

# China Energy Policy Newsletter: April 2019

## 1. Recent project activities

### Dena, GIZ and CNREC co-hosted DSM Expert Workshop in Beijing

On 27 March 2019, the German Energy Agency (dena), GIZ, the China National Renewable Energy Centre (CNREC), and the China Electricity Council (CEC) jointly hosted an all-day conference on demand side management (DSM) practices in China and Germany. Next Kraftwerke, a German virtual power plant (VPP) aggregator and market trader and aluminium manufacturing company Trimet Aluminium SE discussed their experiences. Chinese participants included the Energy Research Institute of the National Development and Reform Commission (NDRC ERI), State Grid Energy Research Institute (SG ERI) and BYD. Experiences were shared from the market-based situation in Germany and the situation in China, which is based on grid needs and several major pilot projects. The experts derived several recommendations and next steps how to enable the further development of real-time, price-signal based mechanisms in China.

Next Kraftwerke noted that the DSM market is still developing in Germany; their service involves aggregating flexible loads such as large industrial players and energy storage facilities to bid into power markets. Trimet Aluminium SE discussed the significant technology investments the company has made to enable smelters to become flexible without damaging equipment.



Mr Jan Völpele from Next Kraftwerke presents at the workshop. Source: GIZ.



Ms Carolin Schenuit from German Energy Agency joins group discussion. Source: GIZ.



Mr Zhao Yongqiang from CNREC and Mr Lei Xiaomeng from CEC join group discussion. Source: GIZ.



Mr Herbert Hauck from Trimet Aluminium SE joins group discussion. Source: GIZ.

## 2. China energy transition updates



### Wind and solar are almost competitive with coal in China

On 19 March 2019, Ms Shi Jingli, professor at the Energy Research Institute of the National Development and Reform Commission (ERI of NDRC), presented at the China Energy Week, where she summarised the current status of wind and solar PV in China and government policies currently being developed.<sup>1</sup> According to Shi, the cost of wind power is around RMB 0.5/kWh in regions with typical wind conditions, and as low as RMB 0.35/kWh in the windiest regions. Assuming these levelised costs for wind projects, and no change to coal tariffs (which presently exclude the full external cost of coal power), wind subsidies would need to range from RMB 0.07 – 0.08 /kWh. Solar PV has achieved the 2020 target of price competitiveness with the retail electricity price (RMB 0.5 to 0.7 /kWh) in 2018. In the first half of 2019, its levelised cost is expected to decline to RMB 0.37 – 0.51 /kWh. “Solar PV only needs one or two years to be cheaper than wind,” Shi said. Wind and solar both are at the end of subsidy support phase, but further macro policies of promoting renewable energy to facilitate energy transition will remain.

### Tariff set for three recently completed nuclear power plants

NDRC announced the feed-in tariff policy for the first three Third Generation nuclear power plants, which went online in 2018. The tariffs range from RMB 0.4151/kWh to RMB 0.4350/kWh. The policy is in effect until the year end 2021.<sup>2</sup> The price range is lower than the levelized cost estimated by the China Nuclear Energy Association (RMB 0.5/kWh).<sup>3</sup>

Project Name	Feed-in tariff
Guangdong Taishan Nuclear Power Plant Phase I	RMB 0.4350/kWh
Zhejiang Sanmen Nuclear Power Plant Phase I	RMB 0.4203/kWh
Shandong Haiyang Nuclear Power Plant I	RMB 0.4151/kWh

### Three mechanisms for wind and solar development in 2019

According to Shi, price competition for wind and solar PV will include tenders/auctions and spot power markets. In 2019, China will focus on three major renewable policies, including implementing tenders nationwide for subsidized projects, scaling up subsidy-free wind and solar PV projects, and facilitating the participation of renewable energy in various power markets under development.

- Policymakers are now discussing a nationwide solar tendering system that NEA would select solar PV projects based on accepting projects starting from the lowest price until the amount of annual subsidies is used up.<sup>4</sup>
- In January 2019, NEA and NDRC jointly announced a plan to launch subsidy-free wind and solar pilots. The government will provide eight supporting incentives such as exemption from land transaction fees and 20-year feed-in tariff power purchase agreements.<sup>5</sup>
- In March 2019, NDRC issued a draft policy, *Suggestions for Establishing Spot Power Market Pilots* and asked for public comments. The policy proposes that clean energy could participate spot markets by making offers for volume only (that is, without bidding a price). As price takers, renewable projects will have priority for market clearance.<sup>6</sup>

<sup>1</sup> “国家发改委时璟丽谈 2019 新能源电价补贴政策方向,” Energy News, 27 March 2019, accessed at <http://www.china-nengyuan.com/news/137121.html>.

