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## Energy in China Newsletter

**Bimonthly news on China's latest regulatory, technological and industrial development in energy sector**

A service of the Energy Sector in GIZ China

**Dear readers,**

As summer transitions to autumn, the Sino-German Energy Partnership has been busy and at full speed of facilitating cooperation between the two countries, bringing a bountiful harvest of project activities and achievements.

September started with a high-level German delegation participating in the 2023 Suzhou International Forum on Energy Transition (IFET). Co-organized by National Energy Administration of China (NEA), Jiangsu Provincial People's Government, and IRENA, Suzhou IFET provides a platform for global stakeholders to discuss energy transitions. During the week of September 4th to 8th, the German delegation engaged in impactful activities, sharing valuable insights from Germany's energy transition pathway. Notably, the Sino-German Energy Partnership played a significant role in conceiving and organizing the "Women Power in Energy Transition" subforum, marking the first-ever gender equality topic at Suzhou IFET. Bilateral meetings with key Chinese stakeholders, the 11th Sino-German Working Group Meeting on Energy, discussions on energy decarbonisation, and site visits to demonstration projects on energy efficiency exchange with German companies on green power procurement strategies were among the further highlights.

During July and August our team organised several workshops such as a launch of the report "The German Energy Transition and its inspiration for China" which was accompanied by discussions and exchanges between Chinese and German experts on experiences and ways forward for energy transition in both countries. On August 29th, the "Renewable Energy Supports Development and Women's Empowerment in Rural Qinghai" workshop was jointly organised by UN Women and GIZ. The workshop promoted the application of clean energy in the context of rural revitalisation and expanded the activities under the Women in Green Energy Initiative to women empowerment through improving energy access.

On the Chinese policy side, important updates are the implementation of a new and encompassing Green Electricity Certificate framework and an updated national hydrogen standard system. These developments along with the latest data that indicate increased energy consumption, import and generation show that China's energy system is as always constantly evolving.

We wish you a successful transition from summer into autumn and new insights when reading our

**Kind Regards,**  
**Yuxia Yin & Markus Wypior**  
**and the energy team at GIZ China**

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## Project News

### IFET: German delegation with strong presence at Suzhou International Energy Transition Forum

A high-level German delegation with representatives of the BMWK, the German Embassy in China, the GIZ, the German Energy Agency (dena), and Agora Energiewende actively participated at the 2023 Suzhou International Forum on Energy Transition (IFET), held from September 5th to 7th. Co-organized by the NEA, Jiangsu Provincial People's Government and International Renewable Energy Agency (IRENA), the Suzhou IFET provides a central platform for national and international stake-holders to discuss China's

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- » **Wechat:** [giz-energyjy](https://www.giz-energyjy.com)

#### About the projects

The **Sino-German Energy Partnership** is the central platform

and other countries' energy transitions.

On this occasion, the delegation engaged in a series of impactful activities aimed at enhancing the Sino-German energy cooperation from September 4th to 8th. Through the active participation during the IFET forum, the German delegation shared valuable first-hand information on German energy transition experiences. One notable contribution to the Suzhou IFET Forum is that the Sino-German Energy Partnership was actively engaged in concepting and organizing the subforum on Women Power in Energy Transition. This is the first time since 2015 that gender equality is a topic at Suzhou IFET and shows growing awareness and recognition from top government level on gender issues.

Furthermore, a series of bilateral meetings with key Chinese stakeholders further facilitated mutual understanding and cooperation. Notably, the 11th Sino-German Working Group Meeting on Energy was successfully hosted in Suzhou, fostering high-level political dialogue. The delegation also delved into the pressing issue of decarbonization and energy security in a dedicated Sino-German Energy Cooperation forum. Another key highlight included site visits to two industrial parks nearby Suzhou, where the Sino-German Energy Partnership implements two demonstration projects on energy efficiency. Finally, the week concluded with an exchange with German companies on strategies for green power procurement during the Local Business Advisory Council Session in Shanghai, supported by the German Consulate in Shanghai and the AHK. More details of the above-named activities can be found in the following articles of this newsletter.

for energy policy dialogue between Germany and China on national level. It aims at accelerating the energy transition in the two countries by continuous political, economic, regulatory and technological exchange with focuses on energy efficiency and renewable energies. Furthermore, the Energy Partnership provides a platform for fostering private sector cooperation. As part of the Energy Partnership, the **Sino-German Energy Transition project** focuses on supporting research cooperation between German and Chinese think tanks on all aspects of the low-carbon energy transition. On behalf of the Federal Ministry for Economic Affairs and Climate Action (BMWK), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH implements the Sino-German Energy Partnership (EP) and has established offices in Beijing and Berlin serving as an information platform and point of contact for all involved and interested parties. On the Chinese side, the Energy Partnership is chaired by the National Development and Reform Commission (NDRC) and the National Energy Administration (NEA).

