posed by the precipitous mountains and terrains of Badaling, the railway innovatively used two locomotives pushing and pulling together to run up the hillside along a "人" shaped rail–line. This



● Beijing–Zhangjiakou Railway opened in 1909

innovative design is based on the theory of running "a longer distance" to lessen the "difference in altitude" to allow the railway to successfully cut through the natural barrier.

Chief Engineer Zhan Tianyou used mining explosives, for the first time in Chinese history, for the construction of the Badaling Tunnel. He was also the first person in China to adopt a new construction method – the use of shafts, for the building of long tunnels. In addition to raising construction efficiency, some of the shafts were turned into ventilation shafts, which solved the exhaust–discharge problem of steam locomotives. The Badaling Tunnel was the first over 1,000m–long tunnel in the railway–

construction history of China, and its construction marked the beginning of China's independent construction of railway tunnels. The successful construction of the Beijing–Zhangjiakou Railway caused a sensation at home and abroad. Its profound influence extended far beyond the engineering and technology fields. The opening of the railway not only made communication between Beijing and Zhangjiakou easier, but also greatly boosted the confidence of Chinese people as well as the construction of railways in China. The Beijing–Zhangjiakou Railway also nurtured a large group of domestic engineers, who then devoted themselves to the construction of other railways.

Case study

A model of intelligent high-speed railway: Beijing-Zhangjiakou High-Speed Railway

Intelligent construction:

The Beijing-Zhangjiakou High-Speed Railway is the first in the world to have the full-range, full-profession, and full life-circle building information modelling (BIM) file.

The Badaling Great Wall Station of the high-speed railway is beneath the Qinglongqiao Railway Station of the Beijing-Zhangjiakou Railway. It is 102 metres underground and occupies an area of 39,800 square metres, making it the deepest high-speed railway station in the

world and the largest in China. To avoid any harm to the Great Wall, the domestically developed and world-leading electronic detonator micro damage controlled blasting technology was applied in the construction.

To protect the key water-source of Beijing, the Robbin Sliding Method was employed for the construction of the Guanting Reservoir Mega Bridge.

To preserve Qinghe Station, which was built in 1906, the century-old

station was reinforced and moved 359.36 metres in its entirety by using building monolithic moving technology.

Intelligent equipment:

The Beijing-Zhangjiakou High-Speed Railway is the first in the world that has adopted the BeiDou Navigation Satellite System and achieved automatic-driving at 350 kilometres per hour. The world's most powerful intelligent system also equips the trains with many advanced automatic features, such as automatic sensing of the operational status, automatic diagnosis of equipment malfunctions, independent decision-making for navigation safety, etc.



● Beijing-Zhangjiakou High-Speed Railway



● Interior of the train

Intelligent operation:

The Beijing–Zhangjiakou High-Speed Railway is highly user-friendly, and offers many intelligent services, such as electronic ticketing, passenger notification, intelligent in-station navigation, intelligent communication, 5G WiFi coverage, wireless charging, intelligent lighting, photochromic windows, etc., giving passengers an extremely smooth and convenient riding experience. During the Games, the media carriages will allow live broadcasting of the



● Ski-equipment storage cabin on the train

Games, and video recordings and live broadcasting of sports competitions will be provided in these carriages after the Games. In addition, a dedicated storage area is available in each carriage for ski equipment

brought by athletes and ski lovers. The Beijing–Zhangjiakou High-Speed Railway has helped the workforce involved in its construction to gain invaluable experience and trained professionals in the areas such as equipment manufacturing, construction technology, new materials and artificial intelligence. It represents a major advancement of Chinese railways, a leap from a high-speed age to an intelligent age, setting another milestone in its development.

Beijing–Chongli Expressway in full operation

The preparation for Beijing 2022 accelerated the planning and construction of the Beijing–Chongli Expressway, which is composed of Xinglongkou–Yanqing Expressway and Yanqing–Chongli Expressway. Xinglongkou–Yanqing Expressway is a legacy of the International Horticultural Expo 2019 in Beijing, which connects Changping District and Yanqing District. It was planned that the Yanchong Road would be upgraded to connect Yanqing and Zhangjiakou before Beijing's bid for the 2022 Games (as described in the bid documents). Considering that the Olympic Winter Games

would tremendously boost the development of the ice and snow industry in Zhangjiakou and bring about new economic growth in this area, the Ministry of Transport decided to upgrade the Yanchong Road from a national highway to an expressway after the success of the bid for the Games. Consequently, the construction of the Beijing–Chongli Expressway has contributed to the implementation of the National Strategy for the Coordinated Development of the Beijing–Tianjin–Hebei Region and the improvement of regional transport network.

The Beijing–Chongli Expressway has greatly improved the highway transport efficiency between Beijing

and Zhangjiakou. The expressway was put into full operation on January 23, 2020. The transit time between venues in Yanqing and those in Taizicheng is reduced from 2.5 hours to 50 minutes, and the journey from Beijing's 6th Ring Road to Taizicheng has shortened from 3 hours to 1.5 hours. As an expressway going northwest-ward from Beijing, it alleviates the traffic pressure on Beijing–Tibet and Beijing–Xinjiang Expressways, enhances the transport capacity in the northwest area of Beijing, and more importantly integrates Zhangjiakou into the one-hour Economic Circle of the Beijing–Tianjin–Hebei Region, playing a highly significant role in promoting the regional socio-economic development.

Case study

Innovation in the construction of Beijing–Chongli Expressway

Innovative technologies and ideas have been adopted in the construction and operation of the Beijing–Chongli Expressway.

An environment–friendly and sustainable expressway.

Technologies such as photovoltaic power and rainwater recycling are widely adopted. Fugitive dust, noise and harmful gas detection devices and drainage–purification equipment are installed. Super–long tunnels are built to traverse or bypass natural reserves.

A smart expressway. The entire expressway is covered by the BeiDou high–precision positioning and full–band 5G network. Technologies like ice and snow–proof and rubber road–surface materials are used to prevent ice and snow and reduce noise at some special sections of the expressway.



● Beijing–Chongli Expressway

In super–long tunnels, light awakening technology is applied to prevent fatigue driving with special lighting and paint. In addition, smart toilets, smart parking and intelligent robots are used to make the operation management more intelligent.

A challenging expressway.

Songshan Super–Long Tunnel measures 9.2 kilometres. Apart from being the longest in Beijing and Hebei, the construction encountered many challenges such as complicated geological structure, loose strata and large volume of gushing water. A 4.2 km–long Jinjiazhuang Tunnel, the

longest spiral tunnel in the world, was built to deal with the challenge of large altitude difference of the steep terrain.

A user–friendly expressway.

Due to the high elevation of the bridges and tunnels, it is extremely difficult to further expand the expressway after its completion. Therefore, a 4–metre–wide emergency lane and parking bays are set up along the entire expressway. Some of the service areas are also equipped with LNG refuelling stations, caravan camping sites, drinking water and children's playgrounds.



● Yanqing Transport Service Centre

Well-developed transport network in the Competition Zones

Building road networks inside and outside Yanqing and Zhangjiakou Zones. Well-developed transport networks have been in place in the two competition zones. The newly built roads have raised the density of the transport networks, improved the structure of the networks, enhanced connectivity inside and outside the competition zones, and facilitated the long-term development of the competition zones after the Games.

Construction of Yanqing Transport Service Centre, Zhangjiakou South Transport Hub and Chongli South Transport Hub. Yanqing Transport

Service Centre is for the transfer and connection between the high-speed railway and other forms of transport. After the Games, it will serve the daily transport in Yanqing.

