

Game Changing New Regulatory Changes for China's Non-Hydro Renewable Energy Sector

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Abstract

The beginning of 2020 has brought a long-awaited blessing to non-hydro renewable energy sector given by China's policy makers. New regulatory developments represent a real game changer, carrying potential to propel latent sub-sectors toward becoming powerful engines for China's sustainable energy future. Implications will be economically and socially significant for grid companies, for businesses, and for end users. This paper analyses the characteristics of newly minted rules by China's policy makers and top regulator. It further outlines the most important aspects of what grid operators, their customers, and businesses shall anticipate in actual terms. It often has turned out that new regulatory developments end as nothing more than a footnote to the general narrative on China's energy future, yet this paper demonstrates how consequential current regulatory undertakings are for the non-hydro renewable energy sector and all the stakeholders involved.

Keywords: China, non-hydro renewables, renewable energy, solar, regulation

1. Introduction

On February 3, 2020 the Ministry of Finance, the National Development and Reform Commission (NDRC) and the National Energy Administration (NEA) have jointly issued '*Opinions on promoting the healthy development of non-hydro renewable energy power generation*' (PR China State Council [SC] Decree No. 4, 2020) (hereinafter referred to as the "Opinions"). Within China's unique legal environment, and equally distinct terminology pertaining to regulatory documents, one can always find terms such as "opinions", "circulars", and "notices" (Zhang, 2014). The significance of similarly termed documents shall not be underestimated by employing plain meanings to understand them. The institutional trio behind the *Opinions* is unsurprisingly being lead by the Ministry of Finance. In China's contemporary policy-making, the Ministry of Finance has a say and approval authority with respect to all structural reforms that may inflict long-term financial impact on the state or sectors of the economy (PRC State Council, 2014). In addition, the difference between the time when NEA was established back in 2010, and now, is quite significant with respect to all powers it exercises today. At present, NEA is carrying mission as coordinator of all energy policies in China, while NDRC is at the helm of largest economic-oriented planning initiatives, which are the building blocks of China's five-year plans (FYP). This format suggests that preparation for the 14th FYP is underway, and equally importantly, the 14th FYP for energy is already in the making.

The significance of this new regulatory document is yet to be known, as only a month has passed since its issuance. The scope of this paper is to analyse the characteristics and determine the significance of the *Opinions*, with regard to the multitude of stakeholders, ranging from ministries and government departments at state level, to price bureaus and energy bureaus at provincial levels, and inclusive of all autonomous regions and municipalities directly under the central government. As the new regulations have legal effect on all grid operators, including China State Grid Corporation and China Southern Power Grid (PRC SC Decree No. 4, 2020), this paper projects that all the consequences the regulatory document brings would be wider, encompassing, and all-embracing for China's energy future.

2. Key Regulatory Advancements

China's development of renewable energy has been subject of substantial scholarship coverage, and it is known

now that wind and solar have already met the conditions of parity with traditional energy (The International Renewable Energy Agency [IRENA], 2019), and fossils in particular. Therefore, a constant challenge that still remains, has been the promotion of healthy and stable non-hydro renewables, especially in the context of new industrial transformations and technology improvements. The question on what has been done in concrete terms, seems to have patiently awaited its answer. China's central government has masterminded a new regulatory regime that comprehensively extends to what until recently have remained as gray areas: covering everything from improving subsidizing methodology and reviving China's green power certificates, to instituting support for household distributed PV, while encouraging competitiveness and enabling financial and administrative support for non-hydro renewables at all levels. The following analysis is not aimed at frustrating the sceptics, but rather intended to bring more clarity regarding *Opinion's* game changing elements for China's non-hydro renewable energy sector.

2.1 Improving Subsidizing Methods

The latest regulations governing scale of new projects that will be subject to subsidies, stipulate that determination will be based on revenue and expenditure, contrary to excessive subsidies that must remain only a characteristic of the past. In accordance with the National Strategy on Energy Production and Consumption Revolution 2016-2030 (International Energy Agency [IAE], 2019; Zhong, 2015) and the annual budget that provides for all subsidy funds, there will be reasonable determination as to what types and on what scale new projects shall enjoy subsidies within current fiscal year. The Ministry of Finance is expected, in consultation with relevant departments, to announce total amounts of new annual subsidies, which means the amount will be pre-determined and possibly capped. At the same time, the NDRC and the NEA are expected to determine the scale of newly installed capacity of renewable power generation projects to be subsidized within the scope of the total annual subsidy. In order to offset public discontent, which was prevalent in the past (Liu, 2018), a new requirement has been introduced, namely that NDRC and NEA will make the entire process and related data known to the public. Although at this point it is not clear how it will be done, this is certainly a positive trend that could guide the stable development of the industry as it entails form of transparency.