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## Political dialogue: 11th meeting of the Sino-German Energy Working Group successfully held aside Suzhou IFET



On September 7th, aside the 2023 Suzhou IFET, the National Energy Administration of China (NEA) and the Federal Ministry for Economic Affairs and Climate Action of Germany (BMWK) jointly organized the 11th Sino-German Energy Working Group Meeting. Mr. An Fengquan, Deputy Director-General of the International Cooperation Department of NEA, and Ms. Andrea Juenemann, Minister Counsellor at the German Embassy in China, hosted the meeting and presented the latest energy policies and developments of both countries.

Various stakeholders from both China and Germany participated in the meeting. The Chinese participants included representatives from the NEA's New Energy and Renewable Energy Department, Electricity Department, and the Energy Conservation and Technology Equipment Department, the China Electric Power Planning & Engineering Institute (EPPEI), the Shenyang Institute of Applied Ecology of the Chinese Academy of Sciences (SIA), and the Energy Development Institute of Southern Power Grid. The German side was represented by the BMWK, the GIZ, the German Energy Agency (dena) and Agora Energiewende.

Both sides reviewed the progress and achievements of Sino-German cooperation in 2022 under the framework of the Sino-German Working Group on Energy. A series of research and exchange activities were conducted on topics related to the policy framework in the energy and power sector, renewable energy integration, power market reform, power system flexibility, rural energy transition, sustainable heating/cooling, distributed renewable energy, hydrogen as well as energy transition communication. These activities yielded fruitful results, effectively promoting the continued development of energy cooperation between the two countries and making significant contributions to building a comprehensive strategic partnership between China and Germany. As for next year, both sides agreed on continuing to deepen the cooperation on these topics and expand to further topics such as green certificate.

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**Gender: Suzhou IFET addresses gender issues for the first time**  
Sub-Forum on Women Power in the Energy Transition





The subforum on Women Power in the Energy Transition at the Suzhou IFET was co-organized by the Sino-German Energy Partnership in collaboration with the China Renewable Energy Industry Association (CREIA) and the World Economic Forum on September 7th. Gender equality was included on the Suzhou IFET agenda for the first time since its inception in 2015, marking a significant mile-stone in addressing gender issues within the energy sector in China and showcasing a growing awareness and recognition for gender issues at the top government level.

The forum focused on two topics: recognizing women's roles in the energy transition and discussing how to support women in the energy sector. Regarding the first topic, Celia García-Baños, from the International Renewable Energy Agency (IRENA), discussed women's roles in the industry, highlighting gender disparities. The following panel, moderated by Martin Hofmann from the GIZ, featured six female leaders in the energy sector, discussing their experiences and insights. The second half of the forum addressed challenges and empowerment strategies. Wang Qing from UN Women spoke about gender issues in the energy transition, emphasizing the need for gender-inclusive policies and leadership. Subsequently, Ms. Li Dan of the Renewable Energy Committee at the China Energy Research Society, chaired a discussion with six women representatives from diverse fields within the energy sector, exploring how to support women's equal participation and leadership in the energy transition.

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## Think tank cooperation: Sino-German Energy Transition Exchange Workshop

BMWK and NEA representatives join discussion with think tanks on energy transition



On September 8th, the Sino-German Energy Transition project's six implementation partners jointly organized the Sino-German Energy Transition Exchange Workshop. This event aimed to facilitate the exchange of expertise and discussions between German and Chinese think tanks regarding key issues in the energy transition. Attendees included representatives from the BMWK, the NEA, six implementation agencies, and a selected group of external energy transition think tanks.

The workshop featured ongoing research results and showcased examples from both countries. Topics spanned various aspects of the energy transition, including the new power system's status in China, prospects for Sino-German energy technology innovation, progress and challenges in Germany's energy transition, market mechanisms supporting low-carbon transition, and more. Interactive discussions between speakers and the audience enriched the workshop's insights and out-comes. For more information on project progress and results under the Sino-German Energy Transition project, please contact Mr. Markus Wypior ([markus.wypior@giz.de](mailto:markus.wypior@giz.de))

## Business: German companies discuss green power procurement strategies

Local Business Advisory Council Session on green power procurement held in Shanghai





Committed to decarbonize their global operations, foreign companies in China struggle to ensure reliable access to renewable energy sources. Challenges include - among others - insufficient supply of green power, the need for long-term power purchase agreements, and underdeveloped inter-provincial green power trading.

Against this background, the Sino-German Energy Partnership and the German Chamber of Commerce Greater China jointly organized this year's German Local Business Advisory Council Session in the German General Consulate in Shanghai on September 8th. Participants included representatives from the BMWK, the German Embassy in China, the German General Consulate in Shanghai, and thirteen German companies.

During the event, two industry experts delivered keynotes on the central issues regarding green power procurement in China. Subsequently, a lively discussion emerged about different ways of procuring green energy in China, including Power Purchasing Agreements (PPA), Green Energy Certificates (GEC) and International Renewable Energy Certificates (IREC). The Energy Partnership will take the issues voiced by the companies into consideration in its activity planning and, in consequence, offer support to German companies in addressing their problems.

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## Private sector workshop of Sino-German Demonstration Project of Energy Efficiency in Cities

On September 13, the Private Sector Workshop on Integrated Energy Concept of Sino-German Demonstration Project on Energy Efficiency in Cities was held in Jintan. The representatives from the Management committee of the Jintan EDZ, enterprises from the park and German private sector discussed the implementation of energy efficiency measures in the park jointly. The Project will keep follow-up with all parties to promote the implementation of the energy efficiency measures.