Zhangjiakou South Transport Hub will be an important transport junction connecting Zhangjiakou with Beijing, Tianjin, Hebei, Shanxi and Inner Mongolia. During the Games, it will satisfy the demand for rapid transport connection, providing convenience for the travel of various client groups.

Chongli South Transport Hub will serve as a transfer centre for passengers travelling towards Zhangjiakou and satisfy the diverse transport demands of both local residents and visitors.



● Qinghe Station in Beijing



● Aviation medical care and rescue drill in Beijing



8

EFFORTS TO IMPROVE REGIONAL PUBLIC SERVICES

EFFORTS TO IMPROVE REGIONAL PUBLIC SERVICES



● 5G smart city

The joint efforts of Beijing and Zhangjiakou in hosting the Olympic Winter Games will tremendously boost the coordinated and integrated development of the Beijing–Tianjin–Hebei Region.

Beijing and Zhangjiakou take the Games as an opportunity to increase investment in many areas, such as communication facilities, accommodation and dining, medical and urban management services. A coordination and sharing mechanism has been in place to facilitate the upgrading of the overall public services of the region. The Olympic legacy in the area of public services is already visible ahead of the Games.

Creating a smart city through smart Olympic Winter Games

In Beijing, the development of communication infrastructure and service is accelerated by the preparation of the Games.

The 4G and 5G networks along the Beijing–Zhangjiakou High-Speed Railway have been put into operation synchronously. The cable-radio and television networks in Zhangjiakou have been upgraded. The supplementary coverage of trunk communication has been provided for the newly built venues and main trunk roads in Beijing, which has reinforced the urban management and command system. In Zhangjiakou, 189 new base stations have been installed to

expand the outdoor coverage of trunk communication for the competition zone and most part of the urban area.

By the end of 2019, a total of 17,357 5G base stations were built in the whole city of Beijing.

237 5G experimental base stations were built in downtown Zhangjiakou, the Games area in Chongli and along the Beijing–Zhangjiakou High-Speed Railway in 2019, thus achieving a full 5G coverage at Genting Olympic venues and the surrounding areas in Chongli. In 2020, the construction continued in downtown Zhangjiakou, the urban area of Chongli, the key Games areas and along the roads connecting the Games venues, to provide a full 5G coverage for the Games.

Case study

5G-empowered Olympic Winter Games

China Unicom has proposed 10 applications for the scenarios of smart spectating, smart Games running and smart Games participation, which will be achieved simultaneously in Beijing, Yanqing and Zhangjiakou Zones.

Smart spectating refers to:

- 5G+ smart competition livestreaming; and
- 5G+ Virtual Reality ice and snow interactive experiencing.

Smart Games running refers to:

- smart 5G networked UAV emergency response systems;
- 5G+ smart first-aid;
- 5G+ AR goggles for interviews¹;
- smart apparel²;

- smart Games cockpits;
- 5G Games security and bodyguarding; and
- police and insurance coordination POC.

Smart Games participation refers to:

- 5G+ smart marathon³; and
- 5G+ AI training⁴.

The actions described above are taken in accordance with the *Special Plan for Communication Infrastructure in Beijing Zone*, the *Special Plan for Communication Infrastructure in Yanqing Zone* and the *Plan for the Construction of City Utilities and Other Supporting Facilities in Zhangjiakou Zone of Beijing 2022*.

- 1 The portable 5G+AR goggles for interviews are a "magic tool" for journalists. They integrate such functions as real-time targeting of persons in the venue and intelligent identification of multiple persons, and automatic information matching. The goggles also support AI speech-to-text transcription, which helps facilitate the drafting process. When used together with a mobile phone, they support live streaming, during which the camera can be switched flexibly and easily in real time according to the requirements of the TV director.
- 2 Smart apparel refers to clothing with a smart heating system that comprises heating components, lithium batteries and certain warm fabrics. With the temperature control module and mobile applet properly set, the clothes, together with gloves and a hood, can be heated intelligently.
- 3 Smart marathon refers to the smart marathon management platform, which consists of a big

- screen for monitoring, a PC-based control platform and a WeChat applet. The platform integrates modular data and visualised data, and applies the technologies of big data analysis, face recognition, GPS tracking, 5G transmission of video streaming, etc. During a competition, the platform links to the systems of competition, volunteers, medical service, security and other functions to achieve real-time visual monitoring of the entire marathon competition. It provides a strong support for the efficient operation, optimized decision-making and athlete safety.
- 4 5G+AI smart training refers to a 5G+AI smart training platform based on Unicom's 5G network. The platform integrates the functions of sports image collection, sports performance analysis and competition/training management. The product will be used for ice hockey training, Olympic preparations of Chinese ice hockey team and other winter sports activities.

Promoting the development of regional catering and hotel service system

The hospitality infrastructure and services of the host city is further improved. Construction of hotels, skill training for professionals, and service quality upgrading are ongoing in Beijing and Zhangjiakou.

In Yanqing Zone, two 5-star hotels and one 4-star hotel have been built, and four 3-star hotels refurbished. On-line management platforms are established to provide professional training programmes for around 5,000 workers each year in combination with face-to-face training.



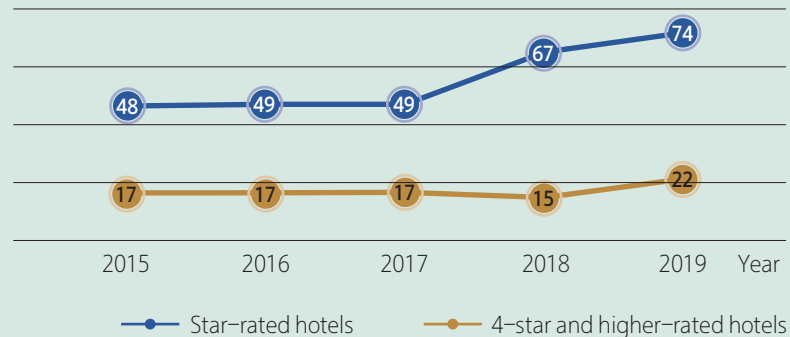
• "Hidden World" Guesthouse in Yanqing

Zhangjiakou has established work standards for six professions, including accommodation and catering, to promote the service quality. The number of star-rated hotels in Zhangjiakou increased from 48 in 2015 to 74 in 2019, of which the 4-star and higher-rated hotels increased from 17 to 22.

Promoting the coordinated development of medical services in Beijing and Zhangjiakou

Being a city with an advanced medical system, Beijing actively offers medical resources to other areas, provides training and exchange programmes and builds cooperative hospitals. The city has formulated and executed a series of policies to facilitate the integration and sharing of medical resources, in order to enhance the

Number of star-rated hotels in Zhangjiakou from 2015 to 2019



coordinated development of medical service capacity in Beijing and Zhangjiakou.

Zhangjiakou has accelerated the development of its medical service system. A number of construction

projects (including helipads) are underway; the emergency service capacity of the hospitals is upgraded; eight of the local hospitals are designated as hospitals for Beijing 2022; and three are selected as pilot hospitals for aviation medical care and rescue. The local medical service capacity has greatly improved in the effort to support the Games.

Up to September 2019, a total of 48 public hospitals in Zhangjiakou established collaborative relations with 60 major hospitals in Beijing, working together in 62 joint projects. Although the number of medical and health institutions at all levels and their resources (hospitals, hospital beds, licensed doctors/assistants) in Zhangjiakou remains stable, the service quality has continued to improve since 2015.



● Snow-rescue drill

Improving municipal infrastructure and utility support

Water

In terms of urban water supply and drainage systems, the concept of "sponge city"¹ has been adopted in the works of venue construction. For the purposes of controlling rainwater, flood and melting snow (ice), and protecting the water environment, a number of water-resource recycling works have been launched and ecological and clean small watersheds projects have been carried out, with a view to improving the water environments of the competition zones.

