Measures for resolving curtailment of hydro, wind and PV power generation

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National Development and Reform Commission

National Energy Administration

Notice on publication of the "Measures for resolving curtailment of hydro, wind and PV power generation"

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To the Development and Reform Commission, Energy Bureau, Price Bureau, Economic Commission (Commission of Industry and Information Technology, Depts. of Industry and Information Technology) of all provinces, autonomous regions and municipalities directly under the central government, and the Xinjiang Production and Construction Corps, local branches of the NEA, State Grid Corporation of China, China Southern Power Grid Corporation, and Inner Mongolia Power Corporation：

In order to implement Xi Jinping thought on socialism with Chinese characteristics for the new era, to promote energy production and consumption revolution, to implement requirements from the "government work report", and to resolve the curtailment of hydro, wind, and PV power generation as soon as possible, the National Development and Reform Commission and the National Energy Administration organized the formulation of the "Measures for resolving curtailment of hydro, wind and PV power generation", and these are hereby issued to you。All administrative areas and relevant agencies are requested to attach great importance to the consumption of renewable electricity, to actively implement the tasks as required by the program, to take effective measures to improve the level of renewable energy utilization, and to advance solutions that will achieve practical results in resolving the issue of curtailment of hydro, wind, and PV power generation。

Annex：Measures for resolving curtailment of hydro, wind and PV power generation

National Development and Reform Commission and the National Energy Administration

November 8, 2017

Annex

Measures for resolving curtailment of hydro, wind and PV power generation

In order to implement Xi Jinping's new era of socialism with Chinese characteristics, to promote an energy production and consumption revolution, to implement requirements of the "government work report", to ensure that the non-fossil energy development goals set forth in the "13th Five-Year Plan" are fulfilled, and to resolve the curtailment of hydro, wind, and PV power generation as soon as possible, the measures introduced here were developed。

1. Overall requirements

(i) Guiding ideology

Fully implement the spirit of the 19th NPC, and under the guidance of Xi Jinping thought on socialism with Chinese characteristics for the new era, earnestly implement decision-making by the Central Committee of the Communist Party and the State Council, focus on the "five in one" overall layout and the "four comprehensives" strategy, firmly establish the concept of innovative, coordinated, green, open and inclusive development, follow the strategy of the energy production and consumption revolution, fully establish the concepts of green energy development and of prioritized development and utilization of renewable energy, strictly implement the system for guaranteed full purchase of renewable electricity as stipulated in the "Renewable Energy Law", and under the premise of ensuring the safety and stability of the power grid, achieve grid access for renewable electricity without any discrimination or barriers, in order to create a very good market environment for the sustainable and healthy development and innovation of renewable energy。

(ii) Basic principles

Adhere to a combination of government steering and market guidance。 Strengthen the binding nature and the enforcement of energy-related planning, strengthen interim and ex post supervision, and establish and improve supervision and assessment mechanisms for the consumption of renewable electricity。 Strive to improve the market system and market mechanisms, give full play to the decisive role of the market in the allocation of resources, and encourage the full consumption of renewable energy through competitive market-based mechanisms。

Adhere to a combination of national co-ordination and local utilization。 Further strengthen the coordination of localities where renewable power is generated and where it is consumed; and at the national level, co-ordinate joint balancing between

power supply and demand, between various electric power products, and between different administrative areas。 Fully tap the local demand for energy in administrative areas where renewable power is produced, accelerate electrification to replace other energy sources, and encourage the prioritization of local consumption of renewable power generation。

Adhere to a combination of regulation of power generation sources and optimization of transmission lines。 Adhere to simultaneous centralized and distributed modes, strive to optimize the layout of renewable power development, co-ordinate the development of thermal power and renewable power, and reasonably control the scale and pace of renewable power development。 Promote the synchronized planning and simultaneous construction of development of renewable power generation bases and power transmission lines, accelerate construction of peak regulating power sources, and promote coordinated development of the power grid and power supply sources。

