

CHINA ENERGY POLICY NEWSLETTER

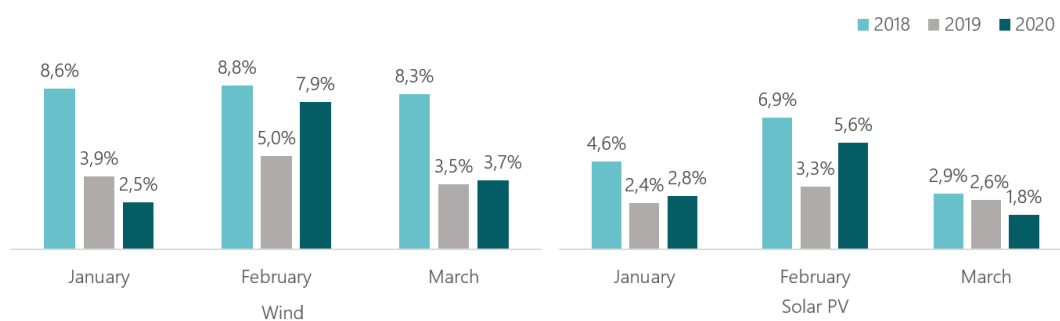
Boosting Renewable Energy as Part of China's Energy Revolution

1. Energy transition updates

Share of wind and PV generation increased during the COVID-19 lockdown

China's electricity consumption decreased by 6.5% in Q1 2020 due to the COVID-19. The growth rate was 12 percentage points less than Q1 2019, which brought pressure to renewable power consumption. Specifically in North China, due to the heating season and less power demand, wind curtailment rate increased by 5.8 percentage points to reach 13.6%, while PV curtailment increased by 7.7 percentage points to reach 8%. Despite the renewable curtailment becoming worse regionally, the national proportion of wind and PV power generation increased by 1.9 percentage points and reached 10.8% in Q1 2020.¹

Comparison of national wind and PV curtailment rates from January to March in 2018, 2019 and 2020



Source: China Renewable Energy Monitoring Centre (CREMC), May 2020

¹ "2020年一季度全国新能源电力消纳评估分析," China Renewable Energy Monitoring Centre, 12 May 2020, accessed at <http://news.bjx.com.cn/html/20200512/1071429.shtml>.

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Nevertheless, the electricity consumption growth rate changed from negative to positive (0.7%) in April 2020 because of the reopening the society.² The power demand in non-ferrous metals, medicine, electronics, chemical, steel and machinery industries have reached or exceeded the level of the same period in 2019. The State Grid Energy Research Institute (SGERI) expects that the growth rate within the State Grid business region will further increase to around 2% to 3% in Q2 2020.³

Newly added wind and PV consumption capacity for 2020 issued

In the 2020 *Wind and Solar PV Construction Plans* issued earlier in March 2020, NEA requires power grid operators (TSOs) together with the China Renewable Energy Monitoring Centre (CREMC) to measure and evaluate the 2020 incremental wind and PV power consumption capacity by province.⁴ On 25 May 2020, the CREMC published the 2020 newly increased wind and PV consumption capacity, of which wind power is 36.65 GW and PV is 48.45 GW.⁵ The document requires provincial governments to determine the construction scale of new subsidy-free and tendering wind and PV projects by considering these results and their consumption capability in the beginning of the 14th Five-Year Plan period.

The first public tendering PV-energy storage system bid opens

On 24 April 2020, China's first public tendering of PV assembled energy storage system determined the top three candidates with prices between RMB 1.45/Wh and RMB 1.54/Wh. It is a 5 MW/10 MWh energy storage system of a 100 MW PV-agriculture power plant in Tai'an, Shandong province. The 14 bidders offered prices ranging from RMB 1.3/Wh to RMB 2/Wh. Although the bid winning prices are not the lowest within the bidding price range, they are already lower than the majority of PV-energy storage system quotations in 2019 (RMB 1.8/Wh to RMB 1.9/Wh).⁶

Intelligent energy facility is part of the "New Infrastructure"