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## Gender: Renewable energy supports development and women's empowerment in rural Qinghai



On August 29th, the "Renewable Energy Supports Development and Women's Empowerment in Rural Qinghai" workshop was jointly organised by UN Women and GIZ. During the event, 13 representatives from the fields of climate change, energy transition and environmental protection, including delegates from the Hydrogen Energy Industry Committee (HEIC) of the China Energy Conservation Association (CECA), scholars from Beijing Normal University focusing on the rural women's household energy use in Qinghai Province, representatives of women vocational schools from Qinghai Province and women entrepreneurs, participated in discussions and shared their experiences.

Through this workshop, participants reviewed relevant theories and practical experiences, engaged in discussions on advancing future actions, and reached a consensus and commitment to utilising renewable energy technology to support agricultural activities and communal green transition in remote areas of Qinghai. The aim is to create an inclusive environment for rural women's empowerment.

The event also represents an expansion and enrichment of the "Women in Green Energy" initiative. Based on the efforts to empower women involved in energy transition, the initiative has, for the first time, extended its focus to encompass women energy consumers, especially in remote rural areas. Through this event, the initiative has established a platform to gather professional information and resources, facilitating discussions on how to better provide and utilise clean energy in rural areas, empower women, and contribute to rural revitalisation.

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## Report: Energy transition in Germany and China





Panel discussion

On August 28, 2023, the GIZ and the National Energy Conservation Center (NECC) jointly hosted an "Energy Transition in Germany and China" workshop. The conference invited experts in the field of energy transition from both China and Germany to systematically examine the policy frameworks, major implementation paths, achievements, and challenges of energy transition in both countries. Additionally, they looked ahead to the future of energy transition and the cooperation between China and Germany in this field. During a panel discussion, the experts discussed topics such as the role of energy transition in achieving climate goals, improving energy efficiency, the impact of electricity market reforms on energy transition, and the contribution of energy transition to building an ecological civilisation.

During the workshop, Ms. Yin Yuxia, Director of the Sino-German Energy and Energy Efficiency Partnership Project under the GIZ, published the report titled "Germany's Energy Transition and Its Implications for China," which was collaboratively authored by experts from both China and Germany.

[Download the report here.](#)

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## Business: Improving energy efficiency in China's public buildings

Sino-German Business Roundtable on Energy Efficiency in Public Buildings





On August 3rd, 2023, the Sino-German Business Roundtable on Energy Efficiency in Public Buildings was held in Beijing. The event was co-organised by GIZ and Energy and Environment Service Industry Alliance (EESIA) with support from AHK and took place within the framework of the Sino-German Energy Partnership. 24 high-level business representatives from Chinese and German companies and industrial associations participated in the roundtable discussion, exchanging insights on recent industry developments and how to increase energy efficiency in public buildings. With buildings accounting for over 20% of China's total carbon emissions, promoting energy efficiency in public buildings is a key element in China's path towards its climate goals. Prior to the event, a survey was conducted to better understand the distribution of energy efficiency potential in public buildings as well as limiting factors in China. The results provide deep insights into current practices, challenges, innovations, and potential of the industry. During the event, Mr. Yu Zhen, director of the Institute of Building Environment and Energy at the China Academy of Building Research, shared macro trends in China's policy toward energy efficiency in buildings while Mr. Jiang Haojie, head of the research department at EESIA, presented the main findings of the survey.

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Gender analysis workshop for “Supporting China’s climate targets through ambitious green and low carbon energy transition” project preparation



On August 2nd, GIZ Sino-German Energy Partnership organized a Gender Analysis Workshop to prepare the gender related components for the new IKI project on “Supporting China’s climate targets through ambitious green and low carbon energy transition”.

Experts in China’s energy, climate, and gender equality participated in the workshop, and joined the discussion. The experts suggested that the gender components in the new project design should be in line with the overarching national gender policy and development trend. Both male and female are vulnerable during energy transition, therefore, female should not be the only focus in the new project, and just energy transition should be emphasized. Traditional energy sector is dominated by men, it will be helpful to provide female participants more opportunities in future capacity training on energy technology topics. The discussion also provided impulse for planning and steering the activities of the Women in Green Energy Initiative under the Sino-German Energy Partnership and created synergies.

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## Heating: Promoting the application of heat pump systems in China to accelerate the heating transition

The China Heat Pump Forum and the sub-forum on Sino-German Heat Pump System Application Technology





2023中国热泵行业年会  
暨第十二届国际热泵行业发展高峰论坛

零碳未来 热泵雄心

## 《工业热泵发展白皮书》参编单位证书颁发仪式

德国国际合作机构 (GIZ)

青岛海尔空调电子有限公司

福建雪人股份有限公司

上海复洁环保科技股份有限公司

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安徽新沪屏蔽泵有限责任公司

北京四季源源科技有限公司



零碳未来 热泵雄心

2023中国热泵行业年会

CHPA released the White Paper on the Decarbonization Potential of Industrial Heat Pumps



Group photo: Sub-forum on Sino-German Heat Pump System Application Technology

The China Heat Pump Forum, organised by the China Heat Pump Alliance (CHPA), took place in Nanjing from July 31 to August 2. The event aimed to exchange and explore new prospects for the development of the heat pump industry in China. GIZ, under the framework of the Sino-German Energy Partnership, played an active role in sharing German heat pump developments.

