

Assessment of the Renewable Energy Law Amendment

Although the main provisions of the Renewable Energy Law – the grid enterprises' requirement to purchase all electricity generated from renewables, to provide mandatory grid connection and the penalties – did not change, the amendment introduces a few alterations that may facilitate a healthier development of renewable energy in China.

The amendment addresses three major problems, the recent boom in the Chinese renewable energy sector - particularly in the wind power sector - brought about:

1. the lack of adequate coordination and due diligence in renewable energy planning procedures, especially with regard to a lack of coordination between a) national and provincial-level governments and b) grid enterprises and power generation enterprises
2. the inefficiency of renewable energy power generation, due to renewable energy targets being formulated in terms of installed power generation capacity, rather than electricity actually generated
3. the failure of grid enterprises to provide timely grid connection to renewable energy power generation facilities, due to a lack of financial incentives as well as a lack of enforcement of existing mandatory grid connection regulations.

The December 2009 Amendment to the Renewable Energy Law, which was originally promulgated in February 2005 and became effective as of January 2006, will take effect from April 1st 2010. It (in part) addresses the problems mentioned above through a number of measures.

First of all, by specifying the requirements for the preparation of *renewable energy development and utilization plans* in more detail, and mandating to put the plans on record with the State Council energy authorities and national power supervisory institutions, the ground is set for a more coordinated, integrated development of renewable energy nationwide. This measure is aimed at improving planning processes, inter-agency coordination and strategic guidance of renewable energy development.

The amendment also includes several provisions geared towards alleviating the current situation with regard to an increasingly large number of renewable energy projects - especially wind farms - not receiving timely grid connection.¹

The reluctance of grid enterprises to connect renewable energy power generation stations to the

¹ S. Meyer of Azure International estimates: 25 to 30% of a year's installed cap. (~3.6GW 1Q09) are not connected, interconnection delay 3 to 4 months

grid stems in part from the intrinsic difficulty of renewable energy grid integration. In China, grid integration of the rapidly increasing amount of electricity generated from wind power is particularly problematic. Large fluctuations in electricity generation and the often remote location of wind farms, pose significant challenges with regard to the accommodation into the grid, especially in face of China's regionally fragmented power grid and the concentration of wind power in massive clusters in China. Grid integration therefore means more than connecting the wind farm to the local power grid. A stable and balanced grid demands a number of well-coordinated measures, ranging from construction of additional inter-provincial (ultra high voltage) transmission capacity for the transfer of electricity to far-away load centres, over power storage and smartening of the grid, to (demand-side) load management and additional conventional power reserve capacities.

In addition, grid enterprises have little stake in increasing the amount of renewable energy in their grid, since they do not profit from its integration financially. On the contrary, the integration of renewable energy is a considerable drain of working capital due to the extra costs incurred in the grid connection and electricity purchase.

In future, *renewable energy development and utilization plans* are mandated to include a plan for the construction of supplementary electricity grid transmission capacity in accordance with the plans for renewable energy development. This may facilitate the coordination of grid expansion plans (of grid enterprises) with plans for construction of renewable energy capacity (of power generation enterprises), as well as the construction of transmission lines across provincial borders. To support grid companies in the integration of an increasing amount of fluctuating renewable energy into the grid, article 14 of the amendment also adds the requirement for renewable energy projects to conform to special technical standards for grid connection (grid code). Furthermore, *power enterprises are obligated to coordinate with grid enterprises to ensure the stability of the power grid.*

In article 14, the amendment features a *government guarantee* for grid enterprises' purchase of the full amount of electricity generated from renewable energy, which is supervised by energy authorities of the State Council together with the *national power supervisory institutions* (presumably SERC). The strong language suggests government authorities may take a more firm stance with regard to enforcing grid connection and renewable power purchase regulations in future, compared to the lax enforcement in the past.