Adhere to a combination of technological innovation and system reform。 Accelerate and advance the deep integration of renewable energy and information technology, comprehensively enhance the technical level for absorbing renewable electricity in power generation sources, power grids, and the various electricity consumers, and explore new business formats and new models for renewable energy consumption。

Accelerate the pace of construction of the electric power market, improve the trading mechanisms, the service mechanisms and price mechanisms that facilitate the consumption of renewable electricity, and constantly improve the market competitiveness of renewable power generation。

(iii) Overall objectives

In 2017, curtailment of hydro, wind and PV power generation in administrative areas with severe limitations for the consumption of renewable electricity has been significantly alleviated。 Yunnan and Sichuan strive to reach 90% utilization rates of hydropower。 In Gansu and Xinjiang the curtailment rate of wind should fall to about 30%, and in Jilin, Heilongjiang and Inner Mongolia the curtailment rate of wind should fall to about 20%。 In Gansu and Xinjiang the curtailment rate of PV should fall to about 20%, and Shaanxi and Qinghai shall strive to limit curtailment rates of PV to below 10%。 In other areas, the annual utilization of wind and PV power generation should reach the minimum guaranteed full-load hours purchased as set by the National Energy Administration for 2016 (or curtailment of wind below 10%, and curtailment of PV below 5%)。 The energy management departments of all provinces (autonomous regions, directly-controlled municipalities) shall timely provide a summary of policies measures for and effectiveness at resolving the issue of curtailment of hydro, wind, and

PV power generation, and further set targets for resolving curtailment of hydro, wind, and PV power generation for the following year. After the NDRC and the NEA have assessed annual work plans and targets of provinces (autonomous regions, directly-controlled municipalities), ensure that total power curtailed and curtailment rates of hydro, wind, and PV power generation decrease year by year。 By 2020, curtailment of hydro, wind and PV power generation will be effectively solved nationwide。

2. Perfecting the mechanism for renewable energy development and utilization

(iv) Comprehensively establish the concept of green energy consumption。 Energy management departments at all levels of government, power grid companies, and renewable energy development companies must follow the strategy of the energy production and consumption revolution, adhere to the green energy development, and make improvement of the level of renewable energy utilization a key task in energy development。 Administrative areas with rich and concentrated renewable energy resources shall increase efforts for local consumption of renewable energy, and take a variety of measures to expand the consumption of renewable electricity。 Provinces (autonomous regions, directly-controlled municipalities) that have room in their market for the consumption of renewable electricity shall, through trans-provincial trans-regional power transmission channels, and in particular UHV transmission channels, actively accept inputs of renewable electricity from outside the administrative area, take initiative to reduce local coal-fired power generation, and free up market space in order to expand the use of renewable energy。

(v) Perfect the monitoring and evaluation systems for renewable energy development and utilization targets。 Energy management departments of provinces (autonomous regions, directly-controlled municipalities) shall, on the basis of the "13th Five-year Plan for Energy Development" as published by the NDRC and the NEA, as well as specific energy-related plans and the local renewable energy development goals as determined in the administrative area's local "13th Five-year Plan for Energy Development" and as approved by the NEA, propose annual targets for the proportion of renewable energy in total energy consumption, regard this as a key target in annual plans for national economic development as contributed to by the administrative area, and further keep increasing the target year by year。 The National Energy Administration has set targets for a share of 15% and 20% of non-fossil energy in primary energy consumption by 2020, and 2030 respectively, at the national level, and shall carry out monitoring and evaluation of the achievement of renewable energy shares by each administrative area。

(vi) Implement a quota system for renewable electricity。 The national government shall, on the basis of the "Renewable Energy Law", the energy strategy and development plan, and on the national target for the share of non-fossil energy in total energy consumption, whilst considering each province's (autonomous region, directly-controlled municipality) renewable energy resources, total electricity consumption, inter-provincial and inter-regional power transmission capacity and other factors, determine on an annual basis the minimum target for the share of renewable electricity in total electricity consumption for each provincial-level administrative area。 All the various electricity market actors share the responsibility of promoting renewable energy utilization, all provincial power grid enterprises and other local power grid enterprises, distribution enterprises (including enterprises for privately funded expansions of distribution networks and autoproducer power plants) shall be responsible for achieving renewable electricity quota within their power supply area, and the installed power generation capacity and annual power generation of power generation companies shall meet the stipulated share of renewable energy generation capacity and generation。 Improve renewable electricity green certificate and trading mechanisms, and form a new development model for the promotion of renewable electricity generation and consumption。 The "Renewable electricity quotas and assessment methods" shall be published separately。