In order to offset the negative impacts of COVID-19, China aims to accelerate the investment in "New Infrastructure". The Central Economic Work Conference in the year-end 2018 gave the concept of "New Infrastructure" for the first time. The construction of "New Infrastructure" includes 5G, artificial intelligence, industrial internet, and Internet-of-Things facilities, and it was listed as one of the key government tasks in 2019.⁷ The National Development and Reform Commission (NDRC) officially clarified the scope of these infrastructures in April 2020.⁸ "New Infrastructure" is classified into information-based infrastructure, converged infrastructure, and innovative infrastructure. The Intelligent energy facility is part of the converged infrastructure. It implies deep integration of technologies such as the internet, big data, and artificial intelligence, into the traditional energy sector in order to achieve transition and upgrade.

² "2020年1-4月份电力工业运行简况," China Electricity Council, 22 May 2020, accessed at <http://www.cec.org.cn/guihuayutongji/gongxufenxi/dianliyunningjiankuang/2020-05-22/202295.html>.

³ "4月份我国发电量同比持续正增长," Xinhua News Agency, 2 May 2020, accessed at http://www.gov.cn/xinwen/2020-05/02/content_5508294.htm.

⁴ "国家能源局关于2020年风电、光伏发电项目建设有关事项的通知, 国能发新能〔2020〕17号," National Energy Administration, 5 March 2020, accessed at http://zfxgk.nea.gov.cn/2020-03/05/c_138862190.htm.

⁵ "光伏4845万千瓦! 2020年全国风电、光伏发电新增消纳能力情况发布," China Renewable Energy Monitoring Centre, 25 May 2020, accessed at <http://www.solarpwr.cn/bencandy-52-50086.html>.

⁶ "平高1.54元/Wh中标华能新泰光伏配置储能系统5MW/10MWh项目," China Energy Information Platform, 27 April 2020, accessed at <https://baijiahao.baidu.com/s?id=1665123621263156119&wfr=spider&for=pc>.

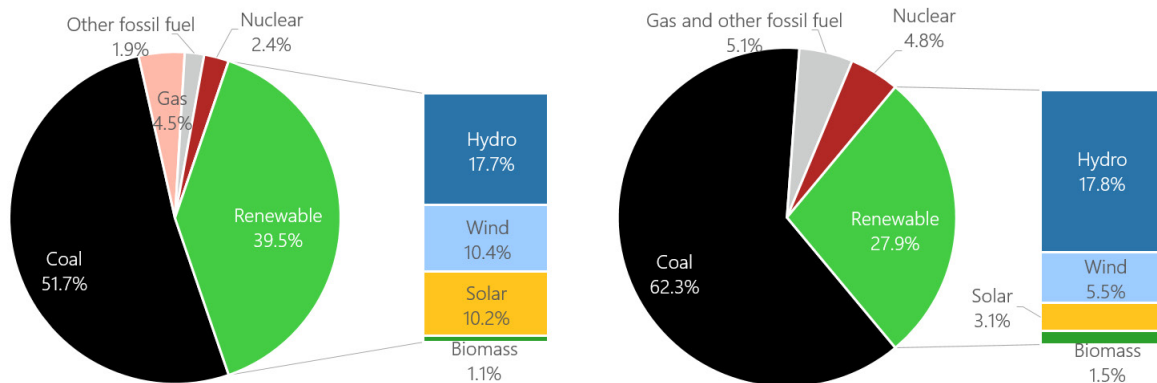
⁷ "解读: 中央经济工作会议定义"新型基础设施建设"," Big Data Infrastructure Research Centre, 11 January 2019, accessed at http://www.gzic.gov.cn/html/2019/gzyd_0111/1482.html.

⁸ "国家发改委首次明确新基建范围 将从四方面促进新基建," China News Service (CNS), 20 April 2020, accessed at http://news.china.com.cn/2020-04/20/content_75955120.htm.

The 2019 Renewable Power Monitoring and Assessment Report issued

The National Energy Administration (NEA) issued the *2019 Renewable Power Monitoring and Assessment Report* in May 2020.⁹ In 2019, the share of renewable power installed capacity was 39.5% and its share in power generation reached 27.9%. The specific data for hydro, wind and solar power are the same compared with what CEC issued in February 2020 (please refer to the [newsletter of February 2020](#) for details), while the report provides further data for biomass power. The biomass power installed capacity increased from 17.8 GW in 2018 to 22.5 GW in 2019 and the power generation rose from 90.6 TWh to 111.1 TWh which represents 1.5% of the total power generation. In addition, the share of renewables in Ultra-High-Voltage power transmission lines nationwide reached 52.4%.

