



2022 International Scientific and Technological Innovation Conference on Green Development

PROGRAM

Ningxia, China
July 6, 2022

Pursuing Cooperation and Sharing in Green and Low-Carbon Development



2022

WELCOME TO NINGXIA

Pursuing Cooperation and Sharing in
Green and Low-Carbon Development



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Conference Introduction

Green development is an inevitable requirement for building the ecological civilization and high-quality modern economic system. It shows the direction of modern technological and industrial transformation and it is sure to be the most promising field of development. Especially in the digital age, green development energized by digital economy is an important means to promote the greening of traditional industries, and is as well an indispensable way for the constant upgrading of the green science and technology industry.

After the success of the first and second conferences in 2018 and 2020 respectively, the 2022 International Scientific and Technological Innovation Conference on Green Development will continue to be convened and sponsored by China Association for Science and Technology, Ministry of Ecology and Environment of the People's Republic of China and Ministry of Housing and Urban-Rural Development of the People's Republic of China. With the theme of "Pursuing Cooperation and Sharing in Green and Low-Carbon Development", the Conference will invite well-known

experts, scholars, entrepreneurs and policy makers in relevant fields at home and abroad to have exchanges and discussions on topics including green development, green energy development, green life, green hydrogen development, and green agriculture. Through reports and initiatives, the Conference will mobilize the scientific and technological workers to carry out long-term research on clean, low-carbon, safe and efficient energy, promote efficient, clean and diversified energy development, so as to achieve the target of carbon peak and carbon neutrality, and serve the comprehensive green transition of economic and social development with scientific and technological innovation achievements. The Conference will build a platform for cooperation and exchange in green and low-carbon science and technology, advocate in-depth cooperation among scientific and technological personnel across countries, facilitate openness, trust and cooperation in the international science and technology community, advance sustainable development with scientific and technological innovation, build a community with a shared future for mankind, and create a more prosperous and better world together.

- **Theme:** Pursuing Cooperation and Sharing in Green and Low-Carbon Development
- **Date:** July 6, 2022
- **Venue:** Ningxia, China
- **Organizational Structure:**

Sponsored by

China Association for Science and Technology (CAST), Ministry of Ecology and Environment, Ministry of Housing and Urban-Rural Development, and the people's Government of Ningxia Hui Autonomous Region

Organized by

Ningxia Hui Autonomous Region Science and Technology Association, Ningxia Hui Autonomous Region Department of the Ecological Environment, Ningxia Hui Department of Housing and Urban-Rural Development, and China Centre for International Science and Technology Exchange, Chinese Society for Environmental Sciences, Urban Planning Society of China, CAST New Technology Development Center Co., Ltd., five municipal people's governments of Ningxia, and Management Committee of Ningdong Energy and Chemical Industry Base

Co-organizers

Urban Health and Wellbeing Programme of International Science Council (ISC), CAST Alliance for Ecological and Environmental Sciences and Industry, CAST Alliance for Clean Energy, China Coal Society, Chinese Society for Sustainable Development, the Geographical Society of China, the Institute of Geographic Sciences and Natural Resources Research, CAS, the Institute for Sustainable Development Goals, Tsinghua University, CCTV.com, NXTV, and Science and Technology Associations of five cities of Ningxia

Brief Schedule

Opening Ceremony, Keynote Reports, and Launching Ceremony		
9:00-11:30 on July 6, 2022		
09:00-9:30	Opening Ceremony	Welcome speech and promotional introduction by the leader(s) of Ningxia Hui Autonomous Region
		Speech by the leader of CAST
		Speech by the leader of the Ministry of Ecology and Environment
		Speech by the leader of the Ministry of Housing and Urban-Rural Development
09:30-11:10	Keynote Reports	Keynote Report I Strengthening the International Cooperation to Promote Green Recovery with Concerted Efforts
		Keynote Report II Scientific and Technological Innovation and Sustainable Development
		Keynote Report III Construction of a Clean, Low-carbon, Safe, and Efficient Hydrogen Energy System
		Keynote Report IV Long-term Plan and Low-carbon Action: The Strategy and Practice of Faurecia for Carbon Neutrality
		Keynote Report V Green Innovation and Cooperation in the Era of Sustainable Development
11:10-11:30	Launching Ceremony	Release of Ningxia's needs for green energy development, green hydrogen production and green development technology
		Release of Park City Index

Thematic Forums	
14:00-17:00 on July 6, 2022	
Thematic Forum I: Thematic Forum on Green Development - Big Data Enables Ecological Protection and High-Quality Development in the Yellow River Basin	
Thematic Forum II: Thematic Forum on Green Energy Development - Building a Clean, Low-carbon, Safe and Efficient Energy System	
Thematic Forum III: Thematic Forum on Green Life - Park City, Ecology Enabling	
Thematic Forum IV: Thematic Forum on Green Hydrogen Production - Providing Important Support for the Development of Green Energy Transformation	
Thematic Forum V: Thematic Forum on Green Agriculture - Premium Geographical Products and Ecological Environmental Protection	

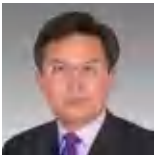
Guest Introduction



Li Bo

Vice President of the International Monetary Fund (IMF)

Mr. Li Bo was appointed as Vice President of the International Monetary Fund (IMF) on August 23, 2021, to take responsibility for IMF's work in about 90 countries and on a wide range of policy issues. Before joining the IMF, Mr. Li Bo served as the Deputy President of the People's Bank of China, and also Deputy Mayor of Chongqing, where he was in charge of financial development and supervision, foreign trade, foreign investment promotion, etc. He has played an important role in the state-owned bank reform, anti-money laundering legislation, RMB internationalization, and the construction of China's macro-prudential policy framework. Mr. Li Bo has a Master's Degree in Economics from Boston University, a PhD in Economics from Stanford University, and a PhD in Professional Law from Harvard University.