Said article, also includes a new provision that may be the most important alteration to the original law. It introduces the requirement for *energy authorities of the State Council, together with national power supervisory institutions and the financial department of the State Council* to promulgate a renewable energy quota *in accordance with the national renewable energy development and utilization plan*. This quota is quantified in terms of the *percentage of the quantity of electricity generated from renewables [...] in the total quantity of electricity generated within the planned period*. This provision hints at a change of policy, changing the metric of renewable energy targets, shifting the focus from renewable energy capacity installed towards the amount of electricity actually generated from renewables.

Sino-German Renewable Energy Programme

of the German Development Cooperation (GTZ)

中德可再生能源项目

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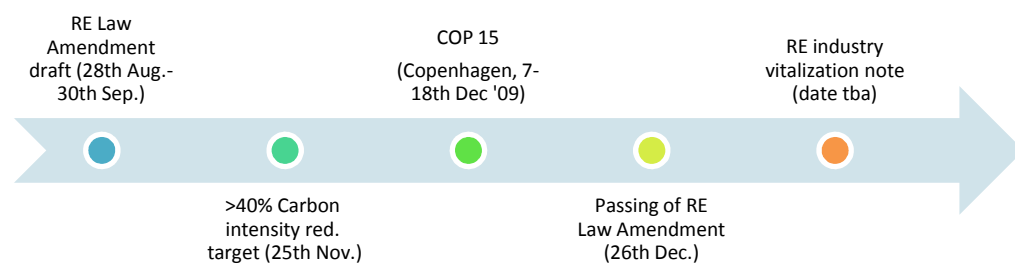


In the same vein, the relevant authorities are also required to *formulate specific regulations for grid enterprises regarding priority power dispatching and purchase of the full amount of electricity generated from renewable energies*. Article 14 goes on detailing the duties of grid enterprises, highlighting measures facilitating smooth integration of electricity generated from renewables into the grid (incl. mention of smart grid and power storage).

Furthermore, the amendment determines the renewable energy fund as the source for grid enterprises to retrieve excess costs for renewable energy purchase and grid connection, allocating the revenue of the nationwide renewable energy surcharge and a special position in the annual budget as the funds' resources.² Clarifying the mechanisms for retrieval of the excess cost of renewable energy may contribute to reducing grid enterprises' resistance to connect renewable projects to the grid. Still, a void of incentives for grid enterprises to have a stake in renewable energy remains.

Supervision and enforcement of the laws' provisions is strengthened through the addition of references to the *national power supervisory institutions* to supervise implementation as well as the requirement to include "guarantee measures" in the *renewable energy development and utilization plans*. However, while the interpretation above offers a rather positive outlook on the potential inherent in the Renewable Energy Law Amendment, prospects for the impact of the law dangle on the string of enforcement and may be hampered by relatively weak provisions for monitoring and penalization³.

Renewable Energy Law Amendment Timeline:



² The implementation regulation detailing specific methods for the collection, use, and management of the renewable energy development fund is yet to be formulated.

³ Contrary to widespread reports in the (English-language) media, the law does not include a significant change in the penalty section.

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Brief Summary of Changes in the Amended Renewable Energy Law

Improving renewable energy planning procedures

- Planning shall take into account RE technology development [Art. 8]
- State Council shall draft further legislation in support of achieving the RE targets [Art. 8]
- More detailed provisions for RE development & utilization plans
 - Local governments are required to design their local RE development plans in accordance with the national RE development plan AND submit them to State Council energy authorities and SERC for record [Art. 8]
 - “Plans shall include development targets, major tasks, plan for regional distribution, key projects, a schedule for implementation, complementary grid construction planning, a supporting system, and measures to guarantee implementation.” [Art. 9]

Quota for electricity generated from renewables

- Government-guaranteed purchase of electricity generated from renewables [Art. 14]
- Introduction of quota for electricity generated from renewables [Art. 14]
 - Responsible authorities: State Council energy department, together with the financial department and national power supervisory organ
 - Quota set in terms of *the percentage of the quantity of electricity generated from renewable energies in the total quantity of electricity generated during the planned period*
 - Supervised by: State Council energy department and national power supervisory organ
- In addition, the relevant authorities are mandated to *formulate the specific regulations for grid enterprises [regulating] priority power dispatching and purchase of the full amount of electricity generated from renewable energies* [Art. 14]