The new regulations further address the question of offshore wind and solar. The Opinions provide that all newly added offshore wind power and solar thermal power projects will no longer be included in the scope of central government financial subsidies (PRC SC Decree No. 4, 2020), marking the end of the dependency curve that the government has maintained for years. With regard to existing offshore wind power and solar thermal power projects that have already been approved, or filed, and will be connected to grid network before December 31, 2021, these will be included in the scope of central government financial subsidies according to the corresponding price policies in effect (PRC SC Decree No. 4, 2020, Art. 1(2)). However, from the start of 2022 offshore installations are radically phased out from the subsidy pool and no further resources will be allocated.

2.2 Phasing out Subsidies, Guarantees to Existing Projects

Under the regulatory document, the institutional trio guarantees continuity of policies and reasonable rate of return from existing projects (PRC SC Decree No. 4, 2020, Art. 1(2)). Although "reasonable" is not a term that can be easily quantified, maintaining positive return on assets is already good enough, considering how rapidly installations have grown, contributing to overcapacity, particularly in China's solar subsector. Guarantees are also being extended to renewable energy power generation projects that have been approved, or filed, and for which all units have already been connected to the grid network in accordance with existing regulations (PRC SC Decree No. 4, 2020, Art. 1(3)). Financial guarantees are also being offered to those who were priorly included in the subsidy catalogues, for which the central financial subsidy amount would be determined according to utilization hours. For the stock projects voluntarily converted to parity projects, China's competent departments are expected to put at place a mechanism, through which rules will be created, stipulating priority of subsidy payments, and scale of new projects.

2.3 Revival of Green Power Certificates (GPCs)

Few years ago when debates about China's renewable energy subsidy system lead to conclusions that such system would need a viable alternative, the voluntarily traded digital green power certificates (GPCs) were brought to life. After being introduced in 2017 for every MWh of on-grid non-hydro renewable energy, the GPC became apparent victim to the combined absence of promotion and relevant incentives for businesses, which virtually cemented their status as unpopular feature of China's renewable energy toolbox. During the first half year after they were initially introduced, only 20,000 out of 8 million available GPCs were purchased (Zhao, 2019) by enterprises. In overall, GPCs turned to be perceived not as instruments that could be traded, but rather as costly, unpopular, and nearly insignificant nuisance with very few being interested in it. Pursuant to the

Opinions, GPC trading now faces significant prospects of revival. Starting from January 2021, GPC will be transacted under an established quota system, where all coal-fired power generation enterprises' power generation rights and coal import quotas will be bound with GPC (PRC SC Decree No. 4, 2020). The revival of green certificates as instruments, would translate into surge of green certificate market transactions. The potential increase of such transactions, especially in market-oriented environment, would offer enterprises a venue where they can obtain corresponding alternative financial subsidies through the GPC mechanism. This in itself is a game-changer, as it has not occurred before, and the potential it carries has huge implications on how enterprises will have access to alternative subsidising.

2.4 Market Allocation of Resources and Improvements of the Subsidy Mechanism

Chinese government efforts are not targeting only the structural problems of the non-hydro renewable energy sector. There has been an ongoing pursuit to push down prices of onshore wind power, PV power, and industrial and commercial distributed PV power. The *Opinions* are very affirmative of central government's intentions to continue guidance and oversight for the purpose of instituting price reduction mechanisms regarding onshore wind power, industrial and commercial distributed PV (PRC SC Decree No. 4, 2020). A new policy approach suggests that authorities will reasonably set a range, and guide the onshore wind power, PV power, industrial and commercial distributed PV to realize network connectivity at the lowest costs possible, and as soon as possible (PRC SC Decree No. 4, 2020, Art. 1(4)).