Gong Ke

Former President of World Federation of Engineering Organizations, former President of Nankai University, and Foreign Academician of the Russian Academy of Cosmonautics

Mr. Gong is a doctor of engineering, professor, doctoral supervisor, a foreign academician of the Russian Academy of Cosmonautics, and former President of the World Federation of Engineering Organizations. He has long been engaged in research of microwave, millimeter wave technology, and radio wave propagation. So far, he has made more than 10 scientific research achievements, published more than 100 academic papers, and won the Scientific and Technological Progress Award from the State Education Commission several times.



Ouyang Minggao

Academician of Chinese Academy of Sciences, Professor of Tsinghua University, and Director of State Key Laboratory of Automotive Safety and Energy in Tsinghua University

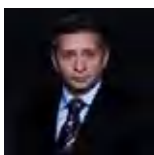
Mr. Ouyang Minggao has served as the chief expert for the national key project of energy saving and new energy vehicle technology for 15 consecutive years in 2007-2021. He has long been engaged in the research of energy saving and new energy power system. He has published more than 300 academic papers in the Science Citation Index (SCI), which have been cited more than 25,000 times. He has also been selected as a highly cited scientist in the world several times. Beside, he has obtained more than 100 authorized invention patents, and won the second prize of National Technology Invention Award (as the first inventor) twice, as well as the Technical Achievement Award from the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE), the Transportation Technology Award of the International Institute of Electronics and Electrical Engineers (IEEE), the HLHL Science and Technology Achievement Award, etc.



Francois TARDIF

President of Faurecia China

Since January 1, 2018, Mr. Francois TARDIF has been serving as the President of Faurecia China, responsible for the overall business management and operation in China. Before joining Faurecia, Mr. TARDIF worked as Vice President of Plastic Omnium Auto Exteriors in France, where he was responsible for the central functions and Asian operations of the group, and accumulated extensive experience in overall management and business operation. In addition, he has taken a number of important duties and management positions at AUTOLIV and VALEO from Sweden.



Alessandro Golombiewski Teixeira

Former President of the World Association of Investment Promotion Agencies (WAIPA), former Minister of Tourism of Brazil, and former Special Economic Advisor to the President of Brazil

Alessandro Golombiewski Teixeira ever served as Minister of Tourism of Brazil, Deputy Minister of Industry and Trade, Chairman of the Industrial Development Agency of Brazil, Chairman of the Export and Investment Promotion Agency of Brazil, Special Economic Advisor to the President of Brazil, and President of the World Association of Investment Promotion Agencies. He has worked as a board member of the National Development Bank of Brazil for 12 years. In 2008, Professor Alessandro Golombiewski Teixeira was selected as "Latin American Person of the Year" by the Financial Times.



Duan Jin

Vice Chairman of Urban Planning Society of China, Academician of Chinese Academy of Sciences and Professor of Southeast University

He has been long engaged in theoretical research on spatial development and planning. He initiated the theory of urban space development, put forward the "spatial gene" and constructed the analysis and inheritance technology, which helped tackle the technical problems of natural environment destruction and history & culture rupture in contemporary urban construction. His research results have been adopted by many national industry technical regulations, guidelines and instructions. He led the compilation of the national industry standard Urban Design Guidelines for Territorial Planning (TD/T1065-2021). He has won 5 first prizes of the National Excellent Planning and Design Award, 2 first prizes of the Provincial and Ministerial Science and Technology Progress Award, the Excellence Design Award of International Society of City and Regional Planners (ISOCARP), the Best City Design Award of the Leading European Architects Forum (LEAF), etc.

Thematic Forum I

Guest Introduction



Chen Songqi

Chair Professor of Peking University

Prof. Chen is engaged in the development of business statistics and econometrics disciplines and the building of a statistics research team at Peking University.



Yong Xue

Expert in quantitative remote sensing and Big Earth Data

Academician of the International Eurasian Academy of Sciences, a corresponding academician of the International Academy of Astronautics, a scholar of national High-level Talents



Chen Yan

Senior Engineer of the Environmental Planning Institute, Ministry of Ecology and Environment

Director of water environment simulation and informatics office, the deputy director of the National Key Laboratory of environmental protection



Song Weiwei

Ph.D. of environmental science

Professorate senior engineer, master tutor, and director of environmental big data research laboratory in South China Institute of Environmental Science, MEE.



Guangfeng Lv

Senior Engineer of the Engineering Innovation Center of SUSTech (Beijing)
Member of the Special Committee of Ecological and Environmental Big Data.

Thematic Forum II

Guest Introduction



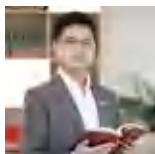
Peng Suping

Academician and Professor of Chinese Academy of Engineering



Zhang Xilai

Deputy Director and Senior Engineer of the Fuel Division of the Boiler and Environmental Protection Department of Xi'an Thermal Power Research Institute Co., Ltd.



Ding Lu

Associate Professor of the Institute of Clean Coal Technology, East China University of Science and Technology



Shen Bo

Researcher of Lawrence Berkeley National Laboratory, USA

Thematic Forum III

Guest Introduction



Shi Nan

Executive Vice President and Secretary General of Urban Planning Society of China, and Vice President of International Society of City and Regional Planners



Duan Jin

Vice Chairman of Urban Planning Society of China, Academician of Chinese Academy of Sciences, Master of National Engineering Survey and Design, and Professor of Southeast University



Ye Yumin

Deputy Director of Planning and Implementation Academic Committee and Managing Director of Urban Planning Society of China, and Professor of School of Public Administration and Policy, Renmin University of China



He Fang

Member of Urban Ecological Planning Academic Committee of Urban Planning Society of China, Chief Designer of Shenzhen Meidao Landscape Architecture & Urban Planning & Design Institute, and Master of National Engineering Survey and Design



Wang Xiaoqi

Director of Urban Planning Society of China, and President of Chengdu Institute of Planning & Design



Yuan Xin

Director of Housing and Community Planning Academic Committee and Managing Director of Urban Planning Society of China, and President of Beijing Tsinghua Tongheng Urban Planning and Design Institute



Wang Shusheng

Vice Chairman of Urban Planning Society of China, and President of Xi'an University of Architecture and Technology

Thematic Forum IV

Guest Introduction



Ching Chuen CHAN

Academician of the Chinese Academy of Engineering, Fellow of the Royal Academy of Engineering, U.K., and President of World Electric Vehicle Association