During the event, CHPA released the White Paper on the Decarbonisation Potential of Industrial Heat Pumps. The paper analyses the important role of high-temperature heat pumps in decarbonizing the industrial sector and presents relevant policy recommendations to promote their development.

As both China and Germany face similar challenges in heat pump development, such as insufficient installation capacity, GIZ and CHPA co-organised a sub-forum on Sino-German Heat Pump System Application Technology. The subforum provided an exchange platform for representatives to discuss

challenges and solutions in heat pump system installation.

For next steps, the Sino-German Energy Partnership will update its previous policy recommendation paper on high-temperature heat pumps in Germany and Europe and work with heat pump associations and enterprises to develop specifications for installation and training materials. The project will continue to promote heat pump systems in China and contribute to low-carbon transformation in the heating sector.

[Read more »](#)

## Hydrogen: Sino-German exchange on sector coupling reveals synergies

Experts from both countries discussed recent developments in German and Chinese hydrogen industries



Group photo of participants

The Sino-German Workshop on Sector Coupling in Hydrogen Clusters took place on 20 July 2023. The event brought German and Chinese experts from the energy and transport sectors together to share knowledge and innovative concepts of sector coupling and to discuss experiences and best practices from hydrogen demonstration zones in Germany and China. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the China Hydrogen Alliance (CHA) jointly organised the event under the framework of two projects - Transformation in the Mobility Sector in Asia and Germany and the Sino-German Energy Partnership.

The keynotes touched upon various aspects of the hydrogen industry and its value chain in both countries, with a special focus on sector coupling with the transport sector. Mr. Xiao Chenjiang, deputy director of the CHA gave an overview of the application and promotion of low-carbon and clean hydrogen in the transport sector in China. Mr. Alexander Gehling, program manager at the German National Organisation Hydrogen and Fuel Cell Technology (NOW) GmbH, provided an overview of Germany's hydrogen clusters and the nationwide funding scheme. Mr. Wu Zheng, head of the hydrogen fuel cell research department at the China Automotive Technology and Research Center (CATARC), shared the experience of constructing fuel cell vehicle demonstration city clusters in China. Mr. Stefan Rössler, project coordinator future fields and innovation at Metropolregion Rhein-Neckar GmbH, introduced the H2Rivers hydrogen pilot region.

The workshop attracted around 110 participants online. They also joined the discussion on potential synergies and common challenges in a panel session. Mr. Pan Fengwen, deputy director of the Chinese National Center of Technology Innovation for Fuel Cells, moderated the panel.



## Upcoming events

### Dissemination Workshop of the Sino-German Energy Efficiency Network pilot in Taicang High Tech Industry Zone

When: 25. September, 2023

Where: Taicang

As the first phase of the Taicang Energy Efficiency Network (EEN) pilot of the Sino-German Cooperation Area on Energy Efficiency Networks draws to an end, the Taicang High Tech Industry Zone will unite the project partners GIZ, China International Engineering Consulting Corporation (CIECC), and Arqum to host a closing ceremony in the end of September. The event will highlight the results and experiences gathered in the Sino-German Energy Efficiency and Climate Network in Taicang to showcase that EEN can be an innovative energy service instrument for energy saving in China. The meeting also aims at promoting the exchange on EEN and carbon emission reduction among governments, enterprises, and industries in China's energy sector. For more information, please contact Ms. Weng Fangping ([fangping.weng@giz.de](mailto:fangping.weng@giz.de)).

### Sino-German Expert Workshop for Energy Efficiency of Electrolyzers

When: 27. September, 2023

Where: Beijing (tbd)

The energy efficiency assessment standards for electrolytic hydrogen production are of great importance to manufacturers and consumers. Compliance with current hydrogen production technology and the adoption of standards recognized by the industry can promote healthy competition in the industry and the development of energy-efficient hydrogen production equipment. Building on the results of last year's Sino-German Expert Workshop on Energy Efficiency in Green Hydrogen Production, this workshop provides a channel for Chinese and German electrolyzer-manufacturers to discuss electrolyzer efficiency standards with political and other relevant stakeholders. Further, participants will explore the potential inclusion of international enterprises within the CHA's "Hydrogen Top-Runner Action" initiative. For more information, please contact Mr. Vincent Fremery ([vincent.fremery@giz.de](mailto:vincent.fremery@giz.de)).

### Workshop on energy laws supporting energy transition in China and Germany

When: Mid of October

Where: Beijing

In order to introduce the role of energy and energy efficiency laws in German energy transition and concludes experiences and lessons, the GIZ implemented Sino-German Energy Partnership and German climate and energy thinktank the Institute for Climate Protection, Energy and Mobility (IKEM) published "The Role of Energy Law in the German Energy Transition" report. Along with the release of this report, GIZ will organize a workshop in October to deepen exchanges on energy law framework in relation with energy transition between Chinese and German policy makers and researchers. For more information, please contact Ms. Wang Hao ([hao.wang@giz.de](mailto:hao.wang@giz.de)).

