

Head and Members of the CDM Executive Board
Mr. Clifford Mahlung
Chairman
UNFCCC Secretariat
Martin-Luther-King-Strasse 8
D 53153 Bonn
Germany

Project Developer Forum Ltd.
100 New Bridge Street
UK London EC4V 6JA

Mailing address:
Schulstrasse 25
CH 3256 Dieterswil BE

t: +44 20 3286 2520
office@pd-forum.net
www.pd-forum.net

To cdm-info@unfccc.int
From martin.enderlin@pd-forum.net
Date 11th July 2010
Page 1/14
Subject **Chinese Tariffs for Hydropower Projects**

CHAIRMAN

Your contact:
Martin Enderlin
m: +41 79 459 81 18
martin.enderlin@pd-forum.net

Honourable Members of the CDM Executive Board,
Dear Mr. Mahlung,

We welcome the recent disclosure of the list of highest tariffs for Chinese hydropower projects which the Secretariat has been using as a basis to determine the additionality of projects submitted for registration.

Before commenting on individual tariffs published for different provinces, the Project Developer Forum (PD Forum) would like to provide some general information about the regulatory framework for tariff determination of hydropower projects in China. Given the complexity of the issue, and the fact that the discussion on hydropower projects is more recent than the discussion on wind electricity tariffs in China, we would like to provide consolidated information for a better understanding and exchange on the topic.

Annex 1 provides information on the regulations and policies relevant to the determination of electricity tariffs for hydropower in China, and highlights the multi-layered process (involving regulations at different government levels). Annex 2 provides a summary of the development of major policies and regulations within China's electricity sector.

In Annexes 3 to 5, additional information is provided on some of the highest tariffs observed in different provinces as per the database disclosed by UNFCCC. Due to time constraints the analysis focuses on certain key provinces.

Given the existing regulatory framework for hydropower projects in China, the complexity and diversity of tariff determination systems across different provinces and the realities on the ground (in terms of actually assigned and paid tariffs), the PD Forum urges the Secretariat and Executive Board to consider the information provided in the annexes to this letter in order to determine whether changes are required to the overall approach for assessing the appropriateness of a certain tariff for a given project.

Please do feel free to contact us for further information regarding the contents of this submission.

Yours sincerely,



Martin Enderlin
Chairman
Project Developer Forum

Date 11th July 2010
Page 2/14
Subject **Chinese Tariffs for Hydropower Projects**

Annexes:

- Annex 1: Current policies and regulations for hydropower tariff determination in China
- Annex 2: Historic development of policies in the power sector in China
- Annex 3: Details on electricity tariffs for hydropower projects in Sichuan province
- Annex 4: Details on electricity tariffs for hydropower projects in Yunnan province
- Annex 5: Details on electricity tariffs for hydropower projects in Gansu province

CC:

- UNFCCC Secretariat, Director SDM, John Kilani
- UNFCCC Secretariat, Daniele Violetti

Date 11th July 2010
Page 3/14
Subject **Chinese Tariffs for Hydropower Projects**

Annex 1 Current policies and regulations for hydropower tariff determination in China

Determination of electricity tariffs for hydropower projects in China

In China, hydropower tariffs are determined based on policies defined by the Central Government specifically, the National Development and Reform Commission (NDRC), and are subsequently passed on to regional and local level administrative units. It is important to note that there is a certain degree of autonomy at different levels of government with regard to tariff-setting mechanisms. Policies and laws are designed at the Central Government level, but local governments (from provincial to municipal to county levels) implement policies and laws via publication and enforcement of regulations¹. Based on centralised policy, the provincial and local authorities determine a local government-guided tariff, taking the local situation into account². The relevant tariff – provincial or local – will be considered, depending on the level of the electricity grid at which the produced power is dispatched. Only with the approval of the respective governmental authority renewable-energy-based electricity can be fed into the power grid. For example, hydropower stations dispatching electricity at the provincial grid level are subject to tariff setting by the provincial authorities, whereas projects dispatching at local sub-grid levels are subject to price determination by the municipal or county level authorities³. Such provincial or local authorities include the respective grid companies at provincial, municipal or county level.