Peng Suping

Academician and Professor of Chinese Academy of Engineering



Sun Lili

Academician of the Chinese Academy of Engineering, Secretary of the Party Committee and Chairman of Sinopec Engineering (Group) Co., Ltd., and Secretary of the Party Committee and Executive Director of Sinopec Engineering Incorporation



Zhao Rui

Director of Hydrogen Energy Industry Development Center of Management Committee of Ningdong Energy and Chemical Industry Base



Han Minfang

Professor of Tsinghua University



He Guangli

Deputy Director/Senior Engineer of the New Energy Technology Center, National Institute of Clean and Low-Carbon Energy, China Energy Investment Corporation



Yu Zhuoping

Professor of Tongji University

Thematic Forum V

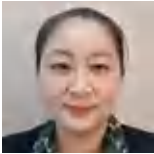
Guest Introduction



Liu Chuang

Deputy Director of Academic Journal Center

Institute of Geographic Sciences and Natural Resources Research, CAS, Secretary General of the Working Committee on Geographical Big Data, the Geographical Society of China, and Member of the Consultative Committee on Information Technology, China Association for Science and Technology



Xuan Li

Senior Policy Officer at Food and Agriculture of Food and Agriculture Organization (FAO) Regional Office for Asia and the Pacific (RAP), Bangkok.

Her academic credentials include a Ph.D. in Economics (University of St. Gallen, Switzerland) and a second Ph.D. in International Law (University of Bern, Switzerland).



Mirnuh Ismayilov

Member of Azerbaijan Geographical Society



Yu Jiqun

Member of standing Committee of CPC Jilin Municipal Committee and Secretary of CPC Panshi Municipal Committee.

United and led Panshi to deeply practice Xi Jinping's thought on ecological civilization, adhere to the overall work idea of "red leading, green development", and walk out a road of green agricultural development with characteristics.



Wu Genghong

Marketing Director of Ningxia Yanchi Tan Sheep Industry Group Co., Ltd., and Dean of Yanchi Tan Sheep Industry Research Institute

Agenda

Opening Ceremony, Keynote Reports, and Launching Ceremony

9:00-11:30 on July 6, 2022

Moderator: Wang Guan, an anchor from CCTV			
09:00-09:30	Opening Ceremony	Welcome speech and promotional introduction by the leader(s) of Ningxia Hui Autonomous Region	
		Speech by the leader of CAST	
		Speech by the leader of the Ministry of Ecology and Environment	
		Speech by the leader of the Ministry of Housing and Urban-Rural Development	
09:30-11:10	Keynote Reports	Keynote Report I Strengthening the International Cooperation to Promote Green Recovery with Concerted Efforts	Li Bo Vice President of International Monetary Fund (IMF)
		Keynote Report II Scientific and Technological Innovation and Sustainable Development	Gong Ke Former President of World Federation of Engineering Organizations, former President of Nankai University, and Foreign Academician of the Russian Academy of Cosmonautics
		Keynote Report III Construction of a Clean, Low-carbon, Safe, and Efficient Hydrogen Energy System	Ouyang Minggao Academician of Chinese Academy of Sciences, Professor of Tsinghua University, and Director of State Key Laboratory of Automotive Safety and Energy in Tsinghua University
		Keynote Report IV Long-term Plan and Low-carbon Action: The Strategy and Practice of Faurecia for Carbon	Francois TARDIF President of Faurecia China
		Keynote Report V Green Innovation and Cooperation in the Era of Sustainable Development	Alessandro Golombiewski Teixeira Former President of the World Association of Investment Promotion Agencies (WAIPA), former Minister of Tourism of Brazil, and former Special Economic Advisor to the President of Brazil
11:10-11:30	Launching Ceremony	Release of Ningxia's needs for green energy development, green hydrogen production and green development technology	Science and Technology Department of Ningxia
		Release of Park City Index	Duan Jin Vice Chairman of Urban Planning Society of China, Academician of Chinese Academy of Sciences and Professor of Southeast University

Thematic Forum I

Thematic Forum on Green Development - Big Data Enables Ecological Protection and High-quality Development in the Yellow River Basin

I. Theme

Workshop on Green Development - Big Data Enables Ecological Protection and High-quality Development in the Yellow River Basin

II. Organizational Structure

Guided by: China Association for Science and Technology (CAST)

Sponsored by: Scientific and Technological Innovation Department of CAST, Ningxia Hui Autonomous Region Association for Science and Technology, CAST New Technology Development Center Co., Ltd., Chinese Society for Environmental Sciences, and Yinchuan Municipal People's Government

Organized by: Ecological Environment Big Data Committee of the Chinese Society for Environmental Sciences, Yinchuan Association for Science and Technology, Yinchuan Bureau of Ecology and Environment, and Yinchuan Bureau of Science and Technology

Co-organized by: Green Low-carbon Environment Protection Branch of China Association of Inventions

Agenda

Opening Ceremony Moderator: Chen Yongmei, Director of Popular Science Department of the Chinese Society for Environmental Sciences

Opening Ceremony	14:00-14:20	Speech by the leader of the Chinese Society for Environmental Sciences
		Liu Jiafeng, Deputy Mayor of Yinchuan Municipal People's Government
		Promotional video of Yinchuan
Keynote Report Moderator: Ren Guanping, Advisor of the Chinese Society for Environmental Sciences		
Keynote Report	14:20-17:15	Keynote Report I: Big Data Technology Helps Ecological Environment Governance Speaker: Chen Songqi Academician of Chinese Academy of Sciences and Professor of Peking University
		Keynote Report II: Big Earth Data and Remote Sensing of Ecological Environment Speaker: Xue Yong Member of the International Eurasian Academy of Sciences (IEAS), and Director of the Institute of Energy and Environmental Remote Sensing Big Data (IERSD) and Second-grade Professor of the School of Environment and Spatial Informatics, China University of Mining and Technology
		Keynote report III: The Application of Big Data in the Precise Pollution Control of Watersheds in the New Information Age Speaker: Chen Yan Senior Engineer of the Environmental Planning Institute, Ministry of Ecology and Environment
		Keynote Report IV: Intelligent Judgment of Water Environment Governance Situation Based on the "Three Lines, One List" and Big Data Coupling Speaker: Song Weiwei Director of Environmental Spatial Information Application Research Office, South China Institute of Environmental Science, Ministry of Ecology and Environment
		Keynote Report V: Case Sharing and Discussion on the Application of Big Data in Environmental Governance Speaker: Lv Guangfeng Senior Consultant of Engineering Technology Innovation Center, Southern University of Science and Technology
Release	17:15-17:20	Release of Yinchuan's needs for green energy development, green hydrogen production and green development technology