Beijing has launched a city-wide project to guarantee and improve the safety of drinking water and promoted the construction and operation of sewage-treatment facilities.

From 2017 to 2019, a total of 26 recycled-water plants were built, eight sewage-treatment plants upgraded and renovated, and 2,019km of sewage collecting pipelines constructed. These efforts have solved the sewage collecting problem in 1,506 villages, and raised the sewage-treatment coverage of the city to 94.5%.

In Zhangjiakou, the rural areas are prioritised in the project to guarantee and improve the safety of drinking water. Tap water is now available for households in 3,674 villages out of 4,175, an 85% coverage. As centralised water-

supply reaches 95% of the households, 3.491 million residents are benefited.

Power

In terms of power supply, efforts have been made to accelerate the power supply projects to support the Games, including:

- Flexible DC transmission demonstration project;
- Regional energy centre in Tongzhou District;
- Construction and upgrading of substations and distribution lines for Yanqing and Zhangjiakou Zones; and
- Renovation of some power facilities and power lines in Yanqing and Chongli Districts.

Heating

In terms of heating, Beijing has projected the heating load of the competition zone and developed a heating plan that involves the use of electric power for indoor heating. The heating network in Chongli has been renovated and put into operation. The heating capacity has been enhanced through coordinated management of heating and electric energy, and a coal-burning power plant will serve as a backup heating source.

Natural gas

In terms of natural gas, there were six expansion projects, four new projects and about 20km of medium pressure pipelines under construction in Yanqing in 2019, which has further

Case study

Surface-water plant and water pipelines for the Games core areas of Zhangjiakou Zone

In order to meet the Games-time and post-Games water needs, one surface water plant is built in the Games core area, with a daily capacity to supply 10,000 m³ of water to the 15,000 permanent residents in the area. Considering the current inadequate water supply for the urban area and the future development of the snow resorts around the urban area, another plant is built in the urban area of Chongli, with a daily output of 40,000 m³. Furthermore, to raise the Games-time water supply capacity, the pipeline networks of these two water plants are connected. The total length of the pipeline networks has reached over 100km.

expanded the natural gas coverage. The natural-gas pipeline laying project in Zhangjiakou Zone has been completed. In Zhangjiakou competition zone, the foundation work of an LNG vaporising station has been completed and the renovation of old gas pipelines in urban areas is being expedited.

¹ The "sponge city" concept derives from a new generation of urban rainwater management. It means that a place is as resilient as a sponge in terms of its adaptability to environmental changes and its response to natural disasters caused by rainwater. It is able to absorb, store, infiltrate and purify water when it rains, and release and utilise the stored water when needed.



9

SHOUGANG'S TRANSFORMATION INTO A NEW URBAN LANDMARK





● Night view of Shougang Park

SHOUGANG'S TRANSFORMATION INTO A NEW URBAN LANDMARK

Established in 1919, Shougang Group, mainly involved in iron and steel production, is a major multi-industry and transnational business group. Due to the staging of Beijing 2008 and the effort to reduce pollution while promoting socio-economic development, the steel plant of Shougang Group in Beijing was shut down and relocated.

In 2016, the Beijing Organising Committee for the 2022 Olympic and Paralympic Winter Games moved into Shougang Park. In 2018, Shougang Group signed the agreement with Beijing 2022 to become the Official Partner of Urban-renewal Services of the Games. Shougang has seized the strategic opportunity to combine:

- the creation of a new landmark in Beijing, as part of the drive of urban renewal;
- the regeneration of the old industrial park;
- the development of the company toward energy-saving and pollution-free business; and
- the staging of the Games.

The new Shougang Park follows the concept of development on less resources, promotes sustainable and intelligent technology, creates a new driving force for innovative development and uncovers new resources for cultural development.

Shougang Group is committed to achieving the renewals of culture, industry, ecology and vitality in the heart of a mega-city. The goal is to establish a new landmark that represents high-quality development, advanced urban governance, high-quality living and business environment, and cultural prosperity of the capital of China.

IOC President Thomas Bach has commented that Shougang Park will become a classic example of urban development driven by the Olympic Movement, as well as a global example of the reuse of industrial legacies and the renewal of an industrial park.



● Big Air Shougang

Building ice and snow venues and facilities to boost related sports industries

The Beijing 2022 Organising Committed offices, built on site of Shougang steel plant, will also serve as the Games-time command and coordination headquarters, and will become an industrial incubator after the Games.

Big Air Shougang will become the first permanent Olympic venue for Snowboard Big Air competitions, which will serve as the venue for major competitions, training, public fitness and leisure activities after the Games.

The construction of the Winter Sports Training Centre of the General Administration of Sport of China has been completed, where ice-sports teams and individual athletes are based and trained. The Centre will also provide services for NOC teams' pre-Games adaptation training.

Shougang Park now is a site for holding cultural and sports events as well as exhibitions and a national sports-industry demonstration zone.

Various international sports events, especially winter sports, have taken place here, including:

- 2019 FIS Cross Country Skiing China City Sprint Beijing,
- 2019 Air+Style Beijing FIS Big Air World Cup,

- 2019 Curling World Cup; and
- 2019 Kontinental Hockey League Championships.

With its appealing industrial architecture patrimony, Shougang Park has become a favoured site for press releases, art performances and forums, such as:

- Release of the Mascots of the Olympic Winter Games Beijing 2022;
- New Year Countdown to 2020 in Beijing;
- Tik Tok Beijing 2019;
- 2019 "Shougang Park" Environmental Dance Festival;
- PyeongChang 2018 Debrief;
- Other international conferences, technological, cultural and sports exhibitions.



● FIS Cross Country Skiing China City Sprint
Beijing 2019

Providing facilities to attract projects and enterprises.

The long-term benefits of the Olympic Winter Games has enable Shougang to grow into a sports+ and technology+ industrial base that is suitable for creating a special industry cluster. The Beijing 2022 Technology Operation Centre and its supporting communication hub built in Shougang Park will provide digital infrastructure to support the future Shougang Smart Park. The Olympic Winter Games Cloud Broadcast Centre built in the Park will carry out Games-time broadcast and support the broadcast of future sports events. Beijing's first public bonded warehouse for sports goods built in the Park will support the Olympic Winter Games and future sports events. The existing silo buildings in the Park have been used to provide spaces for art exhibitions and shows. Shougang Infinite Park has been built here to hold extreme sports around the year. These favourable conditions and good facilities in the Park have already attracted a group of quality enterprises, including Tencent Sport, Anta Sports and Taishan Sports.

Turning the industrial architecture patrimony into cultural legacies

Reviving and making use of industrial architecture patrimony. A Beijing 2022 Shougang industrial patrimony preservation list has been made

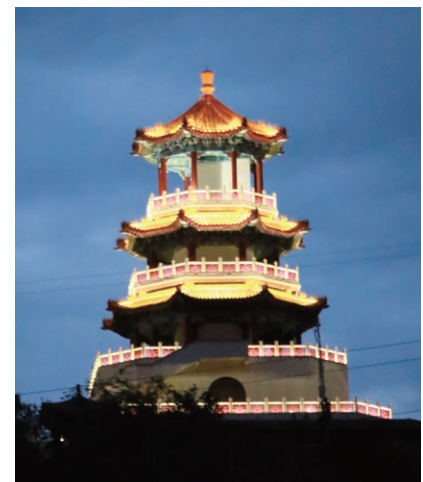


● The silo office buildings of Beijing 2022

and supporting policies formulated to promote the preservation and renovation of the industrial patrimony of Shougang. A museum, an industrial incubator base¹ and leisure facilities have been built in the existing buildings in the central part. The blast furnaces and desulphurisation workshop in the industrial patrimony park in the north are under constant protective renovation. Cultural and technological elements have been added, such as a special scenic strip and lightshows. The railway tracks, pipeline racks and conveyor belts are used to build landscape paths and skywalks, to create unique public domains.

