

# China Energy Policy Newsletter

## February 2018

Energy System Transition China Working Group

### Contents

1. China energy transition updates
2. Policy monitor

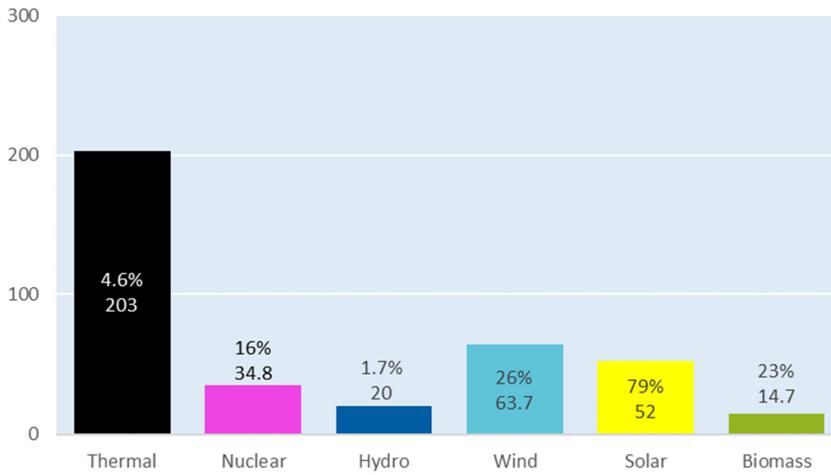


可再生能源推动能源革命研究  
**Boosting Renewable Energy**  
*As part of China's energy revolution*

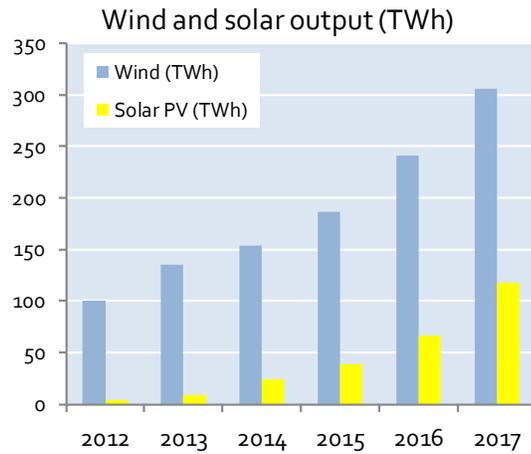
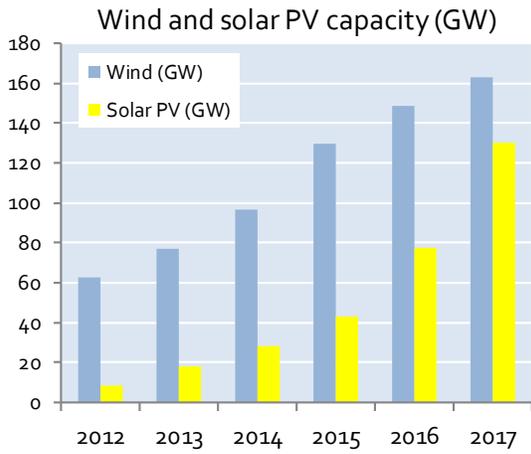
## 1. China energy transition updates