(vii) Implement a priority dispatch system for renewable energy。 All grid companies shall, in cooperation with the relevant power trading institutions, in accordance with the priority dispatch policy for renewable power generation included in the power system reform, pursuant to the "Measures for the guaranteed full purchase of renewable electricity" (NDRC Energy [2016] No. 625), the "Circular on administrative tasks for the guaranteed full purchase of electricity from wind and PV power generation" (NDRC Energy [2016] No. 1150), the "Circular on orderly opening up of electricity production and consumption planning" (NDRC [2017] No. 294) and other relevant regulations on the prioritized power dispatch and prioritized purchase of electricity, fully implement the policy for the minimum number of guaranteed full-load hours purchased at the feed-in tariff approved by the national government, or the full purchase at prices determined through a tender for renewable energy power generation projects。 Provincial-level departments in charge of power operation management shall, when preparing annual plans for priority power dispatch and priority purchase, reserve room in these plans for the amount of renewable electricity subject to guaranteed purchase, and together with the department in charge of energy

affairs, do a good job of balancing the guaranteed purchase of renewable electricity and the market-based trading of electricity。

(viii) Promote the participation of renewable power in market-based transactions。 In administrative areas where the national government has determined minimum numbers of full-load hours subject to guaranteed purchase, the use of market-based transactions is encouraged to promote consumption of renewable electricity that falls outside the scope of the minimum guaranteed purchase。 Fully utilize the potential of inter-provincial and inter-regional transmission capacity, resolving both curtailment of hydro, wind and PV power generation in the area on the transmitting end, and reducing coal-fired power generation in the area on the receiving end, and expand spot trading for the inter-provincial and inter-regional consumption of renewable electricity 。Department in charge of energy matters and power operations management departments at relevant provinces (autonomous regions, directly-controlled municipalities) should actively coordinate efforts at market-based trading of renewable energy electricity between renewable power generation enterprises, large users, and enterprises with autoproducer power plants, and take the initiative to link up efforts at inter-provincial exports of renewable electricity and market-based trading with the government and relevant departments on the receiving end of such inter-provincial exports。 The Beijing Electric Power Trading Center, the Guangzhou Electric Power Trading Center, provincial-level power trading centers and power grid enterprises should jointly organize the market-based trading of renewable electricity。 Relevant administrative areas should promptly lift unreasonable price limits on both exporting and receiving ends in inter-provincial and inter-regional renewable electricity trade, and support improving the market competitiveness of renewable electricity。

3. Give full play to the key role of the power grid

(ix) Enhance the level of inter-provincial transmission of renewable power。 Strengthen the construction of power grids in key areas for renewable energy development, accelerate and advance the planning and construction of transmission lines for inter-provincial and inter-regional transmission of renewable electricity in Southwest China and the "three Norths" region, and prioritize the construction of transmission lines that will primarily carry renewable electricity and where the receiving area has room in the market to absorb the renewable electricity。 Make full use of existing inter-provincial and inter-regional power transmission lines for the transport of renewable electricity and increase operating levels。 Research technical measures to improve the potential for power transmission of renewable electricity,

accelerate the research and application of flexible DC transmission technologies, and actively advance the Zhangjiakou flexible DC transmission renewable electricity demonstration project。 In 2017, put into operation northern Shanxi to Nanjing, Jiuquan to Hunan, Ximeng to Taizhou, Jarud to Qingzhou HVDC transmission projects in the "Three Norths", and put into operation the third Sichuan-Chongqing line in the Southwest。 In 2018, put into operation the Zhudong to South Anhui, and Shanghai Temple to Shandong HVDC transmission projects in the "Three Norths" region, and put into operation the Northwestern Yunnan to Guangdong HVDC transmission project in the Southwest。 In the latter part of the "13th Five-Year Plan" period, accelerate and advance the construction of the fourth hydropower transmission line in Sichuan, and the inter-provincial export transmission lines for the Wudongde Hydropower Station, Baihetan Hydropower Station and the Jinsha River upper reaches Hydropower Station 。 Research improving the transmission potential of UHV transmission channels primarily meant for the transport of renewable electricity including the Hami-Zhengzhou and Jiuquan-Hunan lines。