Preserving the cultural elements of Shougang Park. Shougang Park is located in Shijingshan District and by the Yongding River, where there

are numerous ancient architecture and places of interest. Protecting and passing on the local culture will further enhance the cultural quality of Shougang Park.



● A tower in Shijingshan

¹ Industrial incubator refers to a system that promotes the intensive development of an industry or industrial cluster by providing governmental supports in terms of policy, land and finance.

Creating an environment-friendly space in Shougang Park

This initiative involves the following efforts to:

- Accelerate the development of the Yongding River Ecological Belt
- Improve the local water systems and water environment
- Complete the construction of Shijingshan Scenic Park
- Build a post-industry scenic and leisure zone
- Create an ecological space with

diverse landscapes

- Build a smart energy system
- Build a number of high-quality sustainable architecture
- Complete the renovation of Xiu Pond and Qunming Lake

Building an international talent community in Shougang Park

The first step is working with a professional international institution to establish the profile, needs and expectations of the international community that Shougang wants to build.

The second is providing relevant living and supporting facilities for the community, such as international-brand cafés, hotels and other residential facilities.

The third is launching international promotion by staging a series of internationally branded events such as the Belt-and-Road Global Youth-Leader Forum.



● Night view of Shougang Park



• Forest farmers from Manba Village, Manba Township, Zhenyuan County

10

BOOSTING THE COMPREHENSIVE DEVELOPMENT OF ZHANGJIAKOU





● A ski resort in Zhangjiakou

BOOSTING THE COMPREHENSIVE DEVELOPMENT OF ZHANGJIAKOU

Seizing the historical opportunity of Beijing 2022, Zhangjiakou has closely combined the preparations for the Games with the execution of the 13th Five-Year Plan¹ and the national strategy of the coordinated development of Beijing, Tianjin and Hebei, in the hope to

creating a better balance between Beijing city and those less developed regions around it. Zhangjiakou has accelerated infrastructure construction and improved its ecology and environment to facilitate the further development of four-season tourism and related industries.

The less developed areas have seen improvement in people's life and local residents have been given greater employment opportunities. By the end of 2019, all of the 12 counties and districts, 1,970 villages and 602,100 people below the poverty line in Zhangjiakou were out of poverty; and the poverty occurrence rate dropped from 30.24% in 2015 to 0.39%.

¹ The 13th Five-Year Plan is a framework document that plans China's socio-economic development from 2016 to 2020.

Strengthening infrastructure construction

Improvements to the transport infrastructure. In terms of land transport, the following projects have been completed:

- Chongli section of the Beijing–Zhangjiakou High-Speed Railway
- Taizicheng–Chongli section of the Taizicheng–Xilingol High-Speed Railway
- Zhangjiakou–Chengde Expressway
- Beijing–Chongli Expressway and National Highway 335
- 6 provincial highways, 4 county highways, 14 town roads and 259 village roads
- Taizicheng High-speed Railway Station and North and South Chongli Stations
- 4,888.58 kilometres of rural roads
- 14.80 million square metres of cemented village streets



• Ski resort in Chongli

Speeding up the infrastructure improvement in the areas below the poverty line, including drinking water, electric power, communications.

Quality of drinking water is monitored on a regular basis to prevent any potential safety/public health problems. During the period of the 13th Five-Year Plan, a series of safe drinking water projects were

completed in Zhangjiakou, benefiting 1,321,600 people including 327,000 in families below the poverty line. Effective measures have been taken to achieve the full coverage of electric power, radio and television signals, broadband networks and 4G networks in all villages below the poverty line.

Accelerating environmental management

Actively exploring environmental management as a tool for poverty alleviation. As the preparation for Beijing 2022 and the development of the "capital water-source conservation functional zones and eco-environment supporting zones" in Zhangjiakou proceed, Chongli has greatly stepped up its efforts in afforestation. Zhangjiakou has taken active measures to promote



• Huosutai Village in Yimatu Township of Chongli takes part in the greening project of Beijing 2022

poverty alleviation through forestry. In the afforestation and greening projects, people below the poverty line are provided with more job opportunities so as to increase their family income. Nearly one million people with working ability from households below the poverty line in Hebei Province have been employed as forest rangers, thus helping three million people out of poverty with stable incomes.

Establishing the new mechanism to raise the income of people through ecological means. Zhangjiakou is using environmental programmes as a tool to raise the income of people below the poverty line, which has brought about improvements in both the environment and farmers' income. To maximise the income of residents in the programme areas, particularly those from households below the poverty line, Chongli has launched the Execution Plan for Poverty Alleviation through Purchased Afforestation. The plan has modified the mechanism of afforestation and promoted the coordinated forestry development, with 20% of the final income from afforestation going to the cooperatives, and 80% used for targeted poverty alleviation and bonuses for members of the cooperatives. For example, Huosutai Village in Yimatu Township of Chongli took part in the greening project of Beijing 2022 and the purchased-afforestation programme,

and an additional one million yuan income was generated each year. Consequently, the village successfully lifted itself out of poverty in 2019.

Advancing sports employment and industrial development

Staging sporting events to boost the economy in areas below the poverty line. According to the statistics from Zhangjiakou Municipal Bureau of Sports, the city has staged over 30 provincial and municipal poverty-alleviation sporting events¹ in 2019, which attracted over 12,000 participants from the Beijing-Tianjin-Hebei Region and neighbouring provinces. The events benefitted over 1,000 people below the poverty line from eight counties and districts, and offered 881 event-service job opportunities to the households below the poverty line.



● Zhangjiakou Kangbao Grassland International Marathon

Popularising sports in villages. Over 14,000 pieces of outdoor fitness equipment have been installed in 1,777 villages (including those below the poverty line) across the region to encourage sports for all among villagers

and prevent poverty caused by illnesses.

Developing the ice and snow industry.

By the end of 2019, ski resorts in Chongli employed nearly 2,000 local residents, which account for over 90% of the employees of the ski resorts. The star-rated hotels in Chongli offered job opportunities to 1,622 people. According to statistics, one out of five people from Chongli are engaged in the ice and snow-related industry, which has become a pillar in the urbanisation of rural labour force and the employment for the population below the poverty line. Furthermore, the development of the ice and snow equipment manufacturing industry has been accelerated, and Zhangjiakou has taken advantage of its ice and snow resources and industrial foundation to focus on the research, development and production of ice and snow equipment. Two ice and snow-industrial parks, each occupying over 200 hectares, have been established in Gaoxin and Xuanhua Districts.



● Workers in ice and snow equipment manufacturing industry

¹ Poverty-alleviation sporting events refer to the staging of sporting events in the areas below the poverty line to help such areas generate income through catering, accommodation and retailing while providing temporary job opportunities for people below the poverty line.

Case study

Chongli, a renewed ice and snow town thanks to Beijing 2022

Chongli, a small city in northern China with a population of slightly more than 100,000, used to be one of the counties included in the national poverty-alleviation project. Up to 2015, the poverty occurrence rate of the county still remained as high as 16.81%. However, its exceptional ice and snow resources helped the county turn its fate around. Benefiting from Beijing 2022, Chongli has vigorously developed its ice and snow tourism. Today, over 30,000 people are directly or indirectly engaged in the ice and snow and tourism industries, among whom over 9,000 come from households below the poverty line.