- **Fossil fuel statistics show transition from coal to gas:** China's raw coal output in 2017 grew 3.2%.<sup>1</sup> In contrast, the economy grew 6.9% and electricity consumption grew 6.6%.<sup>2</sup> Natural gas output surged 8.5%, as the country continued efforts to switch from coal to natural gas and other fuels.<sup>3</sup>
- **China saw significant air quality improvements** in 2017, particularly during the winter months of November and December. In Beijing, PM<sub>2.5</sub> levels for the year fell 20.5% versus the prior year, according to the Ministry of Environmental Protection (MEP).<sup>4</sup> MEP reported that Beijing met its target for reducing PM<sub>2.5</sub> established by the 2013 Action Plan for Air Pollution Control and Prevention.
- Due to **severe heat shortages** in Hebei and rushed implementation of the no-coal zone in a region surrounding Beijing, MEP was forced to allow burning of coal in certain rural areas where coal-to-gas or coal-to-electricity projects had fallen behind. MEP announced a new policy for 2017-2019 that aims to correct some of these shortcomings. (See policy monitor below.)
- **Electricity sector shows gradual transition towards services/consumption:** In 2017, the total electricity consumption rose 6.6%, of which secondary industrial consumption rose 5.5%. Tertiary industry power consumption rose over 10% and household electricity consumption rose 7.8%, figures that indicate a continuing shift in electricity consumption towards the service and consumption sectors, a key element of China's energy transition.<sup>5</sup>
- **Renewable energy capacity grew strongly in 2017:** China added 53 GW of solar PV, and 15.6 GW of wind in 2017, raising installed capacity to 163 GW of wind and 130 GW of solar PV. While most parts of China suffer from overcapacity of coal-fired power, the country nevertheless added 46 GW of thermal power generation.<sup>6</sup> The government announced new feed-in-tariffs for 2018 as well as new policies on distributed solar market pilots. (See policy monitor.) Regarding renewable additions, it was especially notable that solar PV capacity continued to grow strongly throughout the year, even after tariff reductions, while wind additions continue to decline from their peak in 2015 at 30 GW. Even if solar capacity additions slow in 2018, solar capacity in China is likely to overtake wind by 2020.
- **Renewable output growing, and share increasing modestly:** According to preliminary data from China's National Bureau of Statistics, for the full year of 2017, China's total electricity output rose 5.7%, of which thermal power rose 4.6%. Among non-fossil energy, nuclear rose 16.3%, hydro rose 1.7%, wind rose 26%, and solar surged 79%. Thermal power provided 73.5% of energy—the figures do not break out coal's share of this figure. Wind and solar combined provided 6.6% of all electricity output.<sup>7</sup> (Subsequent statistics may show higher renewable figures.)

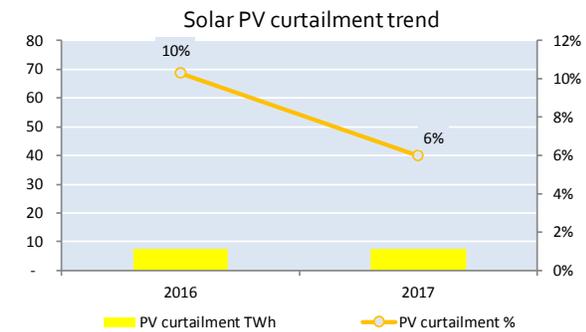
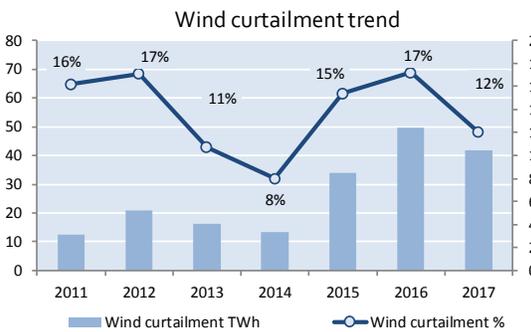
NBS and NEA: 2017 incremental electricity production by fuel versus 2016 (TWh, and % increases vs 2016)