Thematic Forum II

Thematic Forum on Green Energy Development - Building a Clean, Low-carbon, Safe and Efficient Energy System

I. Theme

Green Energy Development - Building a Clean, Low-carbon, Safe and Efficient Energy System

II. Organizational Structure

Guided by: China Association for Science and Technology (CAST)

Sponsored by: Ningxia Hui Autonomous Region Association for Science and Technology, China Centre for International Science and Technology Exchange, CAST New Technology Development Center Co., Ltd., China Coal Society, and Shizuishan Municipal People's Government

Organized by: Shizuishan Special New Energy Industry Development Working Group, Shizuishan Association for Science and Technology, Shizuishan Development and Reform Commission, and Ningxia Institute of Science and Technology

Co-organized by: Publicity Department of the CPC Shizuishan Municipal Committee, Shizuishan Bureau of Industry and Information Technology, Shizuishan Bureau of Science and Technology, Shizuishan Bureau of Finance, Shizuishan Bureau of Commerce, Shizuishan Bureau of Investment Promotion, Shizuishan Health Commission, and Shizuishan News Media Center

Agenda

Moderator: Wang Lei, Secretary General of China Coal Society

Opening Ceremony	9:00-9:20	Wang Wei, Deputy Secretary of CPC Shizuishan Municipal Committee and Mayor of Shizuishan Municipal People's Government
Keynote Reports	9:20-9:40	Green Development - Building a Clean, Low-Carbon, Safe and Efficient Energy System, Construct a Comprehensive National Photovoltaic Industry Demonstration Base Speaker: Wang Yuxiang, Deputy Mayor of Shizuishan Municipal People's Government
	9:40-10:00	Keynote report: Research on China's Hydrogen Energy and Fuel Cell Development Strategy Speaker: Peng Suping, Academician and Professor of Chinese Academy of Engineering
	10:00-10:20	Keynote report: Flexibility Transformation and Operation Technology of Power Station Boilers Under the Premises of Photovoltaic and Other New Energy Consumption Speaker: Zhang Xilai, Deputy Director and Senior Engineer of the Fuel Division of the Boiler and Environmental Protection Department of Xi'an Thermal Power Research Institute Co., Ltd.
	10:20-10:40	Keynote report: From Fossil Energy to Photovoltaic - Clean and Efficient Development of Energy Speaker: Ding Lu, Associate Professor of the Institute of Clean Coal Technology, East China University of Science and Technology
	10:40-11:00	Keynote report: Introduction of International Experience in Investment in Promoting Energy Transformation and New Energy (Photovoltaic) Development Speaker: Shen Bo, Researcher of Lawrence Berkeley National Laboratory, USA

Thematic Forum III Thematic Forum on Green Life - Park City, Ecology Enabling

I. Theme

Green Life - Park City, Ecology Enabling

II. Organizational Structure

Sponsored by: Ningxia Hui Autonomous Region Association for Science and Technology, Urban Planning Society of China, Guyuan Municipal People's Government, and Zhongwei Municipal People's Government

Guided by: China Association for Science and Technology (CAST)

Organized by: Guyuan Association for Science and Technology, Zhongwei Association for Science and Technology

Agenda

Moderator: Shi Nan (Executive Vice President and Secretary General of Urban Planning Society of China, and Vice President of International Society of City and Regional Planners)

Promotional video for opening		Promotional videos of Guyuan City and Zhongwei City
Opening Ceremony	14:00-14:20	Shi Nan, Executive Vice President and Secretary General of Urban Planning Society of China, and Vice President of International Society of City and Regional Planners
		Zhang Xuebin, Deputy Mayor of Guyuan Municipal People's Government
		Guo Aidi, Member of the Standing Committee of CPC Zhongwei Municipal Committee, Member of the Leading Party Members Group and Deputy Mayor of the Zhongwei Municipal People's Government, and Secretary of the Party Working Committee of Ningxia Zhongwei Industrial Park
Keynote Reports	14:20-14:50	Topic: Exploration of Park City Index Research and Application Duan Jin (Vice Chairman of Urban Planning Society of China, Academician of Chinese Academy of Sciences, Master of National Engineering Survey and Design, and Professor of Southeast University)
	14:50-15:10	Topic: Evaluation of Modern Park City Governance Ye Yumin (Deputy Director of Planning and Implementation Academic Committee and Managing Director of Urban Planning Society of China, and Professor of School of Public Administration and Policy, Renmin University of China)
	15:10-15:30	Topic: Harmonious Coexistence, Building a Beautiful Home Together He Fang (Member of Urban Ecological Planning Academic Committee of Urban Planning Society of China, Chief Designer of Shenzhen Meidao Landscape Architecture & Urban Planning & Design Institute, and Master of National Engineering Survey and Design)
	15:30-15:50	Topic: Research on the Measurement Methods of Quality Life - Based on the Project of Park City Index Wang Xiaoqi (Director of Urban Planning Society of China, and President of Chengdu Institute of Planning & Design)
	15:50-16:10	Topic: Low-carbon Development, Ecology Enabling Yuan Xin (Director of Housing and Community Planning Academic Committee and Managing Director of Urban Planning Society of China, and President of Beijing Tsinghua Tongheng Urban Planning and Design Institute)
	16:10-16:30	Topic: Urban Cultural & Geographical System and Cultural & Geographical Planning Wang Shusheng (Vice Chairman of Urban Planning Society of China, and President of Xi'an University of Architecture and Technology)
	16:30-16:50	Conference conclusion