Shi Yuping, a 43-year-old woman from an households below the poverty line, comes from Xishizigou Village of Chongli. She lived off odd jobs and earned less than 10,000 yuan per year in the past. Nowadays she works as a waitress at Fulong Snow Park, earning 3,000 yuan per month, and has a room at the company dorm. "Staying at the company dorm has saved me a large amount of rent, solved my big

problem, and allowed me to take care of my two kids studying in the county town," said Shi.

Not only does Chongli appeal to countless visitors in winter, it also has a lot to offer in summer, with sports events staged all year round. Yang Zhiguo, Director of Chongli Poverty Alleviation and Development Office, remarked: "In the sports events of all levels staged here, Chongli actively coordinates with the organisers to provide more job opportunities to the local population below the poverty line in the event service and support work, so as to increase their income from employment." "At Chongli 50km International Mountain Cross Country Competition and Zhangjiakou Cycling Tournament (Chongli Leg), 100 people from the households below the poverty line of Shizigou Township and Xiwanzi Town worked in competition supply, guiding and promotion. Each person received a subsidy of 200 yuan per event," Lu Yanqiong, Chief of Law, Regulation and Industry Section of Chongli Bureau of Sports, told the reporter.

Thanks to Beijing 2022, Chongli has become increasingly famous. Many local farmers mentioned in interviews that their produce was selling better than before, especially when people heard it came from Chongli. "The broad-bean production in Chongli is getting better and better, and this is all owing to the opportunity brought by Beijing 2022," commented Jia Zhijun, Deputy Director of Chongli Bureau of Agriculture and Rural Affairs.

To showcase itself to the world during the Games, Chongli has done a great deal in the infrastructure construction. "Chongli has four big gullies and 4,725 small gullies, which greatly restricted local development. Driven by Beijing 2022, we have continued to break the limitations. We have built and renovated 15 highways and 6 new tunnels. Now, the local residents enjoy good water, electricity, road, communication and gas services," remarked Yang Zhiguo.

By the end of 2019, poverty occurrence rate in Chongli has dropped to 0.038% from 16.81% at the end of 2015. Chongli District was officially removed from the list of impoverished counties by the People's Government of Hebei Province in May 2019. From a national-level impoverished county to the co-host of Beijing 2022, this small city beyond the Great Wall has seen a great change in a short period.



● The most famous section of the Great Wall is known as the Badaling section.



11

**PROMOTING
DEVELOPMENT IN THE
YANQING REGION**

PROMOTING DEVELOPMENT IN THE YANQING REGION

Yanqing, one of the three competition zones of Beijing 2022, is a relatively less-developed area in northwest Beijing. Yanqing takes the preparations for Beijing 2022 as a crucial opportunity to consolidate its strategic positioning as a major ecological-conservation area and technological-innovation development area of the Chinese capital, as well as an international sports, cultural, tourism and leisure area. To that end, it is stepping up ecological and environmental protection to improve environmental quality, upgrading infrastructure and public services, and developing its cultural and sports tourism through the promotion of the world-renowned Expo 2019, Winter Olympic venues and the Great Wall¹. Through the above efforts, today the initial results of rapid development is visible in Yanqing. In the future, Yanqing will keep on using the Olympic Winter Games legacy to boost its sustainable development.

Implementing comprehensive environment management

Continuous efforts in air-pollution control and prevention. Yanqing is working together with Zhangjiakou to strengthen the coordinated regional air-pollution prevention and control, in order to improve air quality. In terms of heating, among the 376 villages in the area, 79 villages have replaced coal with natural gas and 164 have replaced coal with electricity.

Apart from certain villages that use geothermal heating or have central gas heating, the remaining 109 villages have introduced low-sulphur coal². Next, as construction of power grids continues outside mountainous areas in Yanqing, the number of villages using low-sulphur coal will gradually be reduced.

The annual average level of PM 2.5 was $31 \mu\text{g}/\text{m}^3$ in 2020, a 49% drop compared with 2015, and the area has made remarkable progress towards achieving WHO's air-quality standard of $10 \mu\text{g}/\text{m}^3$. Yanqing will continue to improve its air quality and strengthen the management and control of pollution sources between 2021 and 2025. It will expedite the construction of clean-energy supply systems that are based on electric power and natural



● Yanqing World Expo

¹ The most famous section of the Great Wall is located in Yanqing.

² Low-sulphur coal refers to coal products that satisfy the *Technical Requirements for Low-Sulphur Coal and Products* (DB11/T 097-2019) of Beijing.

gas and supplemented by wind and solar energy, so as to contribute to the successful staging of Beijing 2022 and continue to benefit local residents.

Continuous development of the water environment. 1,274 issues concerning rivers and lakes have been rectified and improved, achieving a rectification rate of 99%. The quality of surface water of the entire region remains stable and reaches national standards and above, making it top of the municipality.

Continuously expanding forestry. Focusing on areas surrounding the Games venues and main roads to the Competition Zone, a large scale of afforestation and sandstorm-source control projects are completed in Yanqing. Specially, an area of 83,467 hectares has been afforested and forest coverage has reached 61.13% in the area.

Improving infrastructure and public-service standards

Improving transport infrastructure.

Beijing 2022 has expedited the construction of the planned transport infrastructure in Yanqing. The opening of Yanqing stretch of the Beijing–Zhangjiakou High-Speed Railway on December 1, 2020 and Beijing–Chongli Expressway on January 23, 2020 has made Yanqing accessible from Beijing within 30 minutes, and improved its transport connections with Hebei and urban area of Beijing. In recent years,

Yanqing has built 34.19 kilometres of urban roads. In rural areas, all main roads are in operation, with a total length of 1,068 kilometres. The well-developed road network in the area has made it safer and easier for local residents to travel.

Enhancing education quality. Winter-sports training is provided every school-year in primary and high schools in the district to help 24,000 students learn the skills. The Beijing Institute for International Olympic Studies was also created in Yanqing.



● Skating coach training for Beijing 2022 in Yanqing

Three new kindergartens have been built, providing an additional 1,080 openings for children, and the coverage of affordable kindergartens has reached 99.6%. The development of affordable, adequate and high-quality pre-school education has been achieved.

The quality of compulsory education has kept on improving and the education quality of rural schools has seen a new improvement. According to an education-satisfaction appraisal

conducted by a third party as commissioned by Beijing Municipal Commission of Education, Yanqing ranked second in 2019 and first in 2020 in Beijing Municipality.

Case study

The Beijing Institute for International Olympic Studies

The Beijing Institute for International Olympic Studies is an Olympic studies centre established in China following the approval by the IOC in 2020. Located in Yanqing, it is a branch of the Capital University of Physical Education and Sports, which is dedicated to the research, education and dissemination of the Olympism.

Centrally located in Yanqing New City, the Institute has a planned area of 37 hectares. According to its positioning of "high standard, refined, internationalised and service-oriented", the Institute will become a training base for top sports professionals, a research and training centre for winter sports and a platform for Olympic education and international cultural exchange.

After Beijing 2022, the Institute will become a unique carrier that inherits the Games legacy, provides Olympic resources and promotes Olympic education. It will play a unique role in disseminating Chinese and Olympic cultures.

Continuous improvement of housing.

Five housing upgrading projects have been launched, benefitting 13,500 residents in 10 neighbourhoods. The building of over 2,855,700 square metres of new housing has begun and 530,700 square metres have so far been completed.

Rapidly rising medical-care service level.

A medical-support centre has been built for Beijing 2022, which, in addition to providing comprehensive medical support for the Games, will greatly elevate the medical-care service level of the district after the Games.

Employment training has remarkably increased the income of local residents.