Source: National Bureau of Statistics and NEA, January 2017



Source: NEA



Source: NEA

- **Power plant overcapacity alert systems in place for solar, wind, coal:** In December the government established a red-yellow-green alert mechanism designed to slow solar installations in provinces with high curtailment or limited transmission. Provinces of Xinjiang, Gansu and Ningxia (north-west of China) are labeled red, which will be temporarily prohibited from receiving annual solar construction quotas. Provinces labeled as yellow like Guangdong, Fujian, Hainan, Yunnan, Tibet, Qinghai, Sichuan, Chongqing, Shanxi, Shaanxi, Inner Mongolia, Shanghai and Beijing are allowed no more than 50% of the annual construction quota.
- While the alert systems for each sector are unique, there are now red-yellow-green alert systems for coal (set by the Coal Power Early Warning of Risk on Planning and Construction for 2020), solar (center), and wind (set by the Wind Power Investment Monitoring and Warning Results of in 2017) as well. As of for coal projects, all the approval and construction of new self-use coal power projects (including captive coal-fired power units) will be postponed nationwide, except for those in Hunan and Hainan provinces. As of for wind projects, provinces of Xinjiang, Inner Mongolia, Heilongjiang, Jilin, Gansu, Ningxia and northern part of Hebei province (the Three Norths region) will be temporarily prohibited from approving, constructing, and connecting new wind projects.
- **China's new Environmental Protection Tax Law** came into effect on 1 January 2018, replacing the prior environmental levy and directing more of the funds collected to provincial governments. An analysis performed for GIZ showed that even though the tax doubles the cost of emitting sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>), *the tax will have a miniscule effect on the price of coal power*, and do little to incentivize either installation of emissions controls or fuel switching to wind or solar.

## 2. Policy monitor

Category	Policy name	Date of announcement
Power system reform	Notice on the Publication of Pricing Measures for the Power Transmission of Regional Power Grids (Trial), Pricing Measures for the Power Transmission of Specific Inter-Provincial and Inter-Regional Power Transmission Project (Trial) and Guiding Opinion on Provincial Distribution Pricing and Pricing for Incrementally-added Distribution, NDRC Pricing Rule [2017] No.2269	2017-12-29
Power market reform	Supplemental Notice on Development of Pilot Power Markets for Distributed Generation, NDRC NEA [2017] No. 2150	2017-12-28
Environment	Regulation on the Implementation of the Environmental Protection Tax Law of the People's Republic of China, Order No. 693 of the State Council	2017-12-25
Environment	Notice on the Revenue Ownership of the Environmental Tax, State Council [2017] No.56	2017-12-22
Solar	Notice on the Price Policy of 2018 Solar PV Power Projects, NDRC Pricing Rule [2017] No. 2196	2017-12-19
ETS	Notice on the Construction Scheme of National Carbon Emission Allowance Trading Market (Power Sector), NDRC Climate Rule [2017] No.2191	2017-12-18
Solar	Notice on Constructing the Market Monitoring and Evaluation Mechanisms for the Healthy and Orderly Development of the Solar PV Industry, NEA New Energy [2017] No.79	2017-12-08
Solar	Notice on Issuing the List of 2017 Solar PV Top-Runner Bases and Relevant Requirements, NEA New Energy [2017] No.76	2017-11-30
Power grid	Notice Regarding Normative Implementation of the Second Batch of Incremental Distribution Power Grid Pilots, NDRC Economic Reform [2017] No.2010	2017-11-21
Power system reform	Notice on the Work Plan to Improve the Compensation (Market) Mechanism of Power System Ancillary Services, NEA Supervision [2017] No.67	2017-11-15
Environment	Notice to Accomplish the Work of Linking Pollutants Discharge Permit Scheme and Environmental Assessment Scheme, MEP Environmental Assessment [2017] No.84	2017-11-14

## Notice on the Publication of Pricing Measures for the Power Transmission of Regional Power Grids (Trial), Pricing Measures for the Power Transmission of Specific Inter-Provincial and Inter-Regional Power Transmission Project (Trial) and Guiding Opinion on Provincial Distribution Pricing and Pricing for Incrementally-added Distribution, NDRC Pricing Rule [2017] No.2269

2017-12-29

The document regulates the method for setting the price on regional power grids and for specific inter-provincial and inter-regional projects. The document also provides guidance on price setting methods for local distribution grids and for incrementally added distribution.

[http://www.ndrc.gov.cn/gzdt/201801/t20180103\\_872989.html](http://www.ndrc.gov.cn/gzdt/201801/t20180103_872989.html)

The publication of "Two Measures and One Suggestion", establishes a framework for regulating and monitoring transmission and distribution (T&D) prices. The framework includes inter-provincial and inter-regional power transmission projects, regional power grids, provincial power grids, local power grids and incremental additions to distribution grids. T&D pricing reform thus represents the most significant power market reform to be fully implemented since the publication of Document No. 9 on Deepening Reform in the Power Sector in March 2015.