Thematic Forum IV

Thematic Forum on Green Hydrogen Production - Providing Important Support for the Development of Green Energy Transformation

I. Theme

Green Hydrogen Production - Providing Important Support for the Development of Green Energy Transformation

II. Organizational Structure

Guided by: China Association for Science and Technology (CAST)

Sponsored by: Ningxia Hui Autonomous Region Association for Science and Technology, CAST New Technology Development Center Co., Ltd., China Energy Research Society, and Management Committee of Ningdong Energy and Chemical Industry Base

Agenda

Moderator: Sun Zhengyun, Vice Chairman and Secretary General of China Energy Research Society

Speech	14:00-14:10	China Energy Research Society	Shi Yubo Chairman
		Management Committee of Ningdong Energy and Chemical Industry Base	Zhang Wei Deputy Secretary of the Party Working Committee and Deputy Director of the Management Committee of Ningdong Energy and Chemical Industry Base
Special Report	14:10-14:40	The Unique Role of Hydrogen Energy as Green Energy in the Integration of "4 Networks and 4 Flows"	Ching Chuen CHAN Academician of the Chinese Academy of Engineering, Fellow of the Royal Academy of Engineering, U.K., and President of World Electric Vehicle Association
	14:40-15:10	Research on China's Hydrogen Energy and Fuel Cell Development Strategy	Peng Suping Academician of Chinese Academy of Engineering
	15:10-15:40	Status and Prospect of Large-scale Low Energy Consumption Hydrogen Liquefaction Technology Development	Sun Lili Academician of the Chinese Academy of Engineering, Secretary of the Party Committee and Chairman of Sinopec Engineering (Group) Co., Ltd., and Secretary of the Party Committee and Executive Director of Sinopec
Keynote Reports	15:40-16:00	Report on the Development of Hydrogen Energy Industry in Ningdong Energy and Chemical Industry Base	Zhao Rui Director of Hydrogen Energy Industry Development Center of Management Committee of Ningdong Energy and Chemical Industry Base
	16:00-16:20	Progress and Application Prospect of High-temperature Electrolysis Hydrogen Production under the Vision of Carbon Neutrality	Han Minfang Professor of Tsinghua University
	16:20-16:40	Analysis and Prospect of Hydrogen Refueling Technology	He Guangli Deputy Director/Senior Engineer of the New Energy Technology Center, National Institute of Clean and Low- Carbon Energy, China Energy Investment Corporation
	16:40-17:00	Opportunities and Challenges for the Development of Fuel Cell Vehicles in China under the "Carbon Peaking and Carbon Neutrality" Goals	Yu Zhuoping Professor of Tongji University

Thematic Forum V

Thematic Forum on Green Agriculture - Premium Geographical Products and Ecological Environment Protection

I. Theme

Green Agriculture - Premium Geographical Products (Geographical Identifications, Characteristics and Traditional Products) and Ecological Environment Protection

II. Organizational Structure

Guided by: China Association for Science and Technology (CAST)

Sponsored by: Ningxia Hui Autonomous Region Association for Science and Technology, Geographical Society of China, Institute of Geographic Sciences and Natural Resources Research, CAS, Wuzhong Municipal People's Government, and Ningxia University

Organized by: Wuzhong Association for Science and Technology, Wuzhong Bureau of Agriculture and Rural Affairs, and Wuzhong Bureau of Rural Revitalization

Agenda

Moderator: Zhang Guoyou, Vice Chairman and Secretary General of the Geographical Society of China

Speech	9:00-9:20	Fu Bojie Chief Supervisor of the Geographical Society of China, and Academician of the Chinese Academy of Sciences	
		Ma Tongsong Deputy Mayor of Wuzhong Municipal People's Government, Ningxia Hui Autonomous Region	
Promotional	9:20-9:35	Promotional Video of Wuzhong City: Seek Future in Wuzhong	
Keynote Reports	9:35-10:40	Topic: "Eco-environmental Protection and Sustainable Development of Premium Geographical Products": Case Products and Intellectual Property Protection	Liu Chuang Secretary General of the Working Committee on Geographical Big Data, the Geographical Society of China, and Researcher of the Institute of Geographic Sciences and Natural Resources Research, CAS
		Topic: Implementation of the UN Food and Agriculture Organization's "One Country, One Product" Program in the Asia-Pacific Region	Li Xuan Policy Officer and Project Manager of "One Country, One Product", FAO Regional Office for Asia and the Pacific
		Topic: Agro-ecological Conditions of Pomegranate Cultivation in Azerbaijan and Sustainable Production of Pomegranate Juice	Dr. Mirjuh Ismayilov Chairman of Azerbaijani Geographical Society
Cases	10:40-11:25	Topic: Rock Green Development Based on Geographical Diversity	Yu Jiqun Member of the Standing Committee of the CPC Jilin Municipal Committee, and Secretary of the CPC
		Topic: Traceability System and Management Standardization of Dry Grassland Case Products - Yanchi Tan Sheep in Huamachi Town	Wu Genghong Manager of the Sales Department of Ningxia Yanchi Tan Sheep Group
Release	11:25-11:30	Wuzhong's needs for green agriculture technology	
Conference conclusion		Liao Xiaohan Director of the Working Committee on Geographical Big Data, the Geographical Society of China	

Introduction to Ningxia Hui Autonomous Region

Ningxia Hui Autonomous Region ("Ning" for short in Chinese) covers a total land area of 66,400 square kilometers and has jurisdiction over 5 prefecture-level cities and 22 counties (cities/districts). As of the end of 2019, its permanent resident population reached 7.2 million, of which Hui people accounted for 35%. It is the largest area inhabited by Hui People in China, with jurisdiction over 5 prefecture-level cities and 22 counties (cities/districts).

Natural conditions: The whole territory of Ningxia is over 1,000 meters above sea level, with a high-south and low-north terrain at a drop of nearly 1,000 meters. It has a typical continental climate with a lot of wind and sand in spring, only a few scorching days in summer and a long cold winter, with an average annual precipitation of 300 mm. The area irrigated by Yellow River in its north is rich in fertile soil, known as "Oasis beyond the Great Wall". The arid zone in central Ningxia is dry with very little rainfall, making it an area unfit for living. Hills and ravines are widely distributed in the mountainous area in southern Ningxia, and it is one of the national poverty-stricken areas.