<sup>2</sup> “国家发展改革委关于三代核电首批项目实行上网电价的通知, 发改价格[2019]535 号,” National Development and Reform Commission, 20 March 2019, accessed at [http://www.ndrc.gov.cn/fzgggz/jggl/zcfg/201904/t20190401\\_932486.html](http://www.ndrc.gov.cn/fzgggz/jggl/zcfg/201904/t20190401_932486.html).

<sup>3</sup> Zhu Xuerui, Zhao Ziyuan, “首批三代项目上网电价定了, 核电有竞争力吗? 这份报告解读,” China Energy News, 1 April 2019, accessed at <http://news.bjx.com.cn/html/20190402/972370.shtml>.

<sup>4</sup> “国家发改委时璟丽谈 2019 新能源电价补贴政策方向,” Energy News, 27 March 2019, accessed at <http://www.china-nengyuan.com/news/137121.html>.

<sup>5</sup> “国家发展改革委 国家能源局关于积极推进风电、光伏发电无补贴平价上网有关工作的通知, 发改能源〔2019〕19 号,” National Development and Reform Commission and National Energy Administration, 7 January 2019, accessed at [http://www.ndrc.gov.cn/zcfb/zcfbtz/201901/t20190109\\_925398.html](http://www.ndrc.gov.cn/zcfb/zcfbtz/201901/t20190109_925398.html).

<sup>6</sup> “国家能源局综合司关于征求进一步推进电力现货市场建设试点工作的意见的函,” National Energy Administration, 5 March 2019, accessed at [http://www.nea.gov.cn/2019-03/08/c\\_137878845.htm](http://www.nea.gov.cn/2019-03/08/c_137878845.htm).

## Grid-connected solar PV provincial development

In 2018, China installed 44.3 GW grid-connected solar PV capacity, in which distributed PV took up 47.4% (21 GW), representing a 71% year-on-year growth rate for distributed PV. The country had 174 GW cumulative installed solar PV capacity at year end, of which 29% was distributed generation. Grid-connected solar PV generated 177.5 TWh of electricity in 2018, or 2.6% of total electricity produced. The national average solar power utilization in 2018 was 1,115 hours, or a capacity factor of 12.7%. Xinjiang and Gansu reduced solar PV curtailment by 6 percentage points and 10 percentage points respectively, but they both continued to suffer curtailment rates in double digits (16% in Xinjiang and 10% in Gansu).<sup>7</sup>

## Solar PV cumulative installed capacity at year-end 2018 (GW)



Source: National Energy Administration, March 2019<sup>8</sup>

## Solar PV newly added capacity in 2018 (GW)



Source: National Energy Administration, March 2019<sup>9</sup>

<sup>7</sup>“2018 年光伏发电统计信息,” National Energy Administration, 19 March 2019, accessed at [http://www.nea.gov.cn/2019-03/19/c\\_137907428.htm](http://www.nea.gov.cn/2019-03/19/c_137907428.htm).

<sup>8</sup>“2018 年光伏发电统计信息,” National Energy Administration, 19 March 2019, accessed at [http://www.nea.gov.cn/2019-03/19/c\\_137907428.htm](http://www.nea.gov.cn/2019-03/19/c_137907428.htm).

<sup>9</sup>“2018 年光伏发电统计信息,” National Energy Administration, 19 March 2019, accessed at [http://www.nea.gov.cn/2019-03/19/c\\_137907428.htm](http://www.nea.gov.cn/2019-03/19/c_137907428.htm).

#### China to reduce VAT rates for power grid companies

*Notice on adjusting the valued-added tax (VAT) rate in power sector to lower the industrial and commercial electricity tariff, NRDC Pricing [2019] No. 559*

As of 1 April 2019, NDRC has reduced the VAT rate of power grid companies from 16% to 13%. The transmission and distribution tariffs in provincial (district, municipal) grids for serving industrial and commercial customers will decrease accordingly. Grid companies should use savings to reduce industrial and commercial electricity tariffs. Earlier, in March 2019, the Government Work Report 2019 targets a reduction of industrial and commercial electricity tariffs by 10% in 2019.