Why can multiple tariffs be found in one province?

The China Price Law specifies how price determination shall be undertaken considering the local situation⁴. When determining the tariff at local level, the authorities take various factors into account, including local demand and supply, the general economic level, the availability of infrastructure, and price differences in comparison to other areas. Therefore it is very common to see different tariffs implemented among different counties within one province, or even different tariffs within the same county⁵.

Depending on the economic development level, some counties have more mature regulatory systems where tariff regulations are set to improve efficient generation and grid usage. Other areas have yet to implement this.

In general, tariffs regulated at the local level are lower than the provincial level and this is confirmed by information on individual provinces as provided in Annexes 3 to 5. There are several reasons for lower tariffs at the local grid level:

- Topography and precipitation restrict projects to remote areas that do not have infrastructure available for direct access to the provincial grid. The costs of constructing and maintaining the transmission line are borne by the local grid company. However, at least part of these costs are often passed on to electricity generators by the implementation of low tariffs. Should the project owner in a remote area decide to bear the costs for a long transmission line to the provincial power

¹ Article 35 of China's Electricity Law (enacted on 01/04/1996) stipulates that the tariff shall be based on a centralized policy, fixed in accordance with a unified principle and administered at different level. Article 36 Determination of tariff shall be based on the principles of reasonable compensation of cost and reasonable determination of profits, legal incorporation of taxes, fairly shared burdens and promotion of electric power construction.

² Article 21 of China Price Law.

³ NDRC Economic Research Institute, 2005, A Study of Electricity Tariff Policy for Promoting Energy Conservation and Renewable Energy Development, Page 20.

⁴ Article 21 – Determination shall be based on the average costs of society and market supply and demand situation of relevant commodities or services, requirements of national economic and social development and tolerance of society and difference in prices in procurement and marketing, wholesale and retail, regions and seasons shall be followed.

⁵ Sichuan Province is an example. According to published guidelines on Sichuan Province Price Bureau, no unified tariff is determined for locally dispatched hydropower stations. (www.scp.gov.cn/zcfg/zcfg-content.asp?id=512) Jiangxi Province is another example. It is common that hydropower stations have their tariff determined on a case by case basis based on reported investment and cost. (<http://www.93jx.org/list.asp?tid=24&id=786>)

Date 11th July 2010
Page 4/14
Subject **Chinese Tariffs for Hydropower Projects**

grid, project cost would increase substantially, which is likely to have a significant negative impact on the project's IRR.

- Projects are often located in rural areas with a relatively low level of economic development and therefore a relatively low demand for electricity. Consequently, tariffs paid at the local level are often very low. Alternatively, to meet demand in more developed areas, electricity has to overcome greater distances via several layers of the electricity grid, which leads to high transmission losses that are taken into consideration by local grid companies when determining electricity tariffs.
- Most hydropower stations with reservoirs are more capital intensive and of larger generation capacity, and because of their scale, most are connected to provincial grids. Run-of-river (RoR) hydropower stations without regulating capacity, on the other hand, do not contribute to local grid stabilisation, or even negatively impact grid stability. Consequently, the tariffs applied to different hydropower stations types might vary depending on the needs of the grid to which they are connected.

Differences between hydro and wind electricity tariffs

It is important to note that there are differences among different electricity generation technologies in China. For example hydropower tariffs are determined differently to wind power tariffs.

There are promotional policies or subsidies in China for **new** renewable energy technologies, including wind. Hydropower, however, is excluded from these policies as it is not considered as a “new” renewable energy technology. For example, the Provisional Administrative Measures on Pricing and Cost Sharing for Renewable Energy Power Generation (NDRC Price [2006] No. 7), hereafter referred to as the “NDRC Price Measure”, sets out details on price setting and cost sharing related to the feed-in tariffs under the Renewable Energy Law (enacted on 01/01/2006). The NDRC Price Measure stipulates a guaranteed power purchase by the grid company, and provides tariff protection measures for renewable energy projects. These incentive policies are only applicable to some technologies (including wind power), but hydropower is explicitly excluded from these policies.