Facilitating renewable energy grid integration

- Grid expansion planning now part of renewable energy development & utilization plans [Art. 9]
- Renewable energy projects are now mandated to conform to grid code [Art. 14]
- Utilities are required to coordinate with grid co.'s to ensure grid stability [Art. 14]
- Grid co.'s are mandated to expand grid construction and increase efforts to enable smooth integration of electricity generated from renewable (incl. development of smart grid and power storage capabilities) [Art. 14]
- RE Fund:
 - Sources specified:
 - dedicated position in annual budget
 - + National renewable energy surcharge revenue [Art. 24]
 - Uses detailed:
 - Grid co.'s are refunded the additional costs from purchase of electricity generated from renewable energy over conventional energy sources via the revenue collected through the renewable energy surcharge levied on the national electricity price [Art. 20 & 24] (Original Renewable Energy Law: additional costs retrieved by grid co.'s via electricity sales price)
 - Grid co.'s can apply for a subsidy to retrieve grid connection expenses not retrievable via the

electricity sales price [Art. 19 & Art. 24]

Comparison of Original and Amended Renewable Energy Law

The Table below shows the chinese text as well as a translation of the Renewable Energy Law (left) and its Amendment (right). Additions or changes to the original Renewable Energy Law are underlined in the translation of the Amendment text (column on the right).

Renewable Energy Law (Original)	Renewable Energy Law (Amended)
<i>Promulgated: 28.02.05</i>	<i>Promulgated: 26.12.09</i>
<i>Effective: 1.1.06</i>	<i>Effective: 1.4.10</i>
Chapter II Resources Investigation and Development Planning	Chapter II Resources Investigation and Development Planning
<p>Article 8 Energy authorities of the State Council shall, on the basis of the middle and long-term total volume target of renewable energy throughout the country, prepare national renewable energy development and utilization plan, which is to be implemented after being approved by the State Council.</p>	<p>Article 8 The energy department of the State Council in conjunction with other relevant departments of the State Council shall, in accordance with the national medium- and long-term renewable energies development and utilization targets <u>and the status of RE-technology development</u>, work out a national plan for the development and utilization of renewable energies, submit it to the State Council, and implement it after approval.</p>
<p>Energy authorities of the people’s governments at the level of province, autonomous region and municipality shall, on the basis of the middle and long-term target for the development and utilization of renewable energy, cooperate with relevant authorities of the people’s governments at their own level in preparing renewable energy development and utilization plan for their own administrative regions, which shall be implemented after being approved by people’s governments at their own level.</p>	<p><u>Relevant departments of the State Council shall formulate plans favourable for promoting the realization of the national medium- and long-term renewable energy targets.</u></p>
<p>The approved plan shall be released to the public, with the exception of confidential content as stipulated by the government.</p>	<p>Energy authorities of the people's governments at the level of province, autonomous region and municipality shall in conjunction with relevant authorities of the people's governments at their own level, in accordance with <u>the national renewable energy development and utilization plan</u> and the middle and long-term target for the development and utilization of renewable energy</p>

In case that the approved plan needs to be modified, approval of the original approving authorities shall be obtained.

within their own jurisdiction, prepare renewable energy development and utilization plans for their own administrative regions, after approval by the people's governments at their own level, submit them to the energy authorities of the State Council and the national power supervisory institutions for record, and organize the implementation.

The approved plan shall be published except those parts that the state requires to keep confidential.

Any amendment to an approved plan shall be subject to the approval of the original approving organ.