A total of 81,000 individuals have so far been given vocational training in areas such as catering, tourism, ski coaching and drone piloting. With their newly acquired vocational skills, nearly 50,000 trainees have found jobs after the training. The training has helped increase the income of previously low-income farmers and low-income households no longer exist in this district. The disposable income per capita of the residents in the district has reached RMB37,385. It is worth mentioning that a farmer ski team has also been formed, members of which have obtained the training certification and now are giving training to ski enthusiasts. Beijing 2022 has completely changed their life.



● Ski-equipment repair and maintenance training class

Boosting the development of industries

Boosting the development of winter sports industries. Zhongguancun (Yanqing) Innovation Centre for Cutting-edge Sports Science and Technology is built, which has attracted 102 winter sports-related enterprises.

Improvement of holistic tourism.

Tourism has always been a leading industry of Yanqing. Expo 2019,

the Great Wall and Beijing 2022 preparations, as a whole, have in recent years facilitated the development of year-round tourism, making Yanqing a national model of tourism destination. The area has generated a total of RMB32.3 billion from tourism between 2015 and 2020, a 30.3% increase compared with the period from 2010 to 2015. Guesthouses in particular have developed rapidly, and four brands have been created, namely "Beijing 2022 Homestay", "Expo Homestay", "Great Wall Homestay" and "Landscape Homestay". Over 100 guesthouses and 376 courtyard-style guesthouses have been built, making the district one of the first pilot areas for the development of guesthouses in the country. Currently, guesthouses are phenomenally popular, and all the high-end guesthouses were booked out during the Chinese New Year holidays.



● Natural Landscape Gallery Tourism Area in Yanqing of Beijing

Case study

"Guesthouse" economy sweeping across the "Beijing 2022 Town"

Located in Houheilongmiao Village of Zhangshanying Town in Yanqing, a boutique guesthouse named "Hidden World" is highly popular among visitors. The 30-year-old Zhang Haichao is the general manager of the guesthouse. After more than three years' development, "Hidden World" now has 10 guesthouses in service while another 40 are under construction, most of which are located within Yanqing. The opportunity for his business comes from the Olympic Winter Games that will soon take place at his doorstep.

Zhangshanying Town, at the foot of Haituo Mountain, will be the site for the Alpine Skiing, Bobsleigh, Skeleton and Luge events of Beijing 2022. In March 2016, Zhang, who was previously doing business in downtown Beijing, learnt that his hometown would be transformed into a winter sports leisure town. He decided to seize the opportunity and returned home to start a new business.

He explained that one of the main reasons for starting the guesthouse was that he and his friends all love

skiing, but it was often inconvenient for a group of people to check into a hotel with ski equipment and get a public space for a get-together. "We are holding the Olympic Winter Games here, so more people will come here to ski, and the demand for accommodation will certainly rise."

Houheilongmiao Village has a total of 170 households and a large number of vacant farmhouses. The villagers would benefit if the farmhouses could be turned into guesthouses. Consequently, Zhang rented 20 farmhouses from the villagers, refurbished and turned them into boutique guesthouses. To allow guests to experience the joy of picking their own fruit and vegetables, Zhang also planted more than over 6 hectares of Chinese medicinal herbs and over 3 hectares of grape vines, fruit trees and vegetables. All his staff are recruited from the local villages. Since its opening, the "Hidden World" Guesthouse has never been short of guests. Zhang has continued to expand his business and opened farmyard guesthouses of different styles, while more and

more young people are joining his team. Today, his guesthouses have a 70% occupancy rate throughout the year and accommodate an annual average of over 20,000 guests.

"Without the Olympic Winter Games, the boutique guesthouse market would not have been in demand," commented Zhang. Over half a dozen of his childhood friends have now returned home to start their own businesses. "After working so hard for so long away from home, they feel the best opportunity actually lies at their own doorstep."

In the last two years, driven by Beijing 2022 and the Horticultural Expo 2019 in Beijing, Yanqing has increased the upgrading and renovation of its tourism facilities. Tourism has been significantly stimulated, and the guesthouse economy, in particular, has become something grown out of nothing. Today, the demand for boutique guesthouses in rural areas is high, and for some of them, the booking rate during the Spring Festival reached 90%.





12

CARRYING ON THE OLYMPIC SPIRIT AND PROMOTING SOCIAL HARMONY



● Ice and snow sports at Beijing Shijia Primary School

Providing Olympic cultural education to enhance social harmony

As the world's first host city of both the summer and winter Olympic Games, Beijing actively launched the publicity campaign on the Olympic Winter Games. In the campaign, lecture groups were organised and sent to schools and neighbourhood communities to brief the public about the Games and the Games preparation. By the end of 2019, the lecture groups delivered lectures on the Games to 7,100 primary and middle school students at 32 schools across Beijing.

The 2019 Olympic Education and Winter Sports Promotion Campaign for Primary and Middle School Students in Beijing was launched in June 2019, which reached out to nearly 200,000 primary and middle school students and teachers at nearly 200 schools across the city, laying a solid foundation for them to develop a profound understanding of the Olympic culture and spirit.

Zhangjiakou has taken multiple measures to promote Olympic education and carry out activities of "classroom teaching + outdoor practice" to popularise winter sports among the youth. The city has organised three consecutive editions of the Winter Sports Experience Activities for Primary and Middle

CARRYING ON THE OLYMPIC SPIRIT AND PROMOTING SOCIAL HARMONY

Taking the preparation for the Games as an opportunity, Beijing 2022 is committed to the legacy objectives of carrying on the Olympic Spirit and the Paralympic values, popularising ice and snow culture, encouraging healthy lifestyles, improving social harmony and disability awareness, enhancing the friendship among the people in different countries, and making the world more inclusive.

Throughout the process of Games preparation, Beijing 2022 has been adhering to the concept of "engagement by all, dedication of all and shared by all" and earnestly implementing the *Beijing 2022 Social Harmony Action Plan* and the *Beijing 2022 Voluntary Service Action Plan*. People from all walks of life have been mobilised to engage in the Games preparations.



● Experience curling at the Beijing 2022 Community

School Students, engaging about 70,000 primary school students in ice and snow sports.

Social harmony construction. Beijing is actively engaged in introducing Olympic Winter Games to local communities and has achieved good results. From the first "Beijing 2008 Community", to the first "Beijing 2022 Community"¹, located at Guangning Street of Shijingshan District, it proves that the Olympic Spirit has been widely spread and carried forward at the community level.

Aiming to build itself into "a city of

sports, vitality, health, harmony and prosperity", Zhangjiakou actively refers to the Olympic Winter Games in its social activities, while organising diverse winter sports fitness programmes for all the local residents. In 2018, the city organised a series of popular ice and snow cultural events, such as ice and snow tourism festival, ice and snow cultural festival and ice and snow carnival.

Chongli District has launched the campaign of "Embracing Beijing 2022", with a view to promoting community engagement and encouraging people to know more

about, support and participate in the Olympic Winter Games. By the end of 2019, more than 200,000 people participated in various Beijing 2022 publicity and popularisation activities.

¹ "Beijing 2008 Community" and "Beijing 2022 Community" are demonstrative local communities to promote the Olympic Games, aiming to carry forward the Olympic Spirit by encouraging residents to practise summer and winter sports in their communities and organise Olympic knowledge exhibitions and lectures.

Case study

The First Beijing 2022 Community in Beijing Unveiled

At the Celebration of 1,000–Day Countdown to Beijing 2022 & Unveiling Ceremony for the "Beijing 2022 Community" held in Shijingshan District on May 11, 2019, Gaojing Road Community at Guangning Street of Shijingshan District became the first "Beijing 2022 Community" entitled in Beijing.