2019 Power installed capacity (left) and power generation (right) by fuel



Source: Coal, gas and nuclear data from China Electricity Council (CEC), February 2020; hydro, wind, solar and biomass data from National Energy Administration (NEA), May 2020

On the grid connection side, not all provinces within the key renewable power developing regions¹⁰ achieved the mandatory target of purchasing minimum hours of wind and PV power required by NEA.¹¹ Among them, Gansu and Ningxia did not complete both the wind and PV targets, while Xinjiang and Shaanxi did not complete the PV targets. These results will affect their annual wind power and PV “traffic light” evaluation results. Nevertheless, China’s overall renewable power utilization efficiency continued to improve. All key regions achieved the 2019 utilization rate targets of hydro, wind and solar PV power issued in the *Clean Energy Consumption Action Plan (2018–2020)*.¹²

Regarding the renewable power consumption status by province, the share of non-hydro renewables in national power consumption increased one percentage point to reach 10.2% in 2019, although four provinces including Xinjiang, Ningxia, Inner Mongolia and Hunan had negative year-on-year increase rates.

⁹ “国家能源局关于2019年度全国可再生能源电力发展监测评价的通报, 国能发新能〔2020〕31号,” National Energy Administration, 6 May 2020, accessed at http://zfxgk.nea.gov.cn/2020-05/06/c_139059627.htm.

¹⁰ Key regions include Inner Mongolia, Xinjiang, Gansu, Hebei, Ningxia, Heilongjiang, Jilin, Liaoning and Shanxi.

¹¹ The National Development and Reform Commission (NDRC) issued the policy requiring each provincial TSO to purchase minimum number of hours of utility-scale wind and PV power projects’ output annually. “国家发展改革委关于印发《可再生能源发电全额保障性收购管理办法》的通知, 发改能源[2016]625号,” National Development and Reform Commission, 28 March 2016, accessed at http://www.nea.gov.cn/2016-03/28/c_135230445.htm. 2019 targets: “国家发展改革委 国家能源局关于建立健全可再生能源电力消纳保障机制的通知,” National Development and Reform Commission, 16 May 2019, accessed at http://www.gov.cn/xinwen/2019-05/16/content_5392082.htm.

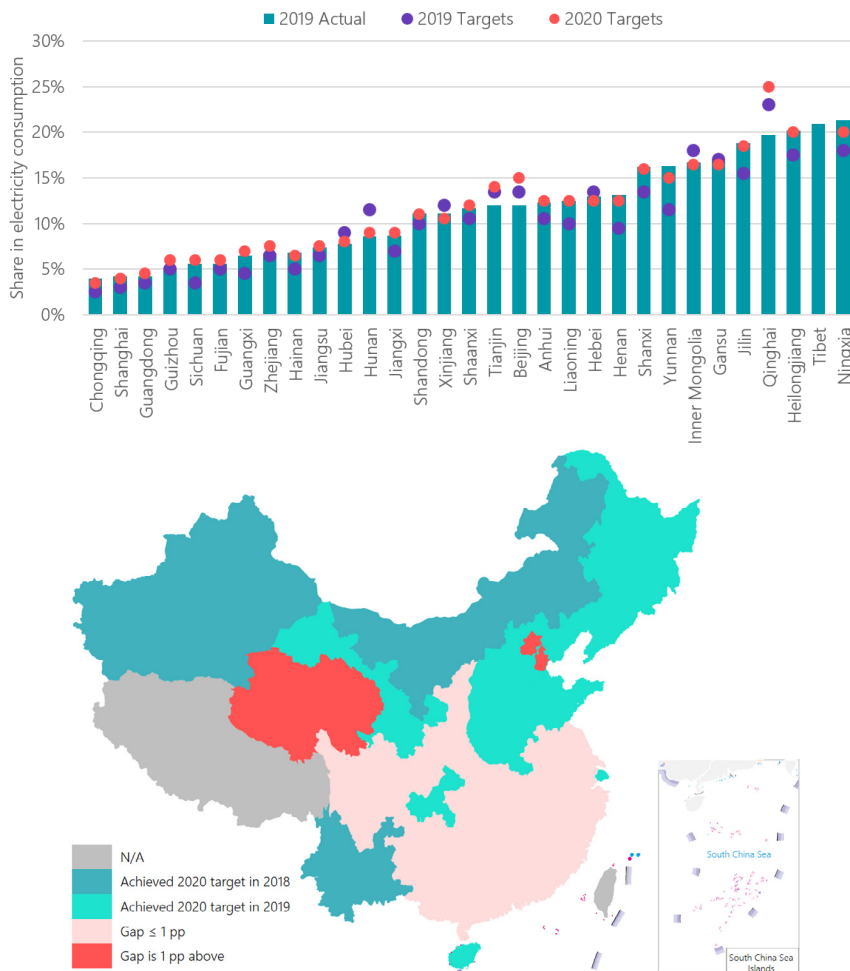
¹² NEA issued the *Clean Energy Consumption Action Plan (2018–2020)* in 2018. The Plan proposed national and provincial utilization rate targets of wind, PV and hydropower from 2018 to 2020. Besides, it puts forward control targets for wind and solar curtailment rates.