The new T&D price-setting process involves several steps. First, regulators establish an allowed revenue level on a "cost plus reasonable profit" basis. Transmission prices for regional grids will be based on a two-part power price. The transmission price component reflects the cost of power transmission services provided by regional power grids, calculated in proportion to actual average load of power transmission lines of regional power grids relative to their maximum transmission capacity. The capacity charge component reflects the cost of reliability services such as emergency reserve that regional power grids provide to provincial power grids, and accounts for emergency support capacity and peak-load contributions to provincial power grids. The cost of the capacity charge is shared among provincial power grids within each region.

Specific power transmission projects provide power transmission and grid-connection services exclusively for inter-provincial and inter-regional power transmission. Such projects support major national energy strategies such as West-to-East electricity transmission projects and Xinjiang electricity export projects, and are reviewed and approved by the central government. The initial power transmission price for individual projects will be approved in accordance with power price laws during the whole operation period of the project. After the power price is set, regular project cost audits will be carried out, and an assessment and adjustment system established. The transmission price for such projects will depend on function: those that serve as grid connectors will be priced on a capacity charge basis, while those that perform power transmission functions will be evaluated based on power transmission prices.

Pricing for provincial power grids and incremental power distribution networks will be managed by the provincial department of pricing. Pricing for local power grids and incremental power distribution networks is complex. Distribution prices are based on several methods, including tendering, allowed revenue, price caps, and competitive bidding for large scale projects.

## Supplemental Notice on Development of Pilot Power Markets for Distributed Generation, NDRC NEA [2017] No. 2150

2017-12-28

The document provides additional guidance on the application of power market pilots.

Each province will select one or two regions to apply for distributed generation pilots, which in principle are aimed at allowing distributed solar and other distributed generation facilities to sell power locally while still receiving the subsidy. (The design of the subsidy for distributed solar is currently most generous for self-consumed power by customers on commercial power tariffs, but this indirectly discourages installation of solar on buildings with low or unpredictable energy consumption or by customers on non-commercial tariffs.) The pilot application deadline will be extended to 31 March 2018, and pilots should be initiated no later than July 2018. Shortlisted projects must ensure a minimum 75% of local consumption of electricity. Projects with 100% local consumption that forego subsidies will have no cap on installed capacity. Otherwise the limit is 20 MW for single project connecting to 35-kV and below grids and between 20 MW and 50 MW for single project connecting to 110-kV and below grids. Meanwhile, the pilots are required to pay a distribution fee in accordance with their grid connection voltage levels. Nevertheless, the pilots would continue to receive subsidies of feed-in-tariffs, but the amount per kWh would be reduced by no less than 10% for 20 MW and below pilots and no less than 20% for 20 MW to 50 MW pilots.

---

[http://www.gov.cn/xinwen/2018-01/03/content\\_5252800.htm](http://www.gov.cn/xinwen/2018-01/03/content_5252800.htm)

## Regulation on the Implementation of the Environmental Protection Tax Law of the People's Republic of China, Order No. 693 of the State Council

2017-12-25

The document sets clear rules regarding three aspects of “Table of Taxable Items and Tax Amounts for Environment Protection Tax”, which took effect 1 January 2018.

- 1. Solid waste:** The amount of solid waste discharge will be calculated as the difference between the storage amount, disposal amount, and comprehensive utilization amount of monthly taxable solid waste output. The detailed scope of other solid waste in the tax table will be determined by provincial, municipal, and independent municipal standing committees of the People’s Congress, and report to the Standing Committee of National People’s Congress and the State Council.
- 2. Tax exemption:** Taxable pollutants of lawfully built urban and rural centralized sewage treatment facilities that operate within emission standards will be temporarily exempt from the Environment Protection Tax. The document clarifies that exempt facilities are those that provide domestic sewage (sludge) treatment services to the public, and excludes industrial parks and industrial development zones. Large-scale livestock farms also not exempt. Farms that carry out comprehensive utilization and harmless disposal of livestock waste will be exempt.
- 3. Coordination between departments:** Tax authorities should perform taxpayer identification in accordance with information on pollutant discharging institutions provided by the environment protection administrative departments. Both of them organize some free tax counselling, training, and consulting to inform taxpayers about the new system. When departments discover discrepancies between declared emissions or wastes, they should contact tax authorities for further action.