(x) Perfect the technical support system for inter-regional dispatch of renewable electricity。 Introduce a dispatch system that fits the characteristics of renewable electricity as soon as possible, and introduce administrative measures for energy-saving and low-carbon power dispatch。 Improve the technical support system for the allocation of renewable electricity across administrative areas, and realize intelligent matching and flexible dispatch of renewable power generation in the exporting area, the load in the receiving area, and the transmission line capacity。 For hydropower in Southwest China and other regions with concentrated renewable power generation, establish a forecasting system for combined long-term and short-term power generation forecasts covering the entire region。 The State Grid Corporation, China Southern Power Grid Company and other power grid enterprises should share relevant information, and create a nationwide platform for the monitoring and dispatch of renewable energy power generation, transmission, and consumption。

(xi) Optimize power grid dispatching。 Give full play to the mutual benefit of inter-provincial grid connections, improve the coordination of dispatch and the sharing of resources between provincial-level power grid enterprises, establish a inter-provincial sharing mechanism for peak regulation resources and back-up capacity, and make full use of inter-provincial and inter-regional power transmission lines for the sharing of peak regulating resources between areas at both ends of the transmission lines。 In accordance with local conditions, carry out inter-regional and inter-drainage basin joint dispatch of wind, solar, hydro and thermal power generation, and achieve balanced and

complementary power generation from a variety of sources。 Strengthen coordination of power output prediction between power grid enterprises and renewable power generation enterprises。 Using advanced technologies such as big data, cloud computing and "Internet +", carry out integrated drainage basin monitoring, establish a dispatch monitoring and control model primarily focused on hydropower for the Southwest, and achieve overall inter-regional and inter-drainage basin optimized dispatch an balance between hydropower rich Sichuan and Yunnan and poorer surrounding provinces。 Accelerate the research and application of key technologies such as microgrids, energy storage, smart energy, and novel synchronous compensator devices。

(xii) Improve utilization rates of existing transmission lines。 Fully utilize the inter-provincial and inter-regional export potential of existing transmission lines, and under the premise of meeting requirements for safe system operation and meeting electricity demand in the receiving area, reduce grid redundancy, improve operational efficiency and management levels of transmission lines, and conduct monitoring and evaluation of the actual inter-provincial transmission of renewable electricity。 Make full use of existing inter-provincial and inter-regional power transmission lines in the prioritized transport of hydro, wind, and solar power。 On the basis of predetermined periods of monitoring and evaluation, specify targets for the share of renewable electricity in the total inter-provincial transmission of joint renewable and coal-fired power transmission lines。

4. Accelerate optimization of the structure and layout of power generation sources

(xiii) Co-ordinate development of coal-fired and renewable power generation。 Organically combine the prevention and control of coal-fired power overcapacity risks and promoting the orderly development of renewable power, actively implement the "Opinions on promoting supply side reform & preventing and solving overcapacity in coal-fired power generation" (NDRC Energy [2017] No. 1404), and areas with serious curtailment of renewable power generation shall earnestly implement 2017 tasks for the closure, construction stop, and construction slow-down of coal-fired power。 In accordance with power supply and demand changes, continue to work on next steps at preventing and resolving risks of excess coal-fired power generation capacity, and ensure that the national installed capacity of coal-fired power generation in 2020 will be controlled below 1,100 GW。