NEA renews the 2020 renewable power consumption targets

By 2019, 17 provinces that have completed the 2020 mandatory non-hydro renewable power consumption targets set by NEA ahead of schedule. Therefore, NEA renewed both the mandatory and incentive targets (10% or more) for 2020 based on provincial power consumption capacity, as well as local renewable power generation, consumption and import/export capacities, provided the share of non-fossil fuel in primary energy consumption would reach 15% in 2020 with certainty.¹³

The targets of majority provinces are increased because NEA proposes a basic principle that the new 2020 targets to be no less than the 2019 targets or the 2019 actual consumption figures. However, Xinjiang, Inner Mongolia, Gansu and Hebei are exceptions. These provinces export more electricity due to new long-distance transmission lines complete and increasing amount of inter-provincial electricity trading. Therefore, the targets of electricity receiving provinces at east coast regions are increased accordingly. Nevertheless, Qinghai has the biggest gap of 5.3 percentage points followed by Beijing of 3.0 percentage points and Tianjin of 2.0 percentage points. Most of the provinces in the Central and East China have a gap of no more than 1 percentage point.

Comparison of 2019 actual consumption of non-hydro renewable power and their 2019 and 2020 mandatory consumption targets



Source: 2019 targets data from NEA, May 2019; 2019 actual and 2020 targets data from NEA, May 2020

¹³ “国家发展改革委 国家能源局关于印发各省级行政区域2020年可再生能源电力消纳责任权重的通知,发改能源〔2020〕767号,”National Development and Reform Commission and National Energy Administration, 1 June 2020, accessed at http://www.nea.gov.cn/2020-06/01/c_139105253.htm.

2. Overview of the 2020 Government Work Report with focus of energy

On 22 May 2020, the third session of the 13th National People's Congress (NPC) opened in Beijing. Premier Li Keqiang released the *2020 Government Work Report* on behalf of the State Council.¹⁴ China's overall economic operation kept stable in 2019, with 6.1% of GDP increase. The discharge of major pollutants continued to decline, and the overall ecological environment improved.

In 2020, due to the big uncertainty of COVID-19 and economic and trading environment, China will not set a specific target for the GDP growth rate. It aims to stabilize employment, protect people's livelihood, support major project construction, and relieve the pressure of small and medium-sized enterprises. The Report also introduces the focus of energy sector in 2020. It covers three major aspects, energy security, electricity price reduction and the "two new and one major" construction.