In addition, a concession programme was implemented in the wind power industry in China after the Power Sector Reform (but now stopped), whereby Greenfield wind power stations go through a bidding mechanism in order to secure power purchase agreements with the grid company⁶. The concessions were generally for very large scale wind projects, normally over 100 MW, while the “normal” wind projects, which received approved tariffs as explained above, were generally only up to 50 MW.

Most of the wind projects are connected and dispatched directly by the provincial grids. However, the majority of small hydropower projects are dispatched via local grids.

Conclusion

The electricity tariff determination for hydropower in China is regulated in a multi-layered process at different government levels. Different regulations and tariffs might apply within the same region (e.g. province or county) depending on the dispatch level of the hydropower project, the type and size of the hydropower project, and the corresponding authority responsible for determining the tariff.

⁶ Baker McKenzie, 2009, Report on China Renewable Energy Law, page 8.

Date 11th July 2010
Page 5/14
Subject **Chinese Tariffs for Hydropower Projects**

Annex 2 Historic development of policies in the (hydro-)power sector in China

Prior to the adoption of the Kyoto Protocol in 1997 Before 1985

From 1949 (when the People's Republic of China was established) to 1985, the hydropower sector was run by the State. Without a market system in place, generation, transmission and distribution were strictly controlled by the Government⁷.

1986 to March 2002

Between 1986 and 1997 the private sector was permitted to invest in small hydropower stations with an installed capacity below 25 MW. State-owned companies, however, dominated the sector. To encourage electricity sector development, the Electricity Law was implemented in 1996, establishing the principle of "reasonable compensation of cost and reasonable determination of profits"⁸. During this initial stage, and to boost economic development, new policies were established to encourage the use of financial leverage. A "loan-period tariff" was implemented, which is a mechanism that allows project investors to apply for a tariff (from the State's Grid Company and according to the Price Bureau) that justifies reasonable net profit after repayment of loan and taxations⁹. Consequently, a phenomenon of "one station, one tariff" was widely observed throughout China¹⁰. A standard tariff did not exist. This mechanism was implemented as a measure to attract investment to the power sector, however deficiencies in this mechanism were soon observed. The mechanism lacked incentives for competition and efficiency improvement within the hydropower sector. Revised policies at the central government level were published (see below), and in some areas the tariff determination process was corrected. In other regions, however, such a tariff determination method persisted for over a decade.

Therefore, the policies available as of 11/12/1997 and 11/11/2001 are the same: Tariff determination continued to be derived based on the specific costs of the planned hydropower station. As described above, based on project specific operation and maintenance costs, as well as financial costs and taxation, combined with a pre-determined internal rate of return (IRR), the optimal (project specific) electricity tariff was calculated and requested by the developer and approved by the Government.

March 2002 onwards

This period marks the start of Electricity Sector Reform. In March 2002, the State Council approved the Electricity Power Sector Reform Plan, which restructured the power sector by separating electricity generation, transmission, and distribution from one other. The Notification of Tariff Reform Methods published by the State Council in July 2003 announced that the "loan period tariff" system was to be replaced by the "operation period tariff" mechanism — a tariff determination system that is based on market mechanisms, with government's supervision on a minimum tariff limit. Bilateral agreements can be established between the generator and grid companies¹¹.

The Electricity Power Sector Reform stimulated the creation of market mechanisms, but only to a certain extent (government tariff regulations have not been totally removed to date). With the partial implementation of market mechanisms, however, competition was encouraged and developers were incentivized to improve efficiency.

⁷ Page 2 Guotai Junan Securities Research Report.

⁸ Article 35 of China's Electricity Law (enacted on 01/04/1996) stipulates that the tariff shall be based on a centralized policy, fixed in accordance with a unified principle and administered at a different level. Article 36 Determination of tariff shall be based on the principles of reasonable compensation of cost and reasonable determination of profits, legal incorporation of taxes, fairly shared burdens and promotion of electric power construction.