### The Sino-German Workshop on Hydrogen Transport and Refueling

When: 18. October, 2023

To better understand recent developments regarding hydrogen transport infrastructure in China and Germany, GIZ will organize a technical exchange workshop on Hydrogen Transport and Refueling within the framework of two projects: Transformation in the Mobility Sector in Asia and the Sino-German Energy Partnership. This event will bring together experts from Germany and China in the fields of energy and transport to exchange knowledge and innovative concepts related to hydrogen transport and refueling infrastructure.

The workshop will kick off with a thematic focus on "Infrastructure Development and Planning." Following this, the discussion will shift to "Standards and Safety for H2 Transport via Pipelines and Containers and Liquid Hydrogen Refueling." To conclude the event, a panel discussion will explore potential collaboration opportunities and mutual learning experiences. For more information about our activities on hydrogen, please contact Mr. Vincent Fremery ([vincent.fremet@giz.de](mailto:vincent.fremet@giz.de)).





## Climate policy & action

### Major achievement for China's carbon peaking and neutrality goal during past three years

On August 15th, 2023, the National Development and Reform Committee (NDRC) published the major achievements since the release of China's carbon peaking and carbon neutrality target in 2020. The carbon peaking and neutrality policy framework is completed while national, provincial, and sectoral policy documents have been released to guide the decarbonisation efforts. The capacity of installed renewable energy plants exceeded 1,300 GW. Green power trading in China reached over 60 TWh. The construction of new green buildings increased by 91% by 2022 and energy conservation retrofits for existing buildings grew by more than 65%.

■ **Sources:**

"国家发展改革委发布碳达峰碳中和重大宣示三周年重要成果", NDRC, August 17,  
[https://www.ndrc.gov.cn/fzggw/wld/zcx/lddt/202308/t20230817\\_1359896.html](https://www.ndrc.gov.cn/fzggw/wld/zcx/lddt/202308/t20230817_1359896.html)



## Energy transition policy & general

### National hydrogen standard system framework established

In August 2023, China released its first national standard system guide for the entire hydrogen industry chain. The hydrogen industry standard system covers the framework conditions for the industry, safety considerations, hydrogen production, storage and transportation, refuelling, and hydrogen applications. The framework document proposes to formulate basic common and general safety standards for hydrogen development. Based on the technical needs of each hydrogen industrial process, the document requires the establishment of a specific standard system framework for each hydrogen industry branch. The framework also sets the goal to formulate and revise an additional 30 hydrogen energy standards by 2025.

■ **Sources:**

"关于印发《氢能产业标准体系建设指南（2023版）》的通知", SAMR, August 8,  
[https://www.samr.gov.cn/bzjss/tzgg/art/2023/art\\_8f81df3e20ed42a0997aa8c108e9f9a5.html](https://www.samr.gov.cn/bzjss/tzgg/art/2023/art_8f81df3e20ed42a0997aa8c108e9f9a5.html)



### 668 standards to be developed in the energy sector in 2023

On 28 July 2023, the National Energy Administration (NEA) of China issued a call for public opinions on the new development, revision, and foreign language version translation plans of standards in the energy sector in 2023. The proposed list covers a total of 668 standards development projects in the energy sector, among which, 16 projects will focus on hydrogen.

The 16 announced hydrogen-related standards cover the whole industry chain of hydrogen production, storage, transport, and application. It includes standards on low-carbon and clean

hydrogen, system performance of hydrogen production from electrolysis, fuel cell performance evaluation, integral performance testing of hydrogen refueling station, welding technology of hydrogen transmission pipelines etc. The leading state-owned energy corporations and academic institutes including CHN Energy Investment Group, China National Petroleum Corporation (CNPC), China Shipbuilding, Power Construction Corporation of China, Three Gorges Group, Tsinghua University and many others will be leading the standard drafting.

Next to the 668 proposed new standards to be developed, 455 standards need to be revised and 64 foreign language standards will be translated. The standards cover a comprehensive range of specific technical areas in the energy sector, including natural gas, coal, nuclear, hydro, photovoltaics, wind, biomethane, storage, grid, heat pumps etc.

■ **Sources:**

"国家能源局综合司关于公开征求2023年能源领域拟立项行业标准制修订计划及外文版翻译计划项目意见的通知," NEA, July 28, at [http://www.nea.gov.cn/2023-07/28/c\\_1310734573.htm](http://www.nea.gov.cn/2023-07/28/c_1310734573.htm)



## Chinese government plans demonstration projects for advanced green and low-carbon technologies

On 4 August 2023, the National Reform and Development Commission (NDRC) together with nine other departments announced to implement a series of demonstration projects for advanced green and low-carbon technologies. The projects will focus on key sectors including non-fossil energy, industry, construction, power grids, energy storage, and carbon capture. There will be additional funding and tax policy support for the projects. The supporting policies, business models and regulatory mechanisms will be continually refined. By 2025, first successful implementation of new technologies is expected. By 2030, research and development as well as demonstration and promotion of advanced green and low-carbon technologies will have reached maturity. The projects will also strengthen the international competitiveness of China's green and low-carbon technologies and industry.

