

● SEPTEMBER 2020

CHINA ENERGY POLICY NEWSLETTER

Boosting Renewable Energy as Part of China's Energy Revolution

1. Project activities

Closer Sino-Danish Clean Heating Cooperation begins

The new Sino-Danish Clean Heating Cooperation programme represents the continuation of the fruitful clean heating cooperation that has been in place between Denmark and China for several years. Through a flexible cooperative model, from 2021 to 2023, China Renewable Energy Engineering Institute (CREEI) and the Danish Energy Agency (DEA) will build a clean heating approach that adjusts global best practices to the Chinese context. The first steps of the programme will focus on developing a list of relevant heating policy/planning measures, which support policymakers in deciding when and how to set targets for DH expansion, assessing possibilities for implementation of pricing by consumption, as well as suggesting improvements to financial mechanisms, among others. The cooperation will improve the framework for integration of renewable energy and efficient planning in the heating sector and thereby support China in the implementation of their Nationally Determined Contributions (NDC) targets.

DEA presents at Global offshore wind summit in Shandong

The Deputy Director General of the DEA, Mr. Stig Uffe Pedersen, delivered a keynote speech at the Global Offshore Wind Summit in Shandong on 27 August 2020. The speech by Mr. Pedersen, titled "Global perspectives and Danish experiences making offshore wind competitive", was warmly welcomed by the 800 participants (limited in numbers due to Covid-19 controlling measures). Particular attention was on the presentation of the latest Danish climate agreement taking offshore wind development to the next level, including the planned development of two energy islands to serve as offshore wind connecting hubs in the pipeline towards 2030.



The Deputy Director General of the Danish Energy Agency, Mr. Stig Uffe Pedersen.

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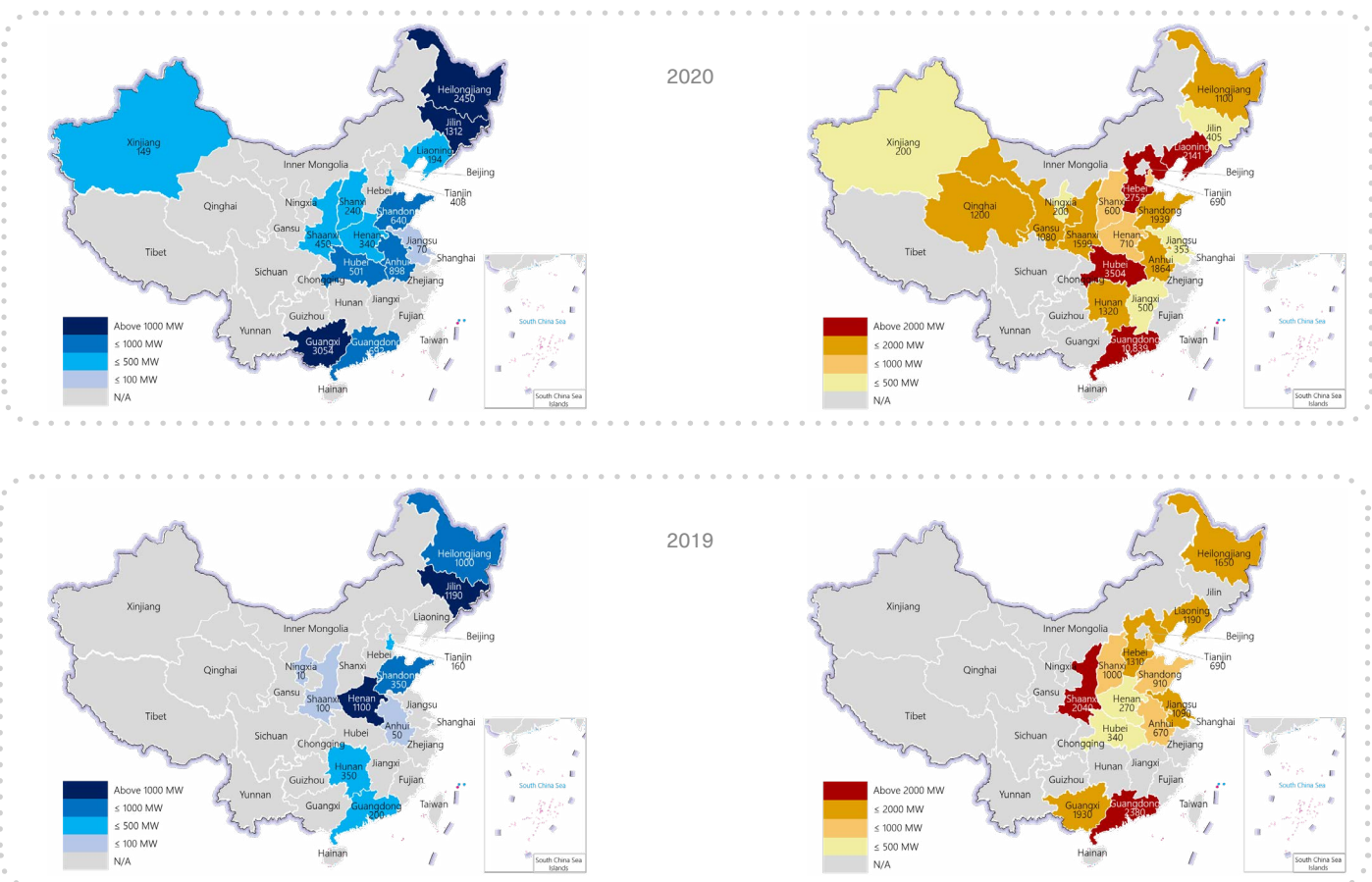
2. China energy transition updates