2019-03-27

[http://www.ndrc.gov.cn/zcfb/zcfbtz/201903/t20190329\\_931929.html](http://www.ndrc.gov.cn/zcfb/zcfbtz/201903/t20190329_931929.html)

#### 7 GW of poverty alleviation solar PV will receive subsidies

*Notice on the Poverty Alleviation Solar PV Projects to Receive Additional Subsidies, MoF Construction [2019] No. 48*

The government announced 7 GW of poverty alleviation solar PV projects that will receive national subsidies. Ministry of Finance will prioritize the subsidy payment for these projects from the Renewable Energy Surcharge Fund.

2019-03-20

[http://jjs.mof.gov.cn/zhengwuxinxi/tongzhigonggao/201903/t20190328\\_3208265.html](http://jjs.mof.gov.cn/zhengwuxinxi/tongzhigonggao/201903/t20190328_3208265.html)

#### MEE launches remote sensing pilots for ecological environment monitoring

*Notice to Implement Pilots of Remote Sensing Monitoring of Ecological Environment, MEE Monitoring and Measurement [2019] No. 6*

From March 2019 to August 2021, the government will pilot remote-sensing environmental monitoring projects in eight provinces and three cities. They are Tianjin, Inner Mongolia, Heilongjiang, Jiangsu, Zhejiang, Shaanxi, Gansu, Qinghai, Jinan in Shandong, Taizhou in Jiangsu and Yuncheng in Shanxi. Water, atmosphere, ecology, soil, nuclear security and ecological law enforcement and ecological emergencies will be monitored under the pilots. Specific targets include such items as origin of drinking water, strew burning, particulate matter and polluting gases, ecological functions, soil pollution, site selection of nuclear powerplants and ecological emergency events.

2019-02-28

[http://www.mee.gov.cn/xxgk2018/xxgk/sthjsh/201903/t20190306\\_694554.html](http://www.mee.gov.cn/xxgk2018/xxgk/sthjsh/201903/t20190306_694554.html)

#### 2019 city-level air quality control targets and issued

*Notice of Major Work in Field of Air Pollution Prevention and Control in 2019, MEE Atmosphere [2019] No. 16*

In 2019, the PM<sub>2.5</sub> concentration in cities still above the standard of 35 µg/m<sup>3</sup> should decrease concentrations by 2% year-on-year, and the number of days of heavy pollution in prefecture-level and above cities should be below 20.6%. Total SO<sub>2</sub> and NO<sub>x</sub> emission should decrease by 3% in 2019. The government will prioritize industrial energy-saving retrofit projects for coal power plants above 300 MW in western regions and for iron and steel manufacturing. Local government should set a volatile organic compound (VOC) management standard for the petroleum, chemical, industrial coating and packaging printing sectors. The central government will continue setting caps on total coal consumption for each province, and these caps will focus on reducing coal use by industries other than the power sector, reflecting continuing electrification of the economy.

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[http://www.mee.gov.cn/xxgk2018/xxgk/xxgk05/201903/t20190306\\_694550.html](http://www.mee.gov.cn/xxgk2018/xxgk/xxgk05/201903/t20190306_694550.html)

#### More clean energy facilities added to the green industry list

*Notice to Issue the Gilding List of Green Industries (2019 Version), NDRC Environment and Resources [2019] No. 293*

The Green Industry list 2019 version adds electric vehicle charging, battery swap stations and hydrogen charging stations into the clean energy equipment list; adds construction and operation of nuclear power plants and coal-bed gas (coal-mine gas) plants into the clean energy project category; and adds multi-energy integrated facilities, efficient energy storage equipment, natural gas transportation and storage, and dispatchable gas power plants into the clean energy industry list. The document requires local governments and relevant departments to support green industries by providing incentives on investment funding, pricing, financing and tax policies.

2019-02-14

[http://www.ndrc.gov.cn/gzdt/201903/t20190305\\_930083.html](http://www.ndrc.gov.cn/gzdt/201903/t20190305_930083.html)