Enhance energy reserve capability

The government aims to promote the efficient use of coal with low emission, develop renewable energy, improve the production, distribution and selling systems of oil, natural gas, and electricity. In particular, the government emphasizes to improve the energy reserve capability.¹⁵

Extend the policy of electricity prices reduction

In 2018 and 2019's Government Work Reports, the government put forward the target of reducing 10% of the general commercial and industrial electricity prices. In February 2020, the National Development and Reform Commission (NDRC) announced a 5% of reduction on the monthly electricity bill for all industrial and commercial consumers except energy-intensive industries to tackle the effects of COVID-19.¹⁶ The policy is in effect from 1 February to 31 June 2020. Nevertheless, the *Report* extends this policy from the end of June to the end of December. It may save RMB 92.6 billion for electricity consumers.¹⁷

Facilitate new infrastructure construction

"Two new and one major" construction is a key developing target in 2020. It refers to new infrastructure facilities, new urbanization process and major projects such as transportation and hydropower projects. Earlier in April 2020, the NDRC clarified the scope of new infrastructure, intelligent transportation and energy facilities are involved. The specific plan includes developing information network, expanding 5G application, promoting new energy vehicles, building charging piles, etc. This construction plan aims to maintain the stability of economy and employment in the short-term future, as well as to generate extra profits in the long-term run.¹⁸

Suggestions from the representatives of the National People's Congress



- To increase the 2030 target of non-fossil fuel in primary energy consumption from 20% to 25% or 30% ¹⁹
- To improve the construction and operational efficiency of oil and gas storage facilities by attracting the investment of large-scale enterprises and private investors ²⁰
- To set up the newly added capacity of wind power during the 14th Five-Year-Plan period (2021 to 2025) to be more than 150 GW and solar PV to be more than 300 GW ²¹ *
- To extend the grid connection deadline of new onshore wind power plants by six months, offshore wind farms by 12 months due to the delay of wind turbine component import ²² **
- To facilitate formulation of national hydrogen energy development strategy and to involve the content of hydrogen energy into the *14th Five-Year Plan for Energy Development* ²³

Background information

* In the *13th Five-Year Plan for Renewable Energy Development*, the minimum target of newly added wind power capacity is 80 GW and solar PV is 62 GW.²⁴

** In the *2020 Wind Power Feed-in Tariff* policy issued by the NDRC in May 2019, onshore wind power projects approved prior 2019 should connect to grids by 2020 in order to receive the national subsidies; projects approved between 2019 and 2020 should connect to grids by 2021 to receive the subsidies. Similarly, in offshore wind power sector, the national subsidy will be cut down or cancelled if the actual date of grid connection is delayed.²⁵

¹⁴ "2020政府工作报告全文," the State Council, 22 May 2020, accessed at http://tsg.changde.gov.cn/art/2020/5/23/art_21514_1560814.html.

¹⁵ "2020政府工作报告全文," the State Council, 22 May 2020, accessed at http://tsg.changde.gov.cn/art/2020/5/23/art_21514_1560814.html.

¹⁶ "国家发展改革委关于阶段性降低企业用电成本支持企业复工复产的通知, 发改价格〔2020〕258号," National Development and Reform Commission, 22 February 2020, accessed at http://www.gov.cn/zhengce/zhengceku/2020-02/22/content_5482141.htm.

¹⁷ "政府工作报告连续第三年提及降工商业电价, 阶段性降价延长," the State Council, 22 May 2020, accessed at https://www.sohu.com/a/396958576_260616.

¹⁸ "政府工作报告新词"两新一重": 新在哪里、重在哪里" the Beijing News, 23 May 2020, accessed at <https://baijiahao.baidu.com/s?id=1667475840789026541&wfr=spider&for=pc>.

¹⁹ "刘汉元: 建议2030年非化石能源占我国一次能源消费目标达到30%," The Beijing News, 25 May 2020, accessed at <https://finance.sina.cn/chanjing/gdxw/2020-05-25/detail-iirczymk3467060.d.html?vt=4>; "全国人大代表曹仁贤: 建议适度开征碳税 提高可再生能源占比," China News Service, 25 May 2020, accessed at <https://baijiahao.baidu.com/s?id=1667589877153357182&wfr=spider&for=pc>.

²⁰ "全国人大代表江寿林: 加大石油天然气储备能力建设力度," the China Securities Journal, 23 May 2020, accessed at http://www.cs.com.cn/xwzx/hg/202005/t20200523_6059854.html.