Since 2018, Guangning Street has frequently organised its residents to practise Olympic winter sports such as skating and curling and attend Olympic knowledge lectures. Today, all local communities in the Street have established their winter sports teams, including dry curling teams, dry hockey teams, and youth skating teams.

The Street took the "Beijing 2022 Community" naming as an opportunity to accelerate community construction in eight aspects such as livelihood improvement, living environment upgrade, leisure and recreation, with a view to bringing more happiness and long–terms benefits to the community residents.

Cultivating winter sports culture and increasing the Games influence

Promoting cultural and artistic creation on the theme of Olympic Winter Games. Beijing 2022 has designed and created the Games identification and look elements that well incorporate the ethnic, artistic and functional features, including the emblems, mascots, medals and torches of the 2022 Olympic and Paralympic Winter Games. In the design process, Beijing 2022 called for proposals from the whole society, with a view to inspiring the general public to participate in the artistic creation for the Games and promoting the integration of the Chinese traditional culture and the Olympic culture. During the call for mascot design proposals, a total of 5,816 submissions were received.

Spreading ice and snow culture.

Concentrated in the host cities, cultural activities on the theme of Olympic Winter Games are held nationwide to carry forward the Olympic Spirit, promote Beijing 2022 and popularise winter sports knowledge. Such events include:

- Olympic Day celebrations,
- "Meet in Beijing" International Arts Festival,
- National Public Ice and Snow Season,
- National Public Ice and Snow

Festival,

- Beijing "Happy Citizen" Ice and Snow Season,
- "Make It Better for Beijing 2022" Public Sports Events
- Beijing Ice and Snow Culture Tourism Festival,
- Beijing New Year Countdown Celebrations,
- Beijing Olympic City Sports Culture Festival,
- "Meet in 2022" Ice and Snow Culture Festival,
- "Healthy Hebei, Joyful Winter Sports" Ice and Snow Season,
- "Magnificent Landscape, Passionate Zhangjiakou" Ice and Snow Season,
- Zhangjiakou Folk Culture International Tourism Festival

Some of these events will be held on a regular basis in the cities as a tradition that will last into the future.

Organising international ice and snow culture exchanges. A series of cultural events have been held overseas to promote Beijing 2022, including the Chinese Red "Light–on 2022" Spring Festival Celebration held in February 2019 in Lausanne, Switzerland and the Hello Panda Festival at Citi Field, New York in December 2019. These events brought the joyful and harmonious atmosphere of the Chinese New Year to the world, enabled people around the world to experience and understand Chinese culture.

The 6th Forum of Northeast Asian Peace and Development, the Beijing International Horticultural Expo 2019, and the Conference on Dialogue of Asian Civilizations were held in Beijing in the same year. The elements of Beijing 2022 were integrated in these events to tell the stories about the Games and promote winter sports. Since 2016, the International Winter Sports (Beijing) Expo has been held in Beijing for five consecutive years. To date, the Expo has become the world's largest and most authoritative one in the winter sports industry. The continuous staging of the Expo will enlarge the scale of the winter sports industry in the host cities, attract more investments, and speed up the development of China's winter sports industry.

Enhancing voluntary service system and carrying forward voluntary service spirit

Mobilising social resources to engage in voluntary services for Beijing 2022. On December 5, 2019, the global recruitment system for Beijing 2022 volunteers was launched. The voluntary service work of Beijing 2022 has been advancing step by step as planned. In line with the *Voluntary Service Action Plan for the Olympic and Paralympic Winter Games Beijing 2022*, five volunteer programmes have been established:

- Pre-Games Volunteer Programme,



Beijing 2022 activities on Olympic Day



1,000-Day Countdown to Beijing 2022



Release of emblems for the Olympic and Paralympic Winter Games Beijing 2022



Unveiling of mascots for the Olympic and Paralympic Winter Games Beijing 2022



The First Anniversary of Beijing's Success in the Bid for the 2022 Olympic and Paralympic Games



"Invitation from the Great Wall" in Celebration of the First Anniversary of the Successful Bid for the 2022 Olympic Winter Games



The call for thematic musical works for Beijing 2022



2020 New Year Countdown & Opening Ceremony of the Fourth Beijing Ice and Snow Culture Tourism Festival

- Test Event Volunteer Programme,
- Games Volunteer Programme,
- City Volunteer Programme, and
- Voluntary Service Legacy Conversion Programme.

Among the five programmes, the Voluntary Service Legacy Conversion Programme focuses on three aspects: first, systematically archiving the literature legacy including documents, audios, videos, graphics, and souvenirs for smooth knowledge transfer in future; second, providing follow-up training for HR legacy such as Games volunteers and city volunteers to enable them to play a more effective role in society after the Games; third, summarising the experience and knowledge in voluntary service management, to benefit the cause of voluntary service in China. In May 2019, ten voluntary services model projects for Beijing 2022 were initiated. These programmes and model projects will not only serve the Olympic Winter Games Beijing 2022, but also contribute to the development of voluntary service in the host city after the Games and the success of major events held in China in future.

Intensifying training for skilled volunteers. Beijing and Hebei have recruited volunteers with intermediate/advanced ski skills. To date, a pool of 3,090 skilled volunteers has been in place. Beijing 2022 also recruited well-



• Story-sharing session by Beijing volunteers



Beijing 2022 Voluntary Service Operating Plans





trained ski and skating players and experts to staff the Beijing 2022 Ski Team (see case study below). By the end of 2019, the team comprised 322 members. Besides, it has signed cooperation agreements with 11 institutions of higher learning in Beijing and Hebei on the training and education of volunteers with special skills. In the meantime, trainings on general Games knowledge, courtesy, languages, medical care, protocol, geography and other voluntary service skills have been provided for them in order to develop a volunteer reserve to serve future major winter sports events.



● Launch Ceremony of Volunteer Recruitment for Beijing 2022

Case study

Beijing 2022 Ski Team – HR Legacy of the Host City

The "Beijing 2022 Ski Team", established by the Human Resources Department of Beijing 2022 in collaboration with the Beijing Municipal Bureau of Sports and the Hebei Provincial Bureau of Sports, is a "reservoir" of skilled volunteers.

From its inception in October 2018 until December 2019, the Ski Team

has recruited 322 team members and provided 230 hours of field training and specialised knowledge learning, forming an "always on call and highly competent" team.

The Beijing 2022 Ski Team serves two purposes. First, members of the team will popularise knowledge about the Olympic Winter Games among the public, assist in

organising winter Sports for All activities, and spread the Olympic Spirit and sportsmanship. Second, as an ad hoc supplementary workforce during the Games, they are able to work as NTOs or skilled volunteers to engage in FOP assistance, track operations and equipment maintenance.



● Beijing 2022 Ski Team

Carrying forward the voluntary service spirit. Following the Olympic Games Beijing 2008, volunteers continue to work actively all over the city. In the past decade, the voluntary service spirit of Beijing 2008 has turned into an attitude of life for the local residents and a public practice in the city. The volunteers have proved their impressive service capacity in various areas such as major events, public services, environmental protection, and pandemic prevention and control.

In 2019, a total of 20,000 volunteers worked at the Beijing International Horticultural Expo 2019 and engaged in various expo operations and visitor services. After the COVID-19 pandemic broke out at the end of 2019, numerous voluntary service organisations and individual volunteers assisted medical workers in carrying out nucleic acid testing. Despite the cold weather, they helped maintain order, check identity cards, and register information for people waiting for testing; at local communities, they helped check the travel records of visitors and register the information of people returning to Beijing; at public places, they helped urge the public to wear masks and practise social distancing. They played an indispensable role in the fight against the virus and their selfless spirit and dedication fully reflected the spirit of voluntarism.