(xiv) Optimize the layout of renewable power development。 Adhere to simultaneous centralized and distributed development, co-ordinate renewable power generation development and market consumption, actively support the development of scattered resources in Central and Eastern China, reasonably control the pace of renewable power development in areas with serious curtailment, and urge all administrative areas to strictly implement monitoring and early warning mechanisms for investment in wind and PV power generation。 Implement an early warning mechanism for renewable power consumption; the NEA will assess renewable power curtailment of each administrative area, and reasonably determine an annual development quota, on the premise that the curtailment rate is falling。

(xv) Accelerate construction of hydropower stations on the Longtou reservoir and coordinated drainage basin operation。 Give full play to the role of Longtou reservoir, increase the regulation potential of the cascaded hydropower stations in the Southwest hydropower basin, and accelerate the construction of Lianghekou hydrpower station on the Yalong river and the Shuangjiangkou hydropower station on the Dadu river。 On the basis of overall consideration for the issues involving ethnic minorities, cultural protection and environmental conservation with regard to the Longpan hydropower station in the middle reaches of the Jinsha River, actively advance the relevant preparatory work。 Research and establish a "joint participation, joint benefits" profit sharing mechanism for all involved parties in the drainage basin。 Coordinate hydropower operation, improve the monitoring system of water and energy utilization in key river basins and large administrative areas, scientifically carry out joint dispatch by cascaded basins and inter-basin joint hydropower dispatch, and increase overall basin benefits。

(xvi) Effectively improve the peak regulation capacity of the power system。 In 2017, carry out flexibility retrofitting demonstration projects of 16.35 GW of thermal power in the "Three Norths" region, add 4.8 GW of system peak regulation capacity, continue to expand the scope of flexibility retrofitting of thermal power generation units, and significantly enhance the peak regulating potential of thermal power。 Appoint a batch of thermal power generation units to act as peak regulating units for the absorption of renewable electricity, and on the basis of pilot demonstration, implement a compensation mechanism for deep peak regulation for thermal power generation units, and generate enthusiasm for peak regulation by thermal power plants 。 In accordance with the principle of reasonable economics and technologies, start construction on circa 60 GW of pumped storage hydropower during the "Thirteenth Five-Year Plan" period, of which circa 28 GW in the "Three Norths" region。 In North

China, East China, South China and other regions, construct a batch of natural gas peak regulation power stations, with newly installed capacity of more than 5 GW。

5. Expand local consumption of renewable power via multiple paths

(xvii) Promote participation by autoproducer power plants in the absorption of renewable electricity。 Reasonably guide autoproducer power plants to fulfill their social responsibilities by accommodating renewable power consumption, and use market mechanisms to provide cost-effective compensation for the costs of peak regulation, so that these autoproducers may voluntarily reduce power output in periods when the renewable power generation is curtailed。 At the same time, give full play to the role of government in macro-level control, adopt measures that combine coordinated administrative management, market trading and strengthened supervision, thoroughly bring out the potential for peak regulation by autoproducer power plants, and effectively promote the consumption of renewable electricity。 Relevant provincial level power grid enterprises shall draw up technological measures for the participation in system peak regulation by autoproducer power plants, and with the support of the relevant provincial governments, include autoproducer power plants in unified power grid dispatch。 Xinjiang and Gansu province should make the reduction in output by autoproducer power plants and their participation in system peak regulation an important approach in resolving the serious levels of curtailment of wind and PV power generation in these provinces。 All administrative areas are encouraged to organize and build demonstration zones for renewable energy-consuming industries, to promote the localized utilization of renewable electricity。

(xviii) Expand the ways and modes for power grid absorption。 In combination with the pilot on reform and expansion of the power distribution grid, expand the consumption of renewable electricity, actively carry out construction of renewable energy micro-grids, encourage the development of new models such as microgrids, local area networks and energy internet, which primarily focus on renewable and other clean energy, improve the grid access and absorption of renewable energy and distributed power generation sources, and promote the development of distributed generation of renewable energy。 Carry out pilots for market-based trading of distributed power generation, and achieve localized consumption of distributed renewable energy within the local distribution network through market-based trading。