■ **Sources:**

"关于印发《绿色低碳先进技术示范工程实施方案》的通知", China Energy News, 22 August 2023, accessed at: [https://www.ndrc.gov.cn/xwdt/tzgg/202308/t20230822\\_1359999.html](https://www.ndrc.gov.cn/xwdt/tzgg/202308/t20230822_1359999.html)



## Renewable Energy

### Green Electricity Certificates to promote the consumption of renewable electricity in China

On August 3rd, 2023, the National Development and Reform Committee (NDRC), the Ministry of Finance and the National Energy Administration (NEA) issued a Notice on expanding the coverage of green electricity certificate (GEC) to promote renewable electricity consumption. The notice clarifies that GECs are the only instrument to demonstrate renewable electricity generation and consumption. It extends the coverage of GEC to all types of renewable generators from previously centralised wind and solar only. It also specifies trading rules for GEC and GEC's relation with the carbon market. The Notice provides the foundation for future renewable energy development and integration.

The Sino-German Energy Transition project (EnTrans) is currently planning a report on green electricity certificates in Germany/EU and China.

■ Sources:

"国家发展改革委 财政部 国家能源局关于做好可再生能源绿色电力证书全覆盖工作促进可再生能源电力消费的通知", NDRC, August 3rd,  
[https://www.ndrc.gov.cn/xxgk/zcfb/tz/202308/t20230803\\_1359092.html](https://www.ndrc.gov.cn/xxgk/zcfb/tz/202308/t20230803_1359092.html)



## China’s solar capacity increased sharply

By the end of July 2023, China’s power generation capacity increased by 11.5% compared to the start of the year to a total of 2.74 TW. Solar capacity increased dramatically by 42.9% and reached cumulative installations of 490 GW. With 14.3%, wind power capacity also grew considerably and now stands at more than 390 GW.

	Generation capacity (Jan-July) (GW)	Increase rate (%)
Total	2739.74	11.5
Hydro power	418.12	4.1
Thermal power	1363.53	4.0
Nuclear	56.76	2.2
Wind power	392.91	14.3
Solar Power	490.81	42.9

■ Sources:

"国家能源局发布1-7月份全国电力工业统计数据", NDRC, August 17, [http://www.nea.gov.cn/2023-08/17/c\\_1310737383.htm](http://www.nea.gov.cn/2023-08/17/c_1310737383.htm)



## China installs world`s largest wind turbine

On 19 July 2023, China Three Gorges Corporation successfully installed the 16 MW offshore wind turbine MySE 16-260. It is 152 meters tall and has a rotor diameter of 260 meters. Each blade is 123 meters long and weighs 54 tonnes. According to the corporation, the turbine will produce enough electricity to power 36,000 Chinese homes, contributing 66 GWh annually.

This demonstration unit is located in the Fujian offshore wind farm in the Taiwan Strait, taking advantage of a natural wind tunnel effect. According to the Three Gorges Group, this location experiences level 7 "near gale" conditions with winds exceeding 51 km/h more than 200 days each year. To ensure safety, the turbine is designed to withstand wind speeds of up to 287 km/h, leaving margin over the strongest wind conditions ever measured in the Western North Pacific of 260 km/h in

1979. Offshore wind turbines are continuing to grow – the China State Shipbuilding Corporation was already building an 18 MW turbine in January.

■ **Sources:**

“World's largest wind turbine is now fully operational and connected”, New Atlas, 19 July 2023, accessed at: <https://newatlas.com/energy/worlds-largest-wind-turbine-myse-16-260/>



## China's largest photovoltaic hydrogen production project fully operational

On 30 August 2023, China Petrochemical Corporation (Sinopec) announced completion and start of operations of the country's largest photovoltaic hydrogen production project – the Kuche Green Hydrogen Demonstration Project in Xinjiang. The project is the first large-scale initiative in China that utilises photovoltaic power to directly produce green hydrogen. The project produces 20,000 tonnes of green hydrogen per year, which will be supplied to Sinopec's nearby Tahe Petrochemical Company, replacing natural gas used in the refining process. This achieves the coupling of modern oil refining with low-carbon green hydrogen. The successful completion of this project is a significant breakthrough in the large-scale industrial application of green hydrogen in China. The project is estimated to reduce carbon dioxide emissions by 485,000 tons annually.

■ **Sources:**

“零突破！我国规模最大光伏发电直接制绿氢项目全面建成投产”，Zhongguo Nengyuan Bao, 30 August 2023, accessed at: <https://mp.weixin.qq.com/s/T8DUoEWU-x963clPC8c0Dg>



## Energy consumption & efficiency

### NEA releases renewable power consumption targets for 2023 & 2024

The National Energy Agency (NEA) recently issued renewable power consumption targets for 2023 and 2024. These targets are set per province and appoint a proportion of renewable and non-hydro renewable energy in the annual electricity consumption. The 2023 targets are binding targets, and all provinces will complete this year's assessment based on the targets. Green certificates will be used as the main proof.