Since the success of the bid for

the Games in 2015, the number of volunteers registered at the "Beijing Volunteer Service Federation" platform has increased from over 3.2 million to 4.4 million. The voluntary service idea has been widely spread, the number of voluntary service organisations has grown drastically, and voluntary service campaigns have been thriving. The voluntary services for Beijing 2008 and Beijing 2022 are well connected in terms of management and training.

Promoting accessibility construction and creating an inclusive social atmosphere

Working towards the inclusion of people with impairments. Taking the preparation of the Beijing 2022

Paralympic Winter Games as an opportunity, the Central Government has issued many policies and measures¹ to improve the accessibility standards and promote accessibility construction in the whole country. For the first time, the governments of Beijing and Zhangjiakou have released a series of policies², aiming to create a good social atmosphere, in which people with impairments are respected, understood and cared for, and promote the construction of an inclusive society.

- 1 Outline of the Plan for Quickening the Process Towards Moderate Prosperity for People with Impairments in the "13th Five-Year" Period and Opinions of the State Council on Accelerating the Realisation of Moderate
- 2 Beijing 2022 Accessibility Guide, Action Plan of Beijing for Further Promoting Accessibility Construction (2019–2021), and Management Regulations of Zhangjiakou on the Construction of Accessible Facilities



● A braille sign at Jinanqiao Station, Beijing

Speeding up accessibility

construction. In early December 2019, Beijing, as the host city, launched a three-year "Special Project of City-wide Accessibility Construction", aiming to investigate the status of accessibility in the Olympic and Paralympic venues and some key areas of Beijing. By the end of December 2019, the data about 980,000 unused or occupied accessible facilities was collected and put into the "Big Data Management System for Accessibility Construction" for rectification or improvement. As of 2019, the co-host city of Zhangjiakou completed the construction and improvement of 1,047.8 metres of sidewalk for the blind, 7,207 curb ramps, 250 accessible elevators and lifts, 471 accessible toilets, 847 accessible car parks, 5,288 accessible seats at public venues, 130 low-height counters at reception and service areas, and 43 accessible hotel rooms, in addition to the availability of 38 accessibility public service websites and 7,709 accessibility signs across the city.

Enhancing the building of an inclusive society. While promoting the Beijing 2022 Paralympic Winter Games and accessibility awareness, Beijing is also vigorously developing the employment and the voluntary care service for people with impairments. The activities of the "Accessibility Promotion Day" are extensively held, with a view to creating a good atmosphere of building and sharing of accessible facilities in the whole society.



● Zhangjiakou Hospital opens low-height service windows

In October 2018, the first "Beijing 2022 Voluntary Service Base for People with Impairments" was unveiled at the Asian Games Village Community, Chaoyang District, Beijing. In May 2019, an employment training programme for people with impairments under the "Better Life Project" was launched.

Through news media such as radio, TV, Internet and newspaper, Zhangjiakou has publicised national, provincial and municipal policies for accessibility

construction, encouraging the whole society to participate in the drive to create a good atmosphere for people with impairments. The Zhangjiakou Disabled Persons' Federation launched a promotional campaign on the theme of "Contributing to the Beijing 2022 Paralympic Winter Games and Sharing Healthy Lifestyle" in local communities, aiming to spread the knowledge about the Beijing 2022 Paralympic Winter Games and Paralympic sports to the public.

Case study

The Beijing 2022 Voluntary Service Base for People with Impairments at the Asian Games Village Community

In October 2018, the first "Beijing 2022 Voluntary Service Base for People with Impairments" was unveiled at the Asian Games Village Community, Chaoyang District, Beijing, aiming to work with social charity groups to promote the concept of caring for people with impairments and encourage the local residents including those

with impairments to participate in community-based cultural activities, promote Beijing 2022, and work as volunteers for the Games. The Asian Games Village Community is located in the core area of the Games. Since Beijing won the bid, the community has organised a series of activities such as "My Appointment with

Beijing 2022" to promote the culture of Olympic and Paralympic Winter Games. Besides, the community launched vocational rehabilitation programmes for people with impairments, such as the production of woodcuts and mahogany lacquer pendants.

The "Better Life Project" was launched

In order to promote the employment for people with impairments through the staging of the Beijing 2022 Paralympic Winter Games, an employment training programme for people with impairments under the "Better Life

Project" was launched in Beijing in May 2019. This project was aimed at working with well-known domestic enterprises to create more job opportunities and provide necessary training for people with impairments, so as to provide

them with stable employment and increase their income. The project is also intended to find out the way to develop a large amount of new employment channels for the people with impairments to work with dignity.

Conclusion

As the preparation for Beijing 2022 is proceeding as planned, a number of important and sustainable legacies are coming into people's life and playing a positive role in the development of the country, the region and the host city. As the first city ever to host both the summer and winter Olympic and Paralympic Games, Beijing is ready to celebrate the Olympic and Paralympic Winter Games Beijing 2022 with the best winter sports athletes from around the world. In full cooperation with the IOC, IPC and all stakeholders, more and more Games legacies will be created, which will provide long-term benefits for the people, the host city and even the whole world. The legacies from Beijing 2022 will go down in the histories of the Olympic and Paralympic Movements.



Annex

Policy System for the Development of Winter Sports in China

Central level



- 1. Opinions on Taking Beijing 2022 as An Opportunity to Vigorously Develop Winter Sports*
- 2. Plan for Popularising Mass Winter Sports (2016–2020)*
- 3. Winter Sports Development Plan (2016–2025)*
- 4. Construction Plan for Winter Sports Venues across the Nation (2016–2022)*
- 5. Implementation Outline of "Encouraging 300 Million Chinese to Engage in Winter Sports" (2018–2022)*
- 6. National Fitness for All Programme (2016–2020)*
- 7. Outline for Building a Leading Sports Nation*
- 8. Mass Winter Sports Action Plan for People with Impairments*
- 9. Revitalisation Plan for Paralympic Winter Sports*
- 10. Action Plan for the Paralympic Winter Games*
- 11. Preparation Plan for Beijing 2022 Paralympic Winter Games (2018–2022)*

Local level



1. *Opinions of the Beijing People's Municipal Government on Accelerating the Development of Winter Sports (2016–2022) and Seven Supporting Plans*
2. *Winter Sports Development Plan for Hebei Province (2015–2022)*
3. *Implementation Opinions on Innovating the System and Institution for Winter Sports Development (Hebei Province)*
4. *Opinions on Accelerating the Development of Winter Sports (Hebei Province)*
5. *Development Plan for Olympic Winter Sports and Winter Sports of National Games (2019–2025) (Shanghai)*
6. *Action Plan of Jiangsu Province for Accelerating the Development of Winter Sports Industry*
7. *Winter Sports Development Plan for Tianjin (2016–2025)*
8. *Measures for Seizing Opportunities to Develop Winter Sports (Fujian Province)*
9. *Implementation Opinions on Accelerating the Development of Winter Sports in Hunan Province*
10. *Implementation Opinions of Jilin Province on Taking Beijing 2022 as an Opportunity to Vigorously Develop Winter Sports and Winter Sports Economy*
11. *Development Plan of the Winter Sports Industry in Jiangxi Province (2019–2025)*
12. *Medium– and Long–Term Development Plan for Winter Sports in Inner Mongolian Autonomous Region (2016–2025)*
13. *Action Plan of Beijing Disabled Persons' Federation for the Paralympic Winter Games (2018–2022)*
14. *Implementation Opinions on the Medium– and Long–Term Development Plan of Winter Sports for People with Impairments in Hebei Province (2018)*

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