---

[http://www.gov.cn/zhengce/content/2017-12/30/content\\_525](http://www.gov.cn/zhengce/content/2017-12/30/content_525)

## Notice on the Revenue Ownership of the Environmental Tax, State Council [2017] No.56

2017-12-22

The Notice clarifies the ownership of tax income regulated under the Environmental Protection Tax Law.

[http://www.gov.cn/zhengce/content/2017-12/27/content\\_525](http://www.gov.cn/zhengce/content/2017-12/27/content_525)

To encourage local environmental protection and improvement actions, and to increase the investment in environmental protection, the tax income regulated under the Environmental Protection Tax Law of the People's Republic of China will be fully treated as local revenue, and go to provincial government financial accounts. Prior to the Law, the central government took a 10% share of the pollution levy.

## Notice on the Price Policy of 2018 Solar PV Power Projects, NDRC Pricing Rule [2017] No. 2196

2017-12-19

The document announces the new Feed-in-Tariff for centralized and distributed solar PV in 2018 and 2019.

[http://www.ndrc.gov.cn/zcfb/gfxwj/201712/t20171222\\_871322.html](http://www.ndrc.gov.cn/zcfb/gfxwj/201712/t20171222_871322.html)

The feed-in tariff (FIT) for solar PV commissioned after 1 January 2018 will be reduced. Category I resource regions will now be RMB 0.55/kWh, versus 0.65 previously. Category II will be RMB 0.65/kWh versus 0.75 previously. Category III will be RMB 0.75/kWh, versus 0.85 previously. From 2019, all solar PV power projects that are included into the annual national construction plan and enjoy the fiscal subsidies shall execute corresponding benchmarking price according to commission dates. For distributed solar PV power projects commissioning after January 1, 2018 and adopting the "generating for self-use, grid-connecting the surplus" tariff, the subsidy standard will adjust from RMB 0.42/kWh to RMB 0.37/kWh (subject to include VAT tax). The benchmarking price for village level poverty alleviation solar PV plants (0.5 MW and smaller), and subsidy standard for household level poverty alleviation solar PV systems will remain unchanged at RMB 0.42/kWh.

## Notice on the Construction Scheme of National Carbon Emission Allowance Trading Market (Power Sector), NDRC Climate Rule [2017] No.2191

2017-12-18

The Notice announces the official initiation of national carbon market.

[http://www.ndrc.gov.cn/gzdt/201712/t20171220\\_871134.html?from=single](http://www.ndrc.gov.cn/gzdt/201712/t20171220_871134.html?from=single)

The Notice states the carbon market will be established in three phases. In the foundation phase, China will complete a unified national data reporting system, registration system and trading system in about a year. Next, in the simulated-operation phase, also lasting roughly one year, the power industry will conduct simulated allowance trading. In the third phase, an allowance spot market between trading parties in the power generating industry will start functioning, and include China Certified Emission Reduction (CCER) into the national carbon market as soon as possible.

The establishment of a national carbon market includes three main regulations and four supporting systems. They are the regulation of carbon emissions monitoring, reporting, and verification (MRV), regulation of allowance management of major emitting units, regulation of markets, data, settlement, and market maintenance. Hubei province will manage the operation and maintenance of the registration system, Shanghai will organize and carry out historical data examination, allowance distribution and contract implementation works in coordinate with the national government.

Initial market participants will be the major emission units in power generating industry. Participating principals will be enterprises or other economic organizations (including power plants at industrial parks used for self-consumption) whose annual emissions reach 26,000 tons of CO<sub>2</sub> (comprehensive energy consumption of about 10 thousand tons of standard coal equivalent). The development and reform

department of the State Council and relevant departments will jointly supervise the carbon market at different levels.