The 2024 targets are indicative targets, guiding each province to plan the scale of new grid-connected wind power and solar PV capacity for next year. Qinghai and Ningxia have the highest target values for non-hydro renewable power consumption. Their actual consumption in 2021 has however already exceeded the expected target of 2024. Most provinces' binding targets for 2023 were increased by 1.2% compared with 2022.

■ **Sources:**

“关于2023年可再生能源电力消纳责任权重及有关事项的通知”, NDRC, 04 August 2023, accessed at: [https://www.ndrc.gov.cn/xwdt/tzgg/202308/t20230804\\_1359103.html](https://www.ndrc.gov.cn/xwdt/tzgg/202308/t20230804_1359103.html)



## Coal, oil, gas

### China's energy production and imports: key highlights for H1 2023

In July, the National Bureau of Statistics released data for China's energy production and imports in the first half of 2023. China's coal production maintained stable growth, reaching 2.3 billion tons, a 4.4% increase compared to the same period last year. Coal imports surged to 220 million tons, marking a substantial 93.0% year-on-year rise. China's crude oil production remained steady, totalling 105.05 million tons in H1 2023, reflecting a 2.1% growth year-on-year. Crude oil imports surged by 11.7% to 282.08 million tons. Furthermore, crude oil processing increased significantly by 9.9% to 363.58 million tons. Natural gas production maintained consistent growth, reaching 115.5 billion cubic meters H1 2023, a 5.4% increase year-on-year. Imports of natural gas saw a 5.8% rise, reaching 56.63 million tons.

China's electricity production experienced growth in H1 2023, reaching 4168 TWh, a 3.8% increase. While thermal power generation rose by 7.5%, hydropower experienced a decline of 22.9% due to low precipitation. Nuclear power grew by 6.5%, wind power by 16.0%, and solar power by 7.4%.

#### ■ Sources:

“2023年上半年能源生产情况”, National Bureau of Statistics, 17 July 2023, accessed at: [http://www.stats.gov.cn/sj/zxfb/202307/t20230715\\_1941272.html](http://www.stats.gov.cn/sj/zxfb/202307/t20230715_1941272.html)



## Nuclear

### China approved three new nuclear power projects and developed own technology

In late July, the State Council granted approval to three nuclear power projects, each with two units, situated in the provinces of Shandong, Fujian, and Liaoning. This is the first time this year that China has approved new nuclear power units in response to the recent energy challenges. In 2022, China approved ten nuclear power units, the highest amount since 2009. Based on data provided by the China Nuclear Energy Industry Association, as of April 2023, China's cumulative installed capacity for its 54 commercial nuclear power units had reached 56.9 GW. The number of nuclear power units currently under construction had reached 24, with a total capacity of 26.8 GW. The Chinese government has re-emphasised that safety remains the cornerstone of its nuclear power development.

On 10 August 2023, developers successfully installed the core module of the Linglong One small modular reactor in Hainan. This marks an important technical milestone for China's nuclear energy development, as the reactor was fully developed and produced in China. According to statistics from the International Atomic Energy Agency, there are over 80 types of small modular reactor technologies under development worldwide. Once operational, the Linglong One is expected to reduce carbon dioxide emissions by approximately 880,000 tons annually.

#### ■ Sources:

“核电建设加速，三大核电项目同时获核准”，Huaxia Nengyuan Wang, 01 August 2023, accessed





## Business

### Chinese Government issues policies to further improve the foreign investment environment

To further enhance the attractiveness for foreign investors, the State Council has introduced a series of policy recommendations. These measures aim to facilitate foreign investment and promote collaboration in various sectors, aligning with China's strategy of fostering an open and cooperative economic system.

**Key highlights in terms of energy** include 1) introducing measures and policies to promote green electricity consumption; 2) supporting the participation of in foreign-invested enterprises in green certificate trading and cross-provincial green power procurement and trading. Currently, the foreign-invested enterprises urges measures like green power procurement to alleviate the pressure of achieving climate goals. That is also why this year's German Local Business Advisory Council Session addressed this issue (see project news above).

These policy measures underscore China's commitment to creating a favorable environment for foreign investment, in line with its overarching objectives of openness and cooperation.

#### ■ Sources:

"国务院关于进一步优化外商投资环境 加大吸引外商投资力度的意见", the State Council, 13 August 2023, accessed at: [https://www.gov.cn/zhengce/content/202308/content\\_6898048.htm?](https://www.gov.cn/zhengce/content/202308/content_6898048.htm?mc_cid=15b05a4232&mc_eid=99ced12320)  
[mc\\_cid=15b05a4232&mc\\_eid=99ced12320](https://www.gov.cn/zhengce/content/202308/content_6898048.htm?mc_cid=15b05a4232&mc_eid=99ced12320)

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### Climate Investment and Financing Alliance launched

China has taken a step towards a greener future with the launch of the Climate Investment and Finance Alliance on August 6, 2023. This collaborative effort involves a diverse group of stakeholders, including the China Beijing Green Exchange (CBGE), Beijing Green Finance Association, financial institutions, and energy and environmental protection enterprises. The alliance aims to bolster China's climate financing capabilities and support eco-friendly projects through various means.