第八条 国务院能源主管部门根据全国可再生能源开发利用中长期总量目标，会同国务院有关部门，编制全国可再生能源开发利用规划，报国务院批准后实施。

第八条 国务院能源主管部门会同国务院有关部门，根据全国可再生能源开发利用中长期总量目标和可再生能源技术发展状况，编制全国可再生能源开发利用规划，报国务院批准后实施。

省、自治区、直辖市人民政府管理能源工作的部门根据本行政区域可再生能源开发利用中长期目标，会同本级人民政府有关部门编制本行政区域可再生能源开发利用规划，报本级人民政府批准后实施。

国务院有关部门应当制定有利于促进全国可再生能源开发利用中长期总量目标实现的相关规划。

经批准的规划应当公布；但是，国家规定需要保密的内容除外。

省、自治区、直辖市人民政府管理能源工作的部门会同本级人民政府有关部门，依据全国可再生能源开发利用规划和本行政区域可再生能源开发利用中长期目标，编制本行政区域可再生能源开发利用规划，经本级人民政府批准后，报国务院能源主管部门和国家电力监管机构备案，并组织实施。

经批准的规划需要修改的，须经原批准机关批准。

经批准的规划应当公布；但是，国家规定需要保密的内容除外。

经批准的规划需要修改的，须经原批准机关批准。

Article 9 In preparing the plan for the development and utilization of renewable energy, opinions of relevant units, experts and the public

Article 9 In preparing the plan for the development and utilization of renewable energy, it is necessary to make comprehensive

shall be solicited and the scientific reasoning shall be done.

arrangements for the development and utilization of renewable energy such as wind energy, solar energy, water energy, biomass energy, geothermal energy, and ocean energy by following the principles of developing a plan in line with local conditions, making an overall plan taking all factors into consideration, promoting reasonable distribution, and systematic development. The plan shall include development targets, major tasks, a plan for regional distribution, key projects, [a schedule for] implementation progress, complementary grid construction planning, a service system, and measures to guarantee implementation.

Organizations responsible for organizing and preparing the plan shall seek opinions from relevant units, experts, and the public and carry out scientific authentication.

第九条 编制可再生能源开发利用规划，应当征求有关单位、专家和公众的意见，进行科学论证。

第九条 编制可再生能源开发利用规划，应当遵循因地制宜、统筹兼顾、合理布局、有序发展的原则，对风能、太阳能、水能、生物质能、地热能、海洋能等可再生能源的开发利用作出统筹安排。规划内容应当包括发展目标、主要任务、区域布局、重点项目、实施进度、配套电网建设、服务体系和保障措施等。

组织编制机关应当征求有关单位、专家和公众的意见，进行科学论证。

Chapter III Industrial Guidance and Technical Support

Article 14: Grid enterprises shall enter into grid connection agreements with renewable power generation enterprises that have legally obtained administrative license or for which filing has been made, and buy all of the grid-connected electricity generated from renewable energy within the coverage of their power grid, and provide grid-connection service for renewable energy electricity generation.

Chapter III Industrial Guidance and Technical Support

Article 14 The State put into effect a system guaranteeing the complete purchase of electricity generated from renewable energies.

Together with the national power supervisory institutions and the financial department of the State Council, energy authorities of the State Council shall, in accordance with the national renewable energy development and utilization

plan, set the percentage of the quantity of electricity generated from renewable energies in the total quantity of electricity generated during the planned period [RE Quota], formulate specific methods for grid enterprises' priority dispatching and purchase of the full amount of electricity generated from renewable. Energy authorities of the State Council shall work together with the national power supervisory institutions to supervise the implementation of the annual plan.

Grid enterprises shall enter into grid connection agreement with renewable power generation enterprises that have been built in accordance with renewable energy development and utilization plan and have legally obtained administrative license or for which filing has been made and buy the grid-connected electricity generated from renewable energy projects that conform to the technical standard of grid connection within the coverage of their power grid. Power enterprises are obligated to coordinate with grid enterprises to ensure the stability of the power grid.