(xix) Accelerate implementation of electrification。 In administrative areas with rich and concentrated renewable energy resources, encourage the construction of power-to-hydrogen, big data centers, cloud computing centers, electric vehicles and

supporting infrastructure, and prioritize the absorption of renewable power。 Focusing on the four areas of residential heating, manufacturing, transport, electricity supply and consumption, pilot or promote electric heating, various types of heat pumps, industrial electric boilers (kilns), electric irrigation and drainage in agriculture, shore-to-ship electrical power, ground power equipment at airports, power storage for peak regulation, and other power absorption and utilization infrastructure。 In 2017, achieve 45 TWh of electrification in the "Three Norths" region, accelerate and advance electrification in Sichuan and Yunnan, encourage implementation of coal to electricity retrofitting, and expand local power absorption paths。 Over the "Thirteenth Five-Year Plan" period, realize 450 TWh of electricity consumption through electrification, nationwide。

(xx) Improve demand side response capabilities。 Exploit the potential of demand side management, establish a compensation mechanism for demand-side participation in marketized ancillary services, help build a flexible electricity demand load, guide the demand load in following system output, and effectively reduce curtailment rates。 Encourage the introduction of policies that promote interruptible and adjustable load, appropriately widen the peak-valley price difference, and increase consumer enthusiasm for the absorption of renewable electricity。 Accelerate and advance the application of integrated energy storage, accelerate and advance the smart charging and discharging of electric vehicles and flexible load control, and enhance the responsiveness of demand side response to renewable energy generation。 Bring into play the role of integrator of the electric load, integrate decentralized demand response resources, and establish a virtual power plant for renewable electricity absorption。

(xxi) Vigorously promote electric heating with renewable electricity。 In areas rich in wind, solar and hydropower resources, actively promote replacing coal-fired heat supply with various types of electricity based heat supply。 Promote carbon crystal and graphene heating devices, electric membrane and other distributed heating, focus on the use of off-peak power to develop centralized electric heat supply, encourage the construction of electric heat supply infrastructure with thermal storage capacity, and in accordance with local conditions, promote integrated green heat supply systems by combining renewable electricity with geothermal energy, biomass energy, and solar energy。 Encourage Special trading of renewable energy heating in administrative areas that are rich in wind power and other renewable electricity resources, and achieve combined promotion of renewable power absorption and clean heating in northern regions。

6. Accelerate improving market mechanisms and policy systems

(xxii) Accelerate the pace of construction of the electric power market。 Fully exploit the potential of the inter-provincial and inter-regional power transmission lines, continue to expand the volume of market-based trading of additional renewable electricity between provinces or regions, and promote construction of regional power markets with a wider scope。 With regards to the time-of-day price formation mechanism, start the first batch of pilot projects for electricity spot markets in the south (starting from Guangdong), Western Inner Mongolia, Zhejiang, Shanxi, Shandong, Fujian, Sichuan and Gansu, and gradually build a power market system that combines long- and medium-term and spot markets。 Whilst designing power market mechanisms determining trading rules, stress the shared responsibility of renewable energy utilization。

(xxiii) Establish incentives that encourage absorption of renewable electricity。 Summarize experiences of the ancillary services pilot in the northeast, improve the compensation mechanism for peak regulation ancillary services, and establish incentives to encourage the coordinated operation of wind, PV, hydro and thermal power generation。 Fully link the orderly opening up of power generation and consumption planning with the mechanism for guaranteed purchase of renewable electricity, orderly open up provincial-level power generation and consumption planning as well as the rights for consumers and power sales enterprises to purchase electricity from outside their province, organize expansion of transfers of electric power contracts by power companies, and enrich the variety of tradeable products in the transitional phase of construction of the power market。 Research incentive policies for the receiving electricity markets。 Research improving the cohesion of evaluation policies for the absorption of renewable electricity with carbon emissions, energy conservation and controlling total energy consumption policies。