2.5 Support for Household Distributed Photovoltaics

Pursuant to China's 13th FYP, a capacity of 60 GWs should have been installed by 2020 (Climate Policy Tracker, 2020). The 13th FYP was issued in 2016 and the 2020 target was achieved by the end of 2017. Initial target for the period 2016 to 2020, was the construction of 100 demonstration zones of distributed solar PV, with 80 percent of new building rooftops and 50 percent of existing building rooftops equipped with distributed solar PV systems (Climate Policy Tracker, 2020). This target does not seem to have been achieved yet, and the absence of official government data attests to the fact. The so called "Solar PV for Poverty Alleviation Program" (Note 1) was launched in 2014. The Program was intended to support households, who desire to install PV capacity, for which the government takes obligation to cover up to 80 percent of initial investment. Pursuant to the program, households were then allowed to consume for free the power they produce, while selling the surplus to the grids, which would pay or offer alternative financial benefits in return.

Despite all the aforementioned, biggest challenge for China's solar PV has remained to be the virtual absence of distributed solar in many Chinese provinces. Upon such predicament, the new regulatory measures have huge significance, as they aim to support the development of household distributed PV by going beyond the clichés. China's central government seems to have adopted an approach, rendering its support for developing of household distributed solar by means of quota subsidy, where natural persons are supported to install the household distributed PV equipment using the mode of free consumption (PRC SC Decree No. 4, 2020), while in the event of surplus, the mechanism provides for selling back to the grid. At the same time, according to level of technical progress within the industry, cost fluctuations and the overall market situation of household PV, China's central government reserves its special right to adjust the quota subsidy standard for distributed PV in all instances where individual persons are involved. To great extent this would also have magnifying socio-economic impact on individuals.

2.6 Open Market Competition

One significant aspect the *Opinions* bring is the introduction of competitive element when subsidies are sought and allocated. The main rationale behind is to have all new projects designed in a competitive way, in order that those with low subsidy intensity, large decline range and high technology level (PRC SC Decree No. 4, 2020, Art. 2(6)) are channelled through open market competition. Under the condition that the total amount of annual subsidy funds is determined, the market-oriented allocation mechanism of non-hydro renewable energy can be improved further, generating more competition, and potentially, more transparency, than it currently does.

2.7 Optimization of Subsidy Payment Process

Simplification of the management of subsidy catalogue system is also expected as direct consequence of the *Opinions*. The government will no longer issue additional catalogue of renewable energy tariffs, and all renewable energy projects will have to conform with filing application information of electricity price through the national renewable energy information management platform (PRC SC Decree No. 4, 2020, Art. 3(1)). According to the principles determined by the Ministry of Finance, and in accordance with the project type, grid connection time, technical level and other conditions, power grid operators will be obliged to determine and

regularly disclose to the public a list of renewable energy power generation projects which meet all subsidy requirements and conditions. Reporting element is being introduced as power grid enterprises are required to report the list to the Ministry of Finance, the NDRC and the NEA. Previously, first seven batches of projects in the subsidy catalogues published by the institutional trio, were directly included in the subsidy list of renewable energy power generation projects of grid enterprises, and public disclosure was virtually absent.

2.8 Annual Allocation of Subsidy Funds

The new rules stipulate that subsidy funds shall be allocated annually (PRC SC Decree No. 4, 2020, Art. 3(2)), with the Ministry of Finance reserving such funds for the State Grid Corporation of China, and China Southern Power Grid. All provincial financial departments will also be allocated funds in accordance with the annual renewable energy budget and in line with what has been applied for by each provincial government in respect of subsidy needs. In turn, all grid enterprises, according to their incomes and expenditures, will be mandated to ensure liquidity for covering their obligations toward individual persons involved in distributed solar transactions. Criteria for the order of priority will include subsidies that are directly aimed at PV poverty alleviation projects, individual households distributed PV projects, and projects of shared participation (PRC SC Decree No. 4, 2020). Other projects that would be allocated with priority will include those involving green power certificate transactions and voluntary transfer to parity. Any obligations, imposed by this set of new rules, of power grid enterprises will mainly be related to accelerating the progress of payments and ensuring timely allocation of funds.

2.9 Clear Institutional Responsibilities

Pursuant to the *Opinions*, China's central government intends to light up a gray area by clarifying all main responsibilities not only with regard to subsidy payments, but also by precisising the responsibilities of several different organizations and enterprises. For example, power grid enterprises will be required to purchase renewable energy power in accordance with current legislation, and they will be obliged to make timely payments rather than postponing such payment obligations. If purchase electricity price (until recently, the renewable energy power generation feed in tariff) exceeds the average price of conventional energy power generation, the Ministry of Finance will also have an obligation to settle accounts with power grid enterprises, which represents a newly-assumed responsibility by the ministry.