Grid enterprises shall increase efforts for construction of the power grid, expand the scope of renewable energy distribution, develop and apply the use of smart grid and power storage technologies, perfect the operation and management of power grid, enhance the capability of absorbing electricity generated from renewable energy, and provide grid-connection service for the generation of power with renewable energy.

第十四条 电网企业应当与依法取得行政许可或者报送备案的可再生能源发电企业签订并网协议，全额收购其电网覆盖范围内可再生能源并网发电项目的上网电量，并为可再生能源发电提供上网服务。

第十四条 国家实行可再生能源发电全额保障性收购制度。

国务院能源主管部门会同国家电力监管机构 and 国务院财政部门，按照全国可再生能源

开发利用规划，确定在规划期内应当达到的可再生能源发电量占全部发电量的比重，制定电网企业优先调度和全额收购可再生能源发电的具体办法，并由国务院能源主管部门会同国家电力监管机构在年度中督促落实。

电网企业应当与按照可再生能源开发利用规划建设，依法取得行政许可或者报送备案的可再生能源发电企业签订并网协议，全额收购其电网覆盖范围内符合并网技术标准的可再生能源并网发电项目的上网电量。发电企业有义务配合电网企业保障电网安全。

电网企业应当加强电网建设，扩大可再生能源电力配置范围，发展和应用智能电网、储能等技术，完善电网运行管理，提高吸纳可再生能源电力的能力，为可再生能源发电提供上网服务。

Chapter V Price Control and Cost Apportionment

Article 20: The excess between the expenses that power grid enterprises have from the purchase of electricity generated from renewables resulting from the price determined in Article 19 hereof, and the expenses incurred in the purchase of electricity generated conventional energy sources at the average price, shall be shared in the electricity sales price. Price authorities of the State Council shall prepare specific methods.

第二十条 电网企业依照本法第十九条规定确定的上网电价收购可再生能源电量所发生的费用，高于按照常规能源发电平均上网电价计算所发生费用之间的差额，附加在销售电价中分摊。具体办法由国务院价格主管部门制定。

Article 22 For independent renewable energy power systems invested in or subsidized by the Government, the region's usual electricity sales

Chapter V Price Control and Cost Compensation

Article 20 The excess between the expenses that power grid enterprises have from the purchase of electricity generated from renewables resulting from the price determined in Article 19 hereof, and the expenses incurred in the purchase of electricity generated conventional energy sources at the average price, shall be compensated from the revenue collected through the renewable energy surcharge levied on the national electricity price.

第二十条 电网企业依照本法第十九条规定确定的上网电价收购可再生能源电量所发生的费用，高于按照常规能源发电平均上网电价计算所发生费用之间的差额，由在全国范围对销售电量征收可再生能源电价附加补偿。

Article 22 For independent renewable energy power systems invested in or subsidized by the Government, the region's usual electricity sales

price shall be adopted, and the excess between its reasonable operation and management expenses and the sales price shall be shared on the basis of the method as specified in Article 20 hereof.

第二十二条 国家投资或者补贴建设的公共可再生能源独立电力系统的销售电价，执行同一地区分类销售电价，其合理的运行和管理费用超出销售电价的部分，依照本法第二十条规定的办法分摊。

Chapter VI Economic Incentives and Supervisory Measures

Article 24 The Government budget establishes a renewable energy development fund to support the following:

1. Scientific and technological research, standard establishment and pilot project for the development and utilization of renewable energy;
2. Construction of renewable energy projects for domestic use in rural and pasturing areas;
3. Construction of independent renewable power systems in remote areas and islands;
4. Surveys, assessments of renewable energy resources, and the construction of relevant information systems;
5. Localized production of the equipment for the development and utilization of renewable energy.

price shall be adopted, and the excess between its reasonable operation and management expenses and the sales price shall be compensated on the basis of the method as specified in Article 20 hereof.