History: Ningxia is one of the birthplaces of the ancient civilization of the Chinese nation. Human beings lived and thrived here as early as 30,000 years ago in the Paleolithic Age. In the 3rd century BC, Qin Shihuang unified the six states, established Beidi County in Ningxia, dispatched troops to reclaim the land, built water projects, and started the history of diverting the Yellow River for irrigation. In 1038 AD, Li Yuanhao, leader of the Dangxiang clan, established the Great Xia Kingdom with Ningxia as the center, known as Xixia (Western Xia) in history, and with Xingqing (now Yinchuan City) as its capital. After the troops from Yuan Kingdom conquered Western Xia, Ningxia Road was constructed, and that was where the name Ningxia originated. In the Ming Dynasty, Ningxia Wei was established ("Wei" was a military administration system established in Ming Dynasty which is similar to the construction corps in China today), and in the Qing Dynasty, Ningxia Prefecture was established. Ningxia Province was established in 1929. After the founding of People's Republic of China, Ningxia Province was revoked and merged into Gansu in 1954. On October 25, 1958, the Ningxia Hui Autonomous Region was established.

Advantage in agriculture: There are 1.29 million hectares of arable land and 2.1 million hectares of grasslands in Ningxia. It is one of the 12 commercial grain production bases in China. It is also hailed as the "Hometown of Wolfberry", "Hometown of Tan Sheep", "Hometown of Licorice", and "Hometown of Potato", as well as an important production base for beef, mutton, milk, and raw materials for traditional Chinese medicines in China. The area at the eastern foot of Helan Mountain is

recognized as the "Star-level Golden Area" of wine-producing industry.

Advantage in energy: Ningxia is especially advantaged in industry. Located in the "Golden Triangle" area of energy and chemical among Shaanxi, Gansu and Inner Mongolia, it is rich in resources. More than 50 kinds of minerals have been found in the region, including 31.9 billion tons of coal reserves and 200 billion tons of prospective reserves, ranking 6th in China. Its installed power capacity has reached 47.15 million kilowatts, of which new energy installed capacity is 18.28 million kilowatts. Ningdong Energy and Chemical Industry Base is listed as one of the 14 large coal bases in China, with a modern coal chemical production capacity of about 15 million tons and an olefin production capacity of 2.6 million tons. It has built the world's largest single-scale coal-to-liquids project of 4 million tons, and formed an industry cluster of coal-to-liquids, coal-to-olefin, and fine chemical engineering.

Advantage in tourism resources: Ningxia is known as the "miniature bonsai" of China's tourism landscape, with Helan Mountain and Liupan Mountain located in its north and south respectively. The Yellow River runs through the Ningxia Plain. There are four AAAA-level scenic spot located in Ningxia including Shahu Lake, Shapotou, Zhenbeibao and Shuidonggou. Its Xixia Royal Mausoleum and Helan Mountain rock paintings are well-known both at home and abroad. It is the second provincial-level full-area tourism demonstration spot in China. Its tourism brand of "Let's go to Ningxia for a spiritual vacation" is becoming more and more popular, and it was rated as one of the 46 must-see tourist destinations in world by New York Times.

Achievements in development: In 2020, its regional GDP reached 392.1 billion yuan, an increase of 3.9%; the per capita disposable income of all residents in Ningxia reached 25,735 yuan, an increase of 5.4% over the previous year. The per capita disposable income of urban residents was 35,720 yuan, an increase of 4.1%. The per capita disposable income of rural residents reached 13,889 yuan, an increase of 8%. The 4-million-ton coal-to-liquids project with the largest monomer scale in the world and a localization rate of over 98% has started its qualified oil production after its successful trial operation. Its modern textile industry is transforming to fine processing, and the best domestic textile enterprises and the highest-end textile equipment in China have gathered in Ningxia, forming a complete textile industry chain. The output value of the grape industry is nearly 26.1 billion yuan. A breakthrough has been made in the construction of the Cloud Base in western Ningxia, and the 4×100G backbone network of the three major operators including China Telecom, China Mobile and China Unicom has been completed and put into operation.



Introduction to Yinchuan City

Yinchuan is the capital of Ningxia Hui Autonomous Region. It has jurisdiction over 3 districts, 2 counties and 1 city, covering an area of 9,025.38 square kilometers. The city has a total population of 2.882 million, of which the Hui ethnic population is 673,000. It has been successively awarded with honorary titles such as a National Water-Saving City, a National Sanitary City, a National Garden City, a Happiest City in China, a National Environmental Protection Model City. It has won awards of the world's first batch of "International Wetland City", "Asian Urban Landscape Award" and "China Habitat Environment Award", and won the National Sanitary City for consecutive years, known as "Oasis beyond the Great Wall". In 2021, it was awarded as the innovation hub city of "Innovation China".

Yinchuan is an important node city of the "Belt and Road" Initiative and an important window for China to open to the west. It is the permanent venue of the China-Arab States Expo, and is also an important passage connecting northeast and north China to northwest China and even Central Asia and the Middle East. There were human activities in Yinchuan as early as 30,000 years ago, and the Shuidonggou Site has far-reaching influence. During the Qin and Han Dynasties, canals and fortifications were built in this area, making it an important frontier garrison in the following dynasties. Yellow River culture and Silk Road culture in Yinchuan blended

together, making it one of the 130 famous historical and cultural cities in China. Yinchuan is rich in energy and tourism resources. It is a large coal base of China and a thermal power base for west-to-east power transmission. There are 28 tourist attractions and scenic spots above A-level and 2 national AAAAA-level tourist attractions. It is the only national tourism and leisure demonstration city in northwest China and one of the most ecologically competitive cities in China.