⁹ Notification on Small Hydropower Tariff issued by State's Economic Committee, Hydropower Ministry and Price Bureau (<http://www.cqpn.gov.cn/gb/laws/xxfg/wj20005.htm>).

¹⁰ <http://www.93jx.org/list.asp?tid=24&id=786>.

¹¹ Article 13 and 14 of the Notification of Tariff Reform Methods.

Date 11th July 2010
Page 6/14
Subject **Chinese Tariffs for Hydropower Projects**

Presently, the tariff determination system remains based on the same principles established during the Electricity Power Sector Reform. The Electricity Power Sector Reform created a tariff determination system that is more market based, thus enhancing competition and encouraging technology development to a certain level, but retaining some government involvement in tariff setting regulations. As a result of the introduction of a more market based system, a market revolution of sorts has taken place throughout the entire power sector. As previously mentioned, the Electricity Power Sector Reform cannot be considered as a policy that was specifically established to encourage hydropower or renewable energy development; it represents a significant reform to the regulatory framework of the entire electricity generation sector affecting all sorts of power generation technologies.

In January 2006, the Renewable Energy Law came into effect, and included supportive measures such as “power grid tariff standards set by regions” and “the allocation of the cost differential between renewable energy and conventional energy”. However, specific measures remain to be worked out regarding how to formulate power grid tariffs by region, and how to allocate the cost differential between renewable energy and conventional energy¹².

It is important to note that several measures introduced by the Renewable Energy Law targeted only “new” renewable energy technology and are not applicable to hydropower because, as mentioned above, hydropower is not considered as a “new” renewable energy technology.

¹² NDRC Economic Research Institute, 2005, A Study of Electricity Tariff Policy for Promoting Energy Conservation and Renewable Energy Development

Date 11th July 2010
Page 7/14
Subject **Chinese Tariffs for Hydropower Projects**

**Annex 3
Hydro Power Tariff
Sichuan Province**

Tariffs listed by Secretariat:

Scale	Type	Highest tariff (incl VAT)	Highest tariff (excl VAT)	Installed capacity [MW]	Project #	Case
SSC	RoR	0.29	0.274	10	2154	A
	Reservoir	0.294	0.277	10.5	2788	B
Large	RoR	0.254	0.217	162	2206	C
	Reservoir	0.288	0.246	56	2197	

Tariffs we wish to be re-considered:

Case A:

Scale	Type	Highest tariff (incl VAT)	Highest tariff (excl VAT)	Installed capacity [MW]	Project #
SSC	RoR	0.29	0.274	10	2154

Reason(s) for reconsideration:

- The tariff has not been/will not be implemented.

According to the Approval for connection to Sichuan Provincial Grid and Tariff notification issued by Sichuan Province Price Bureau, project 2154 is dispatched at the provincial level and the project receives a tariff of 0.288 RMB/kWh (incl. VAT) or 0.246 RMB/kWh (excl. VAT), which is line with the tariff guidelines for hydro projects dispatched to the provincial grid (see section "Regulations applicable to hydro projects in Sichuan Province" below). The PDD mentions an anticipated tariff of 0.290 RMB/kWh (inc. VAT) which is based on the "Agreement letter of electricity supply establishing the grid price valid for Dongxi, Fengziyan, Likou, Yangmousi, Beituo, Liyuan Hydropower Stations" issued by Sichuan Cangxi Qimingxing Electricity Co., Ltd. (the local grid company) on 19/08/2006. This particular project had the option to export electricity at local or provincial level and ultimately opted for a dispatch arrangement at provincial level. As a consequence, the agreement with the local grid company did not become effective and the project never received the tariff of 0.29 RMB/kWh (incl. VAT). Based on the provincial approval issued in 2007, the actual tariff for this project is 0.288 RMB/kWh (incl. VAT).