第二十二条 国家投资或者补贴建设的公共可再生能源独立电力系统的销售电价，执行同一地区分类销售电价，其合理的运行和管理费用超出销售电价的部分，依照本法第二十条的规定补偿。

Chapter VI Economic Incentives and Supervisory Measures

Article 24 The Government budget establishes renewable energy development fund. The sources of the fund include the special fund annually arranged by the government budget and the income of the renewable energy surcharge which is levied in accordance with law.

The renewable energy development fund is used to compensate the excess cost as stipulated in article 20 and article 22 of this law and is used to support the following:

1. Scientific and technological research, standard establishment and pilot project for the development and utilization of renewable energy;
2. Construction of renewable energy projects in rural and pasturing areas;
3. Construction of independent renewable power systems in remote areas and islands;
4. Surveys, assessments of renewable energy resources, and the construction of relevant information systems;
5. Localized production of the equipment for the development and utilization of renewable energy.

For grid connection expenses and other reasonable expenses stipulated in Article 21 of

this law, grid enterprises can apply for a subsidy paid from the renewable energy development fund if they cannot retrieve them from the sales price.

The financial department of the State Council shall work together with the departments of the State Council in charge of energy and price to formulate specific methods for the collection, use, and management of the renewable energy development fund.

第二十四条 国家财政设立可再生能源发展专项资金，用于支持以下活动：

- （一）可再生能源开发利用的科学技术研究、标准制定和示范工程；
- （二）农村、牧区生活用能的可再生能源利用项目；
- （三）偏远地区 and 海岛可再生能源独立电力系统建设；
- （四）可再生能源的资源勘查、评价和相关信息系统建设；
- （五）促进可再生能源开发利用设备的本地化生产。

第二十四条 国家财政设立可再生能源发展基金，资金来源包括国家财政年度安排的专项资金和依法征收的可再生能源电价附加收入等。

可再生能源发展基金用于补偿本法第二十条、第二十二条规定的差额费用，并用于支持以下事项：

- （一）可再生能源开发利用的科学技术研究、标准制定和示范工程；
- （二）农村、牧区的可再生能源利用项目；
- （三）偏远地区 and 海岛可再生能源独立电力系统建设；
- （四）可再生能源的资源勘查、评价和相关信息系统建设；
- （五）促进可再生能源开发利用设备的本地化生产。

本法第二十一条规定的接网费用以及其他相关费用，电网企业不能通过销售电价回收的，

可以申请可再生能源发展基金补助。

可再生能源发展基金征收使用管理的具体办法，由国务院财政部门会同国务院能源、价格主管部门制定。

Chapter 7 Legal Responsibilities

Article 29 If the power grid enterprises breach Article 14 hereof and fail to purchase the full amount of electricity generated from renewables, which results in economic loss to the renewable power generation enterprises, such power grid enterprises shall be liable for compensation, and the national power supervisory institutions shall order them to make correction within a stipulated period of time; in case of refusal to make correction, a fine of less than the economic loss of the renewable power generation enterprises shall be imposed.

第二十九条 违反本法第十四条规定，电网企业未全额收购可再生能源电量，造成可再生能源发电企业经济损失的，应当承担赔偿责任，并由国家电力监管机构责令限期改正；拒不改正的，处以可再生能源发电企业经济损失额一倍以下的罚款。

Chapter 7 Legal Responsibilities

Article 29 If the power grid enterprises breach Article 14 hereof and fail to purchase the full amount of electricity generated from renewable in accordance with regulations, which results in economic loss to the renewable power generation enterprises, such power grid enterprises shall be liable for compensation, and the national power supervisory institutions shall order them to make correction within a stipulated period of time; in case of refusal to make correction, a fine of less than the economic loss of the renewable power generation enterprises shall be imposed.

第二十九条 违反本法第十四条规定，电网企业未按照规定完成收购可再生能源电量，造成可再生能源发电企业经济损失的，应当承担赔偿责任，并由国家电力监管机构责令限期改正；拒不改正的，处以可再生能源发电企业经济损失额一倍以下的罚款。