In 2021, the GDP of Yinchuan City reached 226.295 billion yuan, an increase of 6.3% over that in the previous year, accounting for 50.04% of the whole area. Its general public budget revenue reached 17.119 billion yuan, a year-on-year increase of 8.9%. The social R&D capacity rate reached 1.61%, and the per capita disposable income of urban and rural residents increased by 8% and 9% respectively. Yinchuan adheres to the principle of "focusing on the characteristic development of the primary industry, the extensive area of the secondary industry, the transformation of the tertiary industry, and the overall improvement", and strives to build a modern industrial system led by digital economy, guided by "new materials, new energy and new food" industries, and driven by modern service industry, and accelerate the construction of a pilot city for ecological protection and high-quality development in the Yellow River Basin.



Introduction to Wuzhong City, Ningxia

Wuzhong is located on the bank of the Yellow River, known as "Land of Plenty, Oasis beyond the Great Wall". It covers an area of 21,400 square kilometers with a jurisdiction of 2 districts, 2 counties and 1 city. There are 28 ethnic groups including Han, Hui, Manchu and Mongolian. It is an important commodity grain base, a golden milk source base, a wine grape industry base, the Hometown of Tan Sheep and the Hometown of Licorice in China. It has successively won honorary titles such as National Garden City, National Sanitary City, National Unity and Progress Demonstration City, and National Excellent City for Overall Social Security Management.

Wuzhong is a city of rich resources and rising industry. More than 30 kinds of mineral resources have been discovered in the area, with preliminary proven oil reserves of 35 million tons and prospective reserves of 250 million tons. It has natural gas reserves of 800 billion cubic meters, coal reserves of 7.5 billion tons, gypsum reserves of 2.8 billion tons which account for 98% of the total proven reserves of Ningxia, and prospective reserves of 12.7 billion tons. It has achieved a total of 9.56 million kilowatts capacity of wind and photovoltaic new energy projects, including those with successfully access to grid and those still under construction, making it an important energy base in Ningxia.

Wuzhong is a city with unique climate and well-developed agriculture. The city's high-quality grain planting area remains at a stable coverage of more than 1 million mu. Its melon and vegetable planting covers an area of 580,000 mu, and it is the birthplace of China's top ten delicious rice and the vegetable base for Hong Kong. There is 170,000 mu of organic wolfberries in this area, and its wolfberry products have passed the organic certification of the European Union, the United States and Japan. There are 200,000 dairy cows in stock with a scaled breeding rate of 98%. The output value of Yili (Wuzhong) accounts for 1/10 of Yili Group.

With a planting area of 234,000 mu of wine grapes, more than 100 wines from Wuzhong have won 65 gold medals at different international wine competitions. Tan Sheep from Yanchi in Wuzhong has become a material for state-level banquets such as the G20, the BRICS 8 Summit, and the "SCO Summit".

Wuzhong is a city with active business and unique characteristics. The Yellow River flows through its jurisdiction at a length of 69 kilometers. Its tour spots such as Qingtongxia Yellow River Grand Canyon, Yanzhou Historical and Cultural Ancient City, Qin and Han Ancient Canal, Haba Lake, Luoshan National Nature Reserve, etc., integrate history, culture, human landscape and natural scenery, which form unique tourism landscapes in western China. All five counties (cities, districts) under its jurisdiction are listed as pilot projects for the full-area tourism demonstrations spots in the autonomous region. Wuzhong is also the hometown of characteristic delicacies, with its special morning tea is ready for guests from all over the world every day and its delicious dishes such as mutton organs and hand-grabbed mutton of high popularity. The slogan "Travel in Ningxia, Eat in Wuzhong" enjoys a rising fame and popularity.

Wuzhong is livable and business-friendly city with high ecological civilization. With vigorously implementation of ecological zone strategy, it is experiencing a full improvement of urban green coverage rate. Rivers and lakes are networked in this area, and it is characterized with a city in waters and beautiful landscapes in the city. It experiences a steady development of education, continuous progress of medical and health care, improvement of social security, and flourishing of new forms of business such as e-commerce, recreational tourism, health care, nursing service, modern logistics, finance and insurance.



Introduction to Guyuan City

Guyuan, known as Dayuan, Gaoping, Xiaoguan, Yuanzhou in ancient times, is referred to as "Gu" for short in Chinese. It is an old revolutionary base and an ethnic area, which has been highly concerned by the CPC Central Committee and deeply concerned by General Secretary Xi Jinping. In July 2002, it was upgraded as a prefectural city. It covers a land area of 10,500 square kilometers with jurisdiction over 1 district and 4 counties (Yuanzhou District, Xiji County, Longde County, Jingyuan County, and Pengyang County), 62 townships (towns), 3 sub-districts, and a population of 1.142 million people of 39 ethnic groups. In the first half of 2021, the city's GDP increased by 9.0%, with an average growth rate of 6.99% in 2021 and 2022. Its fixed asset investment increased by 9.1%, with an average growth rate of 0.1% in 2021 and 2022. Its total retails of consumer goods increased by 12.6%, with an average growth rate of 2.3% in 2021 and 2022. The per capita disposable income of urban and rural residents increased by 13.7% and 14.8% respectively, with an average growth rate of 8.0% and 10.7% in 2021 and 2022. Its main indicators were achieved higher than 40% of the expectations, and it realized "More than half tasks fulfilled in half time", which laid a solid foundation for the new journey of the "14th Five-Year Plan".

Guyuan is a famous historical and cultural city. During the Warring States Period, King Qin Zhao established Wuzhi County here, which has a history of more than 2,300 years. It is an important economic center, a transportation hub, an important military town in history, and a must-passage of northern route of the eastern section of the Silk Road. 7 different dynasties established their jurisdiction here. It is one of the birthplaces of ancient cultures, with the "Ma's Kilt Culture" and "Qi Family Culture" distributed in the area that can be traced all the way back to 4,000 years ago. It has won honorary titles such as "Hometown of Chinese Literature", "Hometown of Chinese Calligraphy" and "Hometown of Chinese

Poetry". Guyuan is a land rich in red revolution resources. Red revolutionary events deeply imprinted in the history of Guyuan include the glorious poem Qingtingle Liupan Mountain widely known at home and abroad, the great military reunion at Jiangtaobao recorded in history books, the significant "Night Talk at Shanjia Market", the historic battle at Qingshizui, and the great call for Long March at Jiangtaobao. Guyuan is an ecological barrier in western China, and Liupan Mountain is an important node of the national ecological security "Two Barriers and Three Belts", an important germplasm resource gene bank in northwest China, and also the birthplace of the Jinghe River, Hulu River and Qingshui River which are tributaries of the Yellow River. It is known as a dazzling green pearl on the Loess Plateau. It is awarded the title of "China Green Eco-tourism City". Guyuan is a famous summer resort. Liupan Mountain is an accumulation area of top eco-tourism resources in Ningxia and even northwest China, including red revolutionary resorts, grotto geoparks, historical and cultural sites, and rural folk culture. It is a characteristic tourist destination on the ancient Silk Road and the Long March route.