*The allocation of emission allowances is based on a baseline emission per kWh for the involved power units, which in practice results in a redistribution of costs between coal power plants, thus favoring more efficient coal power units. This allocation does not provide incentives to dispatch additional renewable energy or to invest in new renewable energy facilities.*

## **Notice on Constructing the Market Monitoring and Evaluation Mechanisms for the Healthy and Orderly Development of the Solar PV Industry, NEA New Energy [2017] No.79**

2017-12-08

**The document establishes an evaluation mechanisms of the solar PV industry, aiming to limit approvals of solar PV projects in regions experiencing high curtailment.**

[http://zfxgk.nea.gov.cn/auto87/201712/t20171214\\_3078.htm](http://zfxgk.nea.gov.cn/auto87/201712/t20171214_3078.htm)

The Notice applies to both general solar PV plants and Top-Runner projects, establishing a 100-point scale for evaluating regions. For regions marked red (those that score below 60, or with solar curtailment above 10%), NEA should pause issuing construction quotas for new solar projects—except for new energy bases connected to government-approved ultra-high voltage (UHV) power transmission corridors. For regions marked orange (scoring 60-80 points), the NEA should issue no more than 50% of their annual construction quota. For regions marked green (80 points and above), the NEA will issue annual construction quotas according to the plan.

In the first evaluation period, more than 50% of regions have received either Red or Orange alert. This time the mechanism also includes the utilization status of hydropower and wind power, with a baseline of 95% utilization for hydro and 10% wind curtailment rate. The power price will be the only evaluation standard in the assessment of Top-Runner solar PV projects, and such assessments will be carried out according to the gap between the average annual FiT and local solar PV benchmark FiT in the same period of time.

## **Notice on Issuing the List of 2017 Solar PV Top-Runner Bases and Relevant Requirements, NEA New Energy [2017] No.76**

2017-11-30

**The document provides the list of 2017 solar PV Top-Runner bases.**

[http://zfxgk.nea.gov.cn/auto87/201711/t20171130\\_3062.htm](http://zfxgk.nea.gov.cn/auto87/201711/t20171130_3062.htm)

The Notice confirmed the list of solar PV Top-runner bases in year 2017, including a total of 10 application Top-runner bases with 8-10 GW. The installed capacity of a single Top-Runner base should between 500 MW and 1 GW. Technically, the difference between conversion efficiency of mono-polysilicon/polysilicon cells and components of Top-runners should be at least 1.5%. Applications for Top-Runner bases should finish bidding before March 31, 2018, and should all start construction before June 30 of the same year, hence finish construction of total capacity and achieve grid connection before December 31, 2018. Technical Top-runner bases should finish bidding no later than April 30, 2018, all should start construction before March 31, 2019, and finish construction and achieve grid connection before June 30 of that year.

## Notice Regarding Normative Implementation of the Second Batch of Incremental Distribution Power Grid Pilots, NDRC Economic Reform [2017] No.2010

2017-11-21

The document lists the second batch of incremental distribution power grid pilots.

This Notice published 89 projects such as the pilot project of Qinhuangdao economic and technological development zone as the second batch of incremental distribution power grid business pilots.

[http://www.ndrc.gov.cn/zcfb/zcfbtz/201711/t20171124\\_867792.html](http://www.ndrc.gov.cn/zcfb/zcfbtz/201711/t20171124_867792.html)

## Notice on the Work Plan to Improve the Compensation (Market) Mechanism of Power System Ancillary Services, NEA Supervision [2017] No.67

2017-11-15

This document clarifies the timeline on the compensation for ancillary services in the power sector. Ancillary services in China had previously been set at fixed, low levels, and were typically performed only by coal plants.

The Notice proposes the three phases to promote compensation mechanisms of power ancillary services. From 2017 to 2018, we should further perfect current relevant regulations, implement requirements of relevant documents, enhance supervision and inspection and ensure fair and integrity. From 2018 to 2019, we should explore to establish the sharing mechanism for ancillary service participation for power users that involving in mid- to long-term power trading. From 2019 to 2020, we should carry out construction of power ancillary service market in cooperation with spot market pilots. The Notice includes electricity users into the ancillary service market for the first time, encourages determining responsible units for ancillary service through bidding, and plans to promote inter-provincial and inter-regional power ancillary service compensation mechanisms according to types of non-market-oriented planned power (or bilateral negotiation power) and market-oriented power transactions.