²¹ "全国人大代表曹仁贤: 建议适度开征碳税 提高可再生能源占比," China News Service, 25 May 2020, accessed at <https://baijiahao.baidu.com/s?id=1667589877153357182&wfr=spider&for=pc>.

²² "全国人大代表张传卫建议延长新能源并网期限," Solarbe, 25 May 2020, accessed at https://www.sohu.com/a/397468486_418320.

²³ "全国人大代表韩峰: 推进氢能产业发展 促进国家能源转型," China News Service, 21 May 2020, accessed at <http://news.sina.com.cn/o/2020-05-21/doc-iircuyvi4350779.shtml>.

²⁴ "国家发展改革委关于印发《可再生能源发展"十三五"规划》的通知, 发改能源[2016]2619号," National Development and Reform Commission, 19 December 2016, accessed at http://www.nea.gov.cn/2016-12/19/c_135916140.htm.

²⁵ "国家发展改革委关于完善风电上网电价政策的通知, 发改价格〔2019〕882号," National Development and Reform Commission, 27 May 2019, accessed at http://www.gov.cn/xinwen/2019-05/25/content_5394615.htm.

3. Challenges and policy suggestions of eco-friendly onshore wind power development in China



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Challenges

Onshore wind power in China has experienced rapid development since 2005. By 2019, the cumulative installed capacity of wind power reached 210 GW, among which more than 200 GW was onshore wind. Besides, the conflicts between environmental protection and onshore wind development are becoming more intense. In order to achieve an ecological civilization, it is important to recognize the most essential issues and enact policies to alleviate the conflicts in order to achieve eco-friendly development of onshore wind power.



Land-use policies are lack of scientific support and consistency, which dramatically increase the risk of wind power investments regionally. Under the ecological civilization strategy, all levels of government carry out great efforts to avoid environmental damage. However, it is an overreaction sometimes. For instance, some specific provinces stop the construction of new onshore wind farms or forbid new wind farms at an altitude over 500 meters without sufficient scientific evidence. Moreover, the *China Ecological Conservation Red Line* (ECRL) policy and relevant forest protection policies issued in the past few years bring big uncertainty on availability of land-use, because some of the land approved for new wind power plants become ineffective. As a result, the built-up wind farms are demolished, and approved wind projects are not allowed to start construction.



The environmental concerns are poorly understood in some respects due to the research gap. For instance, the effects of wind farm development on migratory birds has received significant attention, Anhui and Hunan governments require new onshore wind farms to keep away from bird migratory routes with official policies issued. However, it is a big challenge for wind power developers because of the missing GIS data and operational methods. Moreover, the current national and provincial energy planning rarely consider the land environmental constraints. How to build an effective cooperation mechanism between energy and ecological researchers, as well as to integrate land ecological constraints into energy planning deserve deeper exploration and study.



China is still lacking of technical guidelines on ecological restoration. Ecological restoration is very important for environmental protection after the wind power plant completes. Liaoning is the only province that releases the *Technical Rule for Ecological Protection and Restoration of Wind Farms* in China. More provinces such as Zhejiang and Anhui issue policies focusing on conservation of water and soil, as well as green recovery. Nevertheless, there is still a considerable gap between the current environmental conservation measures and the required ecological restoration measures.

Policy suggestions

- To keep a rational and positive view on the eco-effects of onshore wind development in overall
- We recommend local governments to establish an information platform of eco-friendly wind farm site selection that coordinate ecological and environmental data together with wind resources information
- Strengthen scientific research on environmental impacts of wind power development through a stronger support from the National Natural Science Foundation of China and relevant funding
- To establish national ecological restoration technical guidelines, clarifying the responsibility of wind power developers in these tasks and setting up dedicated funds to support

4. Policy monitoring

20 May 2020

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Big-five owned coal power plants rearranged in Northwest China

Notice to Issue the First List of Coal Power Plants under the First Batch of Pilots for Regional Integration of Stated-owned Coal Power Assets

In order to centralize the ownership of coal power plant assets in China, the State-owned Assets Supervision and Administration Commission of the State Council (SASAC) carries out an ownership transfer pilot within the big-five power enterprises.²⁶ It starts with five provinces in Northwest China. After the re-integration process, each enterprise will own majority coal power plants in a single province compared to the other four. Specifically, China Huaneng leads Gansu, China Datang leads Shaanxi, China Huadian leads Xinjiang, State Power Investment Corporation leads Qinghai and China Energy Investment Corporation leads Ningxia. The ownership of 40 coal power plants will be transferred, of which 38 should complete by June 2020.