2020 subsidy-free wind power and PV projects issued

On 31 July 2020, the NDRC and NEA announced 11.40 GW of subsidy-free wind power and 33.05 GW of solar PV projects for 2020. Based on this announcement, the total number is doubled compared to 2019 and it is expected to drive RMB 220 billion of investment and a large number of new positions in renewable energy industry.¹ The document emphasizes that the subsidy-free projects published in 2019 and 2020 should all receive approval and start the construction process by 2021 and that incentive policies such as the 20-year PPA, priority dispatch and guaranteed certain amount of equivalent full load hours, shall remain in place for the qualified projects. Besides, wind power projects should connect to the grid by 2022 while solar PV projects by 2021.

Based on NEA's official interpretation, for the next step, energy authorities will strengthen the coordination with land and environmental protection administrative departments, aiming to reduce the soft cost of new wind power and PV projects. NDRC and NEA will also strictly monitor and supervise the project construction process in order to create a better implementation environment. Majority of newly approved subsidy-free PV projects are expected to be on-grid within 2021 and wind power projects by 2022, which is beneficial for the steady development of renewable power sector. Particularly for PV power, NDRC and NEA have approved 66 GW of new projects in 2020 including subsidized utility-scale and distributed PV through tenders, subsidized household PV by first come first served, and subsidy-free PV projects.

2020 (top) and 2019 (bottom) subsidy-free wind and PV projects



¹ “《国家发展改革委办公厅 国家能源局综合司关于公布2020年风电、光伏发电平价上网项目的通知》政策解读,” National Energy Administration, 5 August 2020, accessed at https://www.ndrc.gov.cn/xxgk/jd/jd/202008/t20200805_1235591.html; “国家发展改革委办公厅 国家能源局综合司关于公布2020年风电、光伏发电平价上网项目的通知, 发改办能源〔2020〕588号,” National Development and reform Commission, 31 July 2020, accessed at https://www.ndrc.gov.cn/xxgk/zcfb/tz/202008/t20200805_1235592.html.

3. Power system flexibility quantitative evaluation: A case study of Zhangjiakou



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Background

Proposing a quantitative evaluation method for power system flexibility analysis is crucial for renewable energy development, as flexibility is one of the fundamental factors to affect renewable power curtailment. Zhangjiakou is currently the only national renewable energy demonstration zone in China. However, as it faced severe curtailment issue during the 13th Five-Year Plan period, it is necessary to come up with technical and economic available solutions to improve local power system flexibility. The ERI of NDRC and NCEPU jointly develop a quantitative evaluation model – H3E - which could analyze this issue for Zhangjiakou. The results is published as a research paper on [Energy](#).

About the model

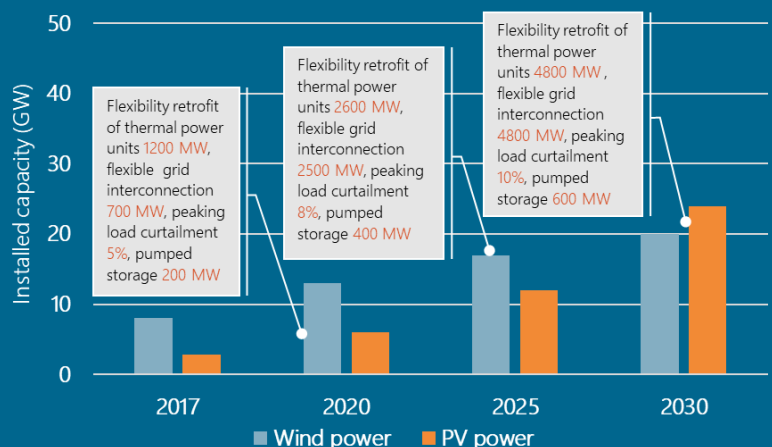
The existing quantitative methods to evaluate power system flexibility have some limitations such as not comprehensively describing the physical features of flexibility, not fully considering the uncertainties in the power system, and not possessing high computational efficiency. These will bring challenges to evaluate large-scale power system flexibility and study mid- to long-term flexibility improvement path. Therefore, combined with the definition of power system flexibility, a sequential and efficient quantitative method is proposed and built as a model called H3E. It is an uncertainty model that considers the uncertainties of key components on power generation, transmission, load and storage sides. In combination of the established models, H3E introduces the improved universal generating function, a more efficient uncertainty analysis tool, to carry out power system sequential production simulation, as well as flexibility evaluation.