[http://zfxgk.nea.gov.cn/auto92/201711/t20171122\\_3058.htm](http://zfxgk.nea.gov.cn/auto92/201711/t20171122_3058.htm)

## Notice to Accomplish the Work of Linking Pollutants Discharge Permit Scheme and Environmental Assessment Scheme, MEP Environmental Assessment [2017] No.84

2017-11-14

The document standardizes the interaction between the pollution discharge permit scheme and the environmental assessment scheme.

- Projects that need to apply for a pollutant discharge permit must now apply before pollutant discharge begins, and environmental impact assessment is an important reference for applying the permit. In accordance with technical standards of the permit, the assessment needs to evaluate basic information of the project such as sewage discharge procedures, types of pollutants, and pollution control measures and equipment. The approval of the permit will be conditional on meeting requirements including amount of discharge, concentration of discharge, and number of discharge outlets. Any projects that discharge pollutant without a permit or not according to the permit, facility construction companies are not allowed to issue acceptance approval documents for project inspection, essentially forbidding operation of facilities.
- For projects with phased construction, the assessment should clearly specify the requirements of each stage. Construction units should apply for separate permit for each stage according to assessment requirements. Permits for retrofits and expansions will be assessed using prior permit compliance as the primary evaluation criterion.
- When a permit-holder makes major revisions to the nature, scale, location and environmental protection measures of a project, the construction unit must re-apply for assessment documents and to submit them through a permit re-application procedure.

[http://www.mep.gov.cn/gkml/hbb/bg/201711/t20171122\\_426716.htm](http://www.mep.gov.cn/gkml/hbb/bg/201711/t20171122_426716.htm)

## Abbreviations

MEP	Ministry of Environmental Protection	环保部
MoF	Ministry of Finance	财政部
NDRC	National Development and Reform Commission	国家发展与改革委员会
NEA	National Energy Administration	能源局
MoST	Ministry of Science and Technology	科学技术部
MHURD	Ministry of Housing and Urban-Rural Development	住房和城乡建设部
MLR	Ministry of Land and Resources	国土资源部
MWR	Ministry of Water Resources	水利部
SAT	State Administration of Taxation	国家税务总局
	The State Council	国务院
MIIT	Ministry of Industry and Information Technology	工业和信息化部
MoT	Ministry of Transportation	交通运输部
NBS	National Bureau of Statistics	国家统计局
SOA	State Oceanic Administration	国家海洋局

## References

---

<sup>1</sup> [http://www.stats.gov.cn/tjsj/zxfb/201801/t20180118\\_1574957.html](http://www.stats.gov.cn/tjsj/zxfb/201801/t20180118_1574957.html)

<sup>2</sup> <http://finance.people.com.cn/n1/2018/0122/c1004-29779353.html>; <http://news.sina.com.cn/o/2018-01-22/doc-ifyqtycx1519355.shtml>

<sup>3</sup> [http://www.stats.gov.cn/tjsj/zxfb/201801/t20180118\\_1574957.html](http://www.stats.gov.cn/tjsj/zxfb/201801/t20180118_1574957.html)

<sup>4</sup> [http://www.sohu.com/a/214331493\\_120000](http://www.sohu.com/a/214331493_120000)

<sup>5</sup> [http://www.nea.gov.cn/2018-01/22/c\\_136914154.htm](http://www.nea.gov.cn/2018-01/22/c_136914154.htm)

<sup>6</sup> [http://www.nea.gov.cn/2018-01/22/c\\_136914154.htm](http://www.nea.gov.cn/2018-01/22/c_136914154.htm)

<sup>7</sup> The figures of total, thermal and nuclear electricity are from NBS, the figures of renewable electricity including hydro, wind, solar and biomass are calculated from NEA figures. See: [http://www.cs.com.cn/xwzx/201801/t20180118\\_5673641.html](http://www.cs.com.cn/xwzx/201801/t20180118_5673641.html); <http://news.bjx.com.cn/html/20180124/876428.shtml>.