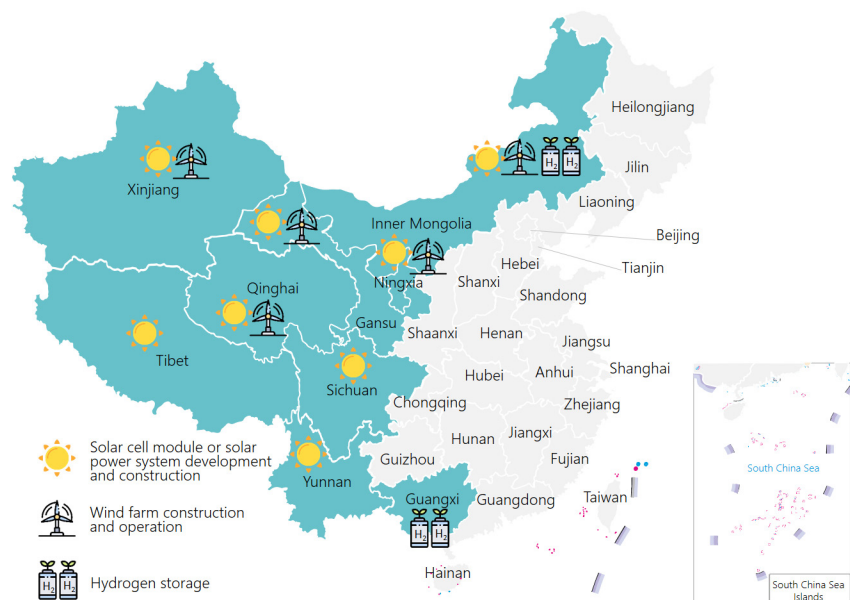
23 April 2020

http://www.gov.cn/zhengce/zhengceku/2020-04/28/content_5506990.htm

EIT incentive policy for enterprises in western China extended

Notice of the Continuation of the Enterprise Income Tax Policy for the Western Development, MoF, STA and NDRC Order [2020] No. 23

The Chinese government extends the policy of enterprise income tax (EIT) partial exemption for specific enterprises in the western region by ten years. The qualified enterprise should have over 60% of annual income from business that is listed in the *Catalogue of Encouraged Industries in the Western Region*. From 1 January 2021 to 31 December 2030, these enterprises will enjoy a favor EIT rate of 15%. The standard EIT rate in China is 25%.



Source: National Development and Reform Commission (NDRC), August 2014

²⁶ Big-five refers to the five major stated-owned power generation enterprises in China. It includes China Huaneng Group Co., Ltd., China Datang Corporation Ltd., China Huadian Corporation Ltd., State Power Investment Corporation Limited and China Energy Investment Corporation.

23 April 2020

http://www.gov.cn/zhengce/zhengceku/2020-04/23/content_5505502.htm

MoF extends the subsidy of new energy vehicles to 2022

Notice on Improving the Subsidy Policy for the Promotion of New Energy Vehicles, MoF Construction [2020] No. 86

The Ministry of Finance (MoF) extends the expiring date of new energy vehicle²⁷ subsidies from year-end 2020 to the year-end 2022. The subsidizing standard of these vehicles in 2020 will be 10% less than 2019, 2021 to be 20% lower than 2020 and 2022 to be 30% lower than 2021. However, the subsidy intensity of public transport vehicles remains in 2020, followed by 10% of reduction in 2021 and 20% reduction in 2022 compared to the previous year. Public transport vehicles include urban bus, taxi (including mobile transportation platform), as well as environmental sanitation, urban logistics, postal express, airport transport and government vehicles.

²⁷ New energy vehicles include battery electric vehicles, plug-in hybrid vehicles, fuel cell vehicles, hydrogen vehicles and other specific new technology vehicles.