(xxiv) Improve the renewable energy power generation price formation mechanism。 Improve the feed-in tariff formation mechanism for renewable electricity, and accelerate the pace of reduction of subsidies to newly constructed renewable power generation projects。 Actively carry out pilots for time-of-day electricity pricing on the feed-in side and pilots for the pricing of transmission and distribution for locally consumed renewable electricity, and encourage the various types of consumers to absorb renewable electricity。 Pay close attention to cost supervision and re-approval of transmission prices for inter-provincial and inter-regional transmission line construction projects, and prior to the full opening up of power generation planning, allow for dynamic adjustment of the transmission price for

exports of electricity that exceed planned generation。 Pay close attention to improving the transmission and distribution prices in all provinces (autonomous regions, directly-controlled municipalities), strengthen the day to day supervision of transmission and distribution prices in all regions, and further guide individual regions in timely and reasonably adjusting their transmission and distribution price structure, and allow dynamic adjustment of transmission prices for different voltage levels, as long as the overall electricity price level remains unchanged over the supervision period。

7. Strengthen organization and implementation safeguard measures

(xxv) Implement appointing responsibility to key actors。 The National Development and Reform Commission and National Energy Administration are responsible for the formulation and coordination of the overall program for the absorption of renewable energy。 Energy management departments of provinces (autonomous regions, directly-controlled municipalities) shall, together with relevant departments, formulate policy measures to promote the efficient utilization of renewable electricity within their administrative area ; energy management departments of provinces (autonomous regions, directly-controlled municipalities) with severe curtailment of hydro, wind or solar power shall, together with relevant departments and power grid enterprises etc., formulate special measures for the absorption of renewable electricity within their administrative area ; provinces (autonomous regions, directly-controlled municipalities) on receiving ends of inter-provincial and inter-regional transmission lines, that have room on their electricity markets for absorbing renewable electricity, shall formulate targets for expanding the absorption of renewable electricity within their administrative areas。 Power grid enterprises shall attach great importance to absorption of renewable electricity, and actively integrate various resources in expanding transmission and utilization of renewable electricity。

(xxvi) Clarify tasks。 Energy management departments of provinces (autonomous regions, directly-controlled municipalities) shall, before the end of January of each year, submit a report on the consumption of renewable electricity in the previous year to the National Development and Reform Commission and the National Energy Administration, and propose renewable power consumption targets and specific measures for the current year。 The National Development and Reform Commission and the National Energy Administrations shall perform an annual assessment of the renewable electricity absorption targets for each provincial-level administrative area, and afterwards determine that year's renewable energy utilization target for the

respective administrative area。 The State Grid Corporation, China Southern Power Grid Company, Inner Mongolia Electric Power Company shall organize annual preparation of a work program for regional renewable electricity consumption, and submit reports to the National Development and Reform Commission and the National Energy Board。 Energy management and energy supervision departments of provinces (autonomous regions, directly-controlled municipalities) shall, on the basis of the division of responsibilities and tasks, and the relevant laws and regulations, strengthen the supervision on provinces (autonomous regions, directly-controlled municipalities), and power grid companies, with regards to the fulfillment of connecting to the grid and dispatching responsibilities for renewable power generation projects, and implementation of priority dispatch and full guaranteed purchase policies。

(xxvii) Strengthen monitoring and evaluation。 The National Energy Administration shall carry out monitoring of renewable electricity absorption by each of province (autonomous region, directly-controlled municipality), and publish monitoring and evaluation results on an annual basis. For administrative areas with serious levels of curtailment of hydro, wind or PV power generation, monitoring shall be performed on a monthly basis, assessment shall occur on a quarterly basis, and early warnings will be given on an annual basis。 The National Energy Administration shall, on an annual basis, publicly announce for each province (autonomous region, directly-controlled municipality) the share of renewable energy consumption in total energy consumption, the share of renewable electricity in total electricity consumption, the share of non-hydro renewable electricity consumption in total electricity consumption, as well as the related targets and the increase or decrease in these shares ; for inter-provincial and inter-regional power transmission lines public announcements will be made on the share of renewable electricity in the total amount of electricity transmitted ; and for administrative areas with curtailment rates of wind or PV exceeding 5%, public announcements will be made on their volume of wind and PV curtailment as well as their curtailments rates, and the increase or decrease on the reporting period of last year。