Guyuan features a climate of clear sky, light clouds, and pleasant temperature. In terms of the seasonal difference, it is characterized with beautiful flower sea in spring, cool wind in summer, magnificent and colorful forest in autumn, and picturesque landscapes in winter. Guyuan is a green food product base. With cool climate and sharp temperature difference between day and night, the natural environment of clean air, rich, soil, and clean water attributes to the construction of a production bases for green food in western China such as potatoes, cool vegetables, and cattle, known as China's "Hometown of Cool Vegetables", "Hometown of Seed Potato" and "Hometown of Liupan Mountain Cattle".



Introduction to Zhongwei City

Known as a water city in desert, capital of Manganese, and hometown of wolfberry, Zhongwei is located in the central and western part of Ningxia at the junction of the three provinces (regions) of Ningxia, Gansu and Inner Mongolia. It is the only city in China still using the jurisdiction name of "Wei", an ancient military administration system similar to the construction corps in China today. It covers an area of 17,000 square kilometers with jurisdiction over Shapotou District, Zhongning County, Haiyuan County and Haixing Development Zone, and a permanent population of 1.2208 million. Zhongwei is the first artesian irrigation city in the middle and upper reaches of the Yellow River, a bright pearl along the city belt of the Yellow River. It has beautiful landscapes, rich products, and well-developed industries, an inclusive and vigorous city known as "Oasis beyond the Great Wall" and "Richest City of Ningxia, the Richest Region Along Yellow River" in ancient times. It enjoys the reputation of "Hometown of Chinese Wolfberry", "China's Selenium Valley Beyond Great Wall", "Top

100 Charming Cities with Chinese Characteristics", "National Sanitary City", "National Garden City", "National Double Support Model City", "National Ethnic Unity and Progress Demonstration City", "National Top 10 Ecological Civilization Construction Demonstration City" and "National Free Blood Donation Model City". In 2020, the city's regional GDP reached 44.032 billion yuan, and the local general public budget revenue reached 2.086 billion yuan. The per capita disposable income of urban residents reached 30,479 yuan, and the per capita disposable income of rural residents reached 12,123 yuan.



Introduction to Ningdong Energy and Chemical Industry Base

Ningdong Energy and Chemical Industry Base is a national key development zone approved by the State Council, with a total planned area of 3,500 square kilometers (a core area of 800 square kilometers). Since its development and construction in 2003, it has been successively identified as an important national large-scale coal production base, a "West-to-East Power Transmission" thermal power base, a coal chemical industry base, a national industrial transformation and upgrading demonstration zone, a modern coal chemical industry demonstration zone, a green industry park, a new industrialization demonstration base and foreign trade transformation and upgrading base, and it forms a "Golden Triangle" of national energy together with Yulin in Shaanxi and Ordos in Inner Mongolia. When General Secretary Xi Jinping inspected Ningxia on July 19, 2016, he gave the call that "socialism is all about actions" at Ningdong Energy and Chemical Industry Base.

Ningdong Energy and Chemical Industry Base closely follows the instruction of General Secretary Xi Jinping's important speech on his inspection of Ningxia, especially his earnest entrustment in Ningdong and takes it as the motivation for hard work and the direction of Ningdong development, where it strives to answer the great call that "socialism is all about actions". It strives to serve the national strategy through full consideration of the whole area, promote the economy of Ningxia, and form a complementary and coordinated industrial pattern including coal-to-liquids, coal-based olefins, new materials, hydrogen energy, fine chemical engineering, electronic materials, special chemicals, energy conservation and environmental protection. It strives to achieve the goal of "producing another economic aggregate for Ningxia" during the 13th Five-Year Plan period and become the only chemical industry park in northwest China with an output value of over 100 billion yuan. We will promote the high-quality development of Ningdong Energy and Chemical Industry Base with the goal that it can become part of the national plan for ecological

protection and high-quality development in the Yellow River Basin. We have been striving to accelerates the typical practice of industrial transformation and upgrading, promotion of high-quality development, and cost reduction for the promotion of real economy, which has been praised by the State Council for three times in its general inspection. The Base has been selected as one of the top 10 chemical industry parks in China for four consecutive years. In 2021, it achieved a regional GDP of 50.07 billion yuan, an increase of about 5.1%. Its total industrial output value reached 155.07 billion yuan, the highest increment in history. Its industrial added value increased by 4.5%, its investment in fixed assets reached 21.09 billion yuan, its overall income surpassed 10 billion yuan, its general public budget revenue increased by 23.6%, and it achieved reasonable increase in quantity and a steady improvement in quality.

Based on the new development stage, Ningdong Energy and Chemical Industry Base will focus on the development of 9 subdivided industrial chains and high-end industrial clusters including coal-to-liquids, coal-based olefins, coal-to-ethylene glycol, fine chemical engineering, high-performance fibers & degradable plastics, lithium battery materials, clean energy, electronic materials and special chemicals, energy conservation of environmental protection, implement 8 major projects with an investment of 10 billion yuan. It will promote the continuous high-end, green, intelligent and integrated development of the industry, and strive to build a national modern energy economy demonstration zone, a domestic first-class modern coal chemical industry base, a leading new energy and new material industry cluster in China, and an advanced manufacturing development and innovation zone in western China. It will endeavor to build a pilot area for ecological protection and high-quality development in the Yellow River Basin, and prepare itself for the opening of the 20th National Congress of the Communist Party of China with outstanding achievements.