The alliance's key objectives include expanding financing options for businesses, creating innovative climate-focused financial products and services, and promoting collaboration across sectors to amplify the green finance market. A notable feature of the launch was CBGE's partnerships with 23 cities and districts chosen to lead new climate investment and financing endeavours. Additionally, CBGE signed agreements with financial institutions and climate finance organisations to enhance financial backing for climate projects.

This initiative highlights China's commitment to addressing climate change and fostering sustainable development. By uniting diverse stakeholders, the Climate Investment and Finance Alliance has the

potential to not only accelerate green projects but also serve as a model for global collaborative efforts toward a more sustainable future.

■ **Sources:**

“中国气候投融资联盟成立 北京绿交所与气候投融资试点地区开展战略合作” People.cn, 8 August, at [http://bj.people.com.cn/n2/2023/0807/c14540-40522201.html?mc\\_cid=15b05a4232&mc\\_eid=99ced12320](http://bj.people.com.cn/n2/2023/0807/c14540-40522201.html?mc_cid=15b05a4232&mc_eid=99ced12320)



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## World's largest electric container ship in operation

On 26 July 2023, the Chinese shipping company COSCO Shipping Development launched its 700 TEU electric container ship (N997) at COSCO Shipping Heavy Industry in Yangzhou. The vessel is 120 meters long and has a draught of 5.5 meters, primarily designed for use in inland waterways and shallow coastal waters. With a total capacity of 50 MWh, it has the largest battery ever deployed in maritime transportation. The ship is powered by two 900 kW motors. The vessel is equipped with smart management systems to increase efficiency and safety of operation. In comparison to conventional fuel ships of similar size, the 700 TEU electric container ship can reduce carbon emissions by approximately 32 tons per 24 hours.

In its statement, the shipping company referred to this project as a key initiative for the advancement of green, emission-free shipping. The company also expressed its intention to continue the utilisation of additional electric cargo ships in inland and coastal waters in the future. Construction on the N998, the second vessel of the class, began in May this year.

■ **Source:**

"COSCO Shipping Development Unveils Electric Container Ship700TEU", COSCO SHIPPING Development, 27 July 2023, accessed at:

[http://en.development.coscoshipping.com/art/2023/7/27/art\\_5813\\_331393.html](http://en.development.coscoshipping.com/art/2023/7/27/art_5813_331393.html)

“China Launches First 700 TEU Electric Containership for Yangtze Service”, The Maritime Executive, 28 July 2023, accessed at: <https://maritime-executive.com/article/china-launches-first-700-teu-electric-containership-for-yangtze-service>

“Seefracht: Cosco launcht größtes vollelektrisches Containerschiff”, Logistik Heute, 01 August 2023, accessed at: <https://logistik-heute.de/news/seefracht-cosco-launcht-groesstes-vollelektrisches-containerschiff-40784.html>



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## New superfast charging electric vehicle battery: 400 kilometres in 10 minutes

On 16 August 2023, China's biggest battery manufacturer, CATL, announced to have developed a new battery for electric vehicles that charges at record speed. With its new Shenxing Battery, CATL aims to “open up an era of EV superfast charging”. According to the company statement, it is said to provide a range of 400 kilometres after ten minutes of charging. For comparison, Tesla claims that its Supercharger can charge its Model 3 for a 275 kilometres range within 15 minutes.

When fully charged, the new CATL battery provides a total range of 700 kilometres per charge. The company states that mass production will be achieved by the end of the year, and the first electric vehicles equipped with their new batteries will be available in the first quarter of next year. China is

leading the market for electric vehicle batteries. In December of last year, CATL opened its first production facility outside of China in Thuringia, Germany.

■ **Source:**

"CATL Launches Superfast Charging Battery Shenxing, Opens Up Era of EV Superfast Charging", CATL, 16 August 2023, accessed at: <https://www.catl.com/en/news/6091.html>  
"E-Auto-Batterie aus China: 400 Kilometer Reichweite in zehn Minuten", Handelsblatt, 17 August 2023, accessed at: <https://www.handelsblatt.com/unternehmen/industrie>



## China in the world

### China takes action against information leaks in the energy sector

China's National Energy Administration (NEA) has issued a statement calling for stricter information security in the energy sector as part of a broader anti-spying effort. According to a statement released on 16 August 2023, foreign powers are collecting information to disrupt China's green transition and jeopardise the country's energy security. Zhang Jianhua, Secretary of the Party Leadership Group and Director of the NEA, stated that issues related to the energy transition often attract the attention of foreign hostile actors seeking to undermine China's energy development and security. In response, the NEA is urging that Chinese energy companies improve their confidentiality measures and perform confidentiality management functions in accordance with laws and regulations. Emphasising the important role of the people, the NEA also calls for the prioritisation of security education to enhance awareness for maintaining confidentiality.

■ **Sources:**

"China clamps down on information leaks in energy sector", Power Technology, 16 August 2023, accessed at: <https://www.power-technology.com/news/china-clamps-down-on-information-leaks-in-energy-sector/?cf-view&cf-closed>



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