The H3E model proposes a flexibility metric system which comprehensively considers flexible regulation ability, power supply reliability and economy of the power system. The effectiveness of the method has been verified in IEEE test system and the method has been applied to several practical cases such as Beijing-Hebei-Tianjin region. Comparing with other flexibility evaluation methods, H3E could provide stronger theoretical support for large-scale power system flexibility evaluation and study of regional flexibility improvement path.

Case study of Zhangjiakou

The model adopts four major flexibility solutions covering power generation, transmission, load and storage in Zhangjiakou, Hebei province. The case study shows that coal-fired unit flexibility retrofit would be the prior choice for Zhangjiakou; this is followed by improving interconnectors in power transmission system, introducing demand side response service, and installing energy storage facilities. By combining the short-mid-and long term renewable energy development plans of Zhangjiakou, the paper proposes specific flexibility solutions for different time phases.

Figure: Short-mid- and long-term power system flexibility improvement paths for Zhangjiakou



4. Policy monitoring

2020-08-27

http://www.gov.cn/xinwen/2020-08/27/content_5537996.htm?utm_campaign=China%20Clean%20Energy%20Syndicate%20&utm_medium=email&utm_source=Revue%20newsletter

NDRC and NEA propose integration programs to improve utilization of clean energy

Guideline to Implement Wind-PV-Hydro-Thermal-Storage Integration and Power Generation-Grid-Load-Storage Integration (for public comments)

The policy aims to increase the operational efficiency of power system and utilization efficiency of clean energy by prioritizing existing power system resources and deploying newly added capacity rationally. Specifically, NDRC and NEA propose two integration programs – “Wind-PV-Hydro-Thermal-Storage Integration” and “Generation-Grid-Load-Storage Integration”. “Wind-PV-Hydro-Thermal-Storage Integration” program aims to integrate power generation resources optimally by considering the planning, design, construction and operation processes of different power supply as a whole; while “Generation-Grid-Load-Storage Integration” program focuses on serving load demand, which stresses to optimize local power system resources and establish integrated power systems on regional, provincial, municipal, county and industrial park levels.

2020-08-21

https://www.ndrc.gov.cn/xxgk/zcfb/tz/202008/t20200826_1236873.html

NDRC and NEA issue the fifth batch of incremental power distribution business pilots

Notice to Issue the Fifth Batch of Reform Pilots of Incremental Power Distribution Business, NDRC Operation [2020] No. 1310

The NDRC and NEA determined the fifth batch of incremental power distribution business pilots, which consists of 79 new projects in 19 provinces and municipalities. They have issued four batches of pilot projects, for a total of 404 projects since 2016. However, due to different reasons, such as lack of planning and unclear power transmission and distribution tariff (T&D) policies, a number of projects have faced severe delays, out of which 24 projects were cancelled in 2019. Therefore, the fifth batch of pilots are allowed to kick off after the 2020-2021 T&D tariff determination process is complete, and after the project-based economic and risk evaluation is finished.

2020-07-13

<http://www.miit.gov.cn/n1146295/n1652858/n1652930/n4509607/c8019836/content.html>

MIIT publishes the intelligent PV demonstrative projects and enterprises

MIIT, MoHURD, MoT, MoA, NEA and Poverty Alleviation Office of the State Council, 2020 Announcement No. 32

The Ministry of Industry and Information Technology (MIIT) and other five ministries jointly published the list of intelligent PV pilot and demonstration projects that integrate PV with big data, internet and artificial intelligence technologies to provide services, and the name list of demonstrative enterprises that could provide advanced and mature PV products, services, platforms and solutions. Earlier in September 2019, the six ministries jointly announced establishing a batch of intelligent PV projects covering industrial zones, buildings, transports, agricultural/rural areas, utility-scale PV projects, and poverty-alleviation PV projects.