2.10 Support from Financial Institutions

For the very first time China's central government spells out clearly, that financial institutions are mandated to support all enterprises which are in the list of subsidized power generation projects in accordance with the principle of marketization (PRC SC Decree No. 4, 2020, Art. 3(2)). In other words, not financing for all, but financing for those projects that carry significance to particular locale, meet approval by local authorities, and have the potential to connect with existing grid infrastructure. Following the process of "reasonable" arrangement regarding the scale of credit funds for power generation projects, the logic of the *Opinions* is to provide for effective solution to financial problems that energy projects may objectively face when they have to ensure compliance under certain regulations. At the same time, financial institutions are obliged to provide support and determine innovative financing methods, in order to accelerate the entire process of asset securitization from power generation projects listed in the subsidy list (PRC SC Decree No. 4, 2020, Art. 3(10)).

2.11 Organizational Leadership

Not remaining distant from its main trajectory, China has been pursuing under its current leadership, the promotion of high-quality development for the non-hydro renewables, also as important part of bringing strategic transformation of its energy sector, making it more independent, and accelerating the *construction of ecological civilization*. (Note 2) The new rules mandate China's relevant parties to take effective measures and implement budget performance management mechanisms, while ensuring effectiveness and outreach of national policies. All provincial branches of the NDRC, along with all finance and energy departments will be mandated to strengthen management of non-hydro renewable energy in their respective regions, and will be entrusted with formulating development plans according to actual market and economic situation locally. In compliance with China's Renewable Energy Law (Note 3) (Ministry of Commerce, 2013) and other policies and regulations, all provincial power grids will be mandated to improve the consumption level of non-hydro renewable energy power by tapping the peak potential of coal-fired power generation units, increasing the peak power supply of power grids, and optimizing the dispatching operation mode (PRC SC Decree No. 4, 2020), among others. All these stipulations and measures target one purpose, namely to guarantee full implementation of the newly-minted rules.

3. Conclusion

There is no hidden rationale behind the newly introduced regulatory measures, rather than China's own determination to create seemingly more sustainable renewable energy sector by putting in order its non-hydro renewable energy subsector first. Regulatory developments shall be widely regarded within the context of the 14th FYP, which is currently still in the making.

Consequential from central government's new approach to the industry, we could discern that policy makers and the regulator, have come to understand that fading subsidies contribute towards a more sustainable energy future (Xinhua News, 2019); transparency and competitiveness within open market, positively impact the development of renewables; clear organizational leadership and responsibilities give certainty and clarity over who is in charge at each stage; and that by supporting household distributed solar, China is addressing not only socio-economic aspects of its energy future, but is also working towards more sustainable energy planning by converting consumers into energy producers. When regulation is done for purposes other than making it easier for investors and installation owners to recoup an investment in non-hydro renewables within short period of time (Note 4), that is unequivocally - a game changer.

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Notes

Note 1. PR China's NEA and the Poverty Alleviation Office of the State Council have jointly implemented this poverty alleviation programme through installation of solar PV panels, targeting poor households in order to increase incomes of those households. The programme has started in 2014 and is currently running for the duration of six years. The programme is often being adjusted to the local conditions, as per geographical and economic specificities, yet the framework remains unchanged- PV panels are being placed on barren hill slopes, greenhouses and agricultural facilities within poverty areas.

Note 2. Since the 18th national congress of Chinese People's Congress (CPC), Xi Jinping has put forward new ideas, new judgements and new measures to build ecological civilization. For detailed analysis see Pan, 2018.

Note 3. China's Renewable Energy Law (REL) was promulgated in 2005 and first came into effect on January 1, 2006. Its main tenet was paving the way for renewables growth, introducing national targets, a feed-in tariff system, a mandatory connection, among other features.

Note 4. Without extensive government subsidy schemes for investors and installation owners, for distributed solar in particular, and depending on project's scale, return on investment (ROI) might not occur for less than decade, while under subsidising scheme, such ROI would occur within no more than 5 to 7 years from initial investment.

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