This case illustrates that the tariff of 0.29 RMB/kWh is relevant in the context of the investment decision for this particular project. However, given that tariffs at local level are subject to bilateral negotiations and not completely standardised, and that this "anticipated" tariff never became effective, it should not be used as reference for other projects connected at local or provincial grid level.

Evidence:

- Approval for connection to Sichuan Provincial Grid, Chuandianyingxiao[2007]33;
- Tariff notification issued by Sichuan Province Price Bureau, Chuanjiafa[2008]85 .

Case B:

Scale	Type	Highest tariff (incl VAT)	Highest tariff (excl VAT)	Installed capacity [MW]	Project #
SSC	Reservoir	0.294	0.277	10.5	2788

Date 11th July 2010
Page 8/14
Subject **Chinese Tariffs for Hydropower Projects**

Reason(s) for reconsideration:

- The listed tariff is not consistent with the listed source and it has been granted with special reasons that are not applicable to other projects

Project 2788 is dispatched at the county level. The project receives a tariff of 0.294 (or 0.2938 as per the source) RMB/kWh (incl. VAT) only for the first 8 years of operation in accordance with the preferential policy GongFuFa[2003]78 supporting small hydropower projects in Gong County issued by the Gong County Government. After 8 years of operation, the tariff will be decreased to the guiding tariff applicable to small hydropower projects in the County (0.226 RMB/kWh incl. VAT), in accordance with the policy.

As a result of this preferential policy, the project receives a tariff averaged at 0.244 RMB/kWh (incl. VAT)¹³. As mentioned above, the guiding tariff for small hydro power projects in Gong County is 0.226RMB/kWh (incl. VAT).

Evidence:

- PDD:
<http://cdm.unfccc.int/UserManagement/FileStorage/IJPVQAU9GYH72XB5L0WMRF3NES4T8C>
- Validation Report:
<http://cdm.unfccc.int/UserManagement/FileStorage/WTLMVF1EAPR3J5QXU0N2YIGDSZK47B>
- PPA and Gong County Price Bureau: On-Grid tariff approval, Document No.: [2004]55

Case C:

Scale	Type	Highest tariff (incl VAT)	Highest tariff (excl VAT)	Installed capacity (MW)	Project #
Large	RoR	0.254	0.217	162	2206

Reason(s) for reconsideration:

- The tariff cannot be found in the source of tariffs listed in the “Information Note on the highest tariffs applied by the Executive Board in its decision on registration of projects in the People’s Republic of China”.

Project 2206 is dispatched at the provincial level. The *average* tariff is indicated as 0.188 (excl. VAT) in the PDD and Validation Report. This tariff was calculated with 9 different tariffs for 9 different periods in a year, taking into account the amount of electricity that would be generated in each of the 9 periods. The *base* tariff as mentioned in the PDD and the Validation Report is 0.246 RMB/kWh excl. VAT (i.e. 0.288 RMB/kWh incl. VAT), which is the guiding tariff of hydro projects dispatched by the provincial grid (see the section “Regulations applicable to hydro projects in Sichuan Province” below). This tariff was confirmed by the electricity generation invoices for project 2206, as stated in the Validation Report.

Evidence:

- PDD:
<http://cdm.unfccc.int/UserManagement/FileStorage/WZYL2ATD76JXF1M08KQS59RGP4CUVH>
- Validation Report:
<http://cdm.unfccc.int/UserManagement/FileStorage/873R01N2JGLFVY9Q6PIK5CEWSHXODZ>
- Electricity generation invoices

Regulations applicable to hydro projects in Sichuan Province:

Projects directly dispatched by Sichuan Provincial Grid

- 2004: Fagaijiage[2004]1038 issued by NDRC, the guiding tariff for hydro projects dispatched by Sichuan provincial grid is 0.28 RMB/kWh incl. VAT. When the annual operation hours exceed 3,700h, the tariff after 3,700h is 0.19 RMB/kWh incl. VAT.
- 2005: Faigaijiage[2005]667 issued by NDRC, the guiding tariff for hydro projects dispatched by Sichuan provincial grid increased to 0.288 RMB/kWh incl. VAT.

¹³ Calculated as $(293.8 \times 8 + 226 \times 22) / 30$, the expected lifetime of the project being 30 years.

Date 11th July 2010
Page 9/14
Subject **Chinese Tariffs for Hydropower Projects**

- 2006: Chuanjiafa[2006]145 issued by Sichuan Provincial Price Bureau, the guiding tariff for hydro projects dispatched by Sichuan provincial grid is 0.288 RMB/kWh incl. VAT.
- 2009: Chuanjiadianfa[2009]59 issued by Sichuan Provincial Price Bureau, the guiding tariff for hydro projects dispatched by Sichuan provincial grid is 0.288 RMB/kWh incl. VAT.

These regulations apply to hydro projects directly dispatched by Sichuan Provincial Grid, without any distinction of project type or installed capacity.

Projects dispatched by local grids

As explained in ChuanJiaHan[2004]136 issued by Sichuan Provincial Price Bureau, the local price bureaus are authorised to manage the tariff for power plants dispatched by the local power grid. As such, tariffs approved by local price bureaus for hydro projects dispatched by different local grids vary considerably, depending on local conditions.

Examples of tariff regulations published at the local level:

- 2006: Ebianjiafa[2006]15 issued by **Ebian County Price Bureau**, the guiding base tariff for hydro projects dispatched by Ebian County Grid is 0.148 RMB/kWh excl. VAT.
- 2004: Jinjiazhi[2004]21 issued by **Jinhekou District Price Bureau**, the guiding base tariff for hydro projects dispatched by Jinhekou District Grid is 0.18 RMB/kWh incl. VAT.
- 2003: GongFuFa[2003]78 issued by **Gong County Government**, the guiding tariff for hydro projects dispatched by Gong County Grid is 0.226 RMB/kWh incl. VAT, which can be increased to 0.2938 RMB/kWh incl. VAT for the first eight years of operation for small hydro projects.
- 2009: Pingjiafa[2009]10 issued by **Pingwu County Price Bureau**, the guiding tariff dispatched by Pingwu County Grid is 0.22 RMB/kWh incl. VAT for small hydro projects.
- 2007: Ganjiafa[2007]130 jointly issued by **Ganzi Prefecture Price Bureau** and Water Resource Bureau, the guiding tariff is 0.16 RMB/kWh incl. VAT for **Kangding, Luding, Hailuogou, danba, Jiulong, yajiang, Litang, Daofu, Luhuo, and Ganzi Counties**, and 0.17 RMB/kWh incl. VAT for **Batang, Xiangcheng, Daocheng, Delong, Seda, Xinglong, Baiyu, Daoge, and Shiqu Counties**.

It is clear that even within Sichuan Province, tariffs can be different for different areas, because the social/economic situation is different in these areas. Just like under the coverage of the Central China Power Grid (CCPG), the provincial dispatched tariffs of different provinces are also different.

Conclusion:

Based on the information above, we can see that

- a) Values higher than 0.288 RMB/kWh (incl. VAT) are either not being implemented or have been granted with special reasons that are not applicable to other projects.
- b) Only the centrally-dispatched projects (i.e. directly dispatched by provincial grid) receive a bus-bar tariff of 0.288 RMB/kWh (incl. VAT). The actual tariff obtained by the projects is usually lower than this tariff since there are weights of different seasons or dispatch period.
- c) Different local grids usually apply different guiding tariffs to comply with the local economic development level. Tariffs for hydro projects dispatched by local grids are generally lower than the centrally-dispatched tariff.

We propose that

- ***The highest tariff should only be applied to centrally dispatched projects and should be 0.288 RMB/kWh (incl. VAT) rather than 0.29.***
- ***Projects that are locally dispatched should be assessed on a case by case basis.***

Date 11th July 2010
Page 10/14
Subject **Chinese Tariffs for Hydropower Projects**

**Annex 4
Hydro Power Tariff
Yunnan Province**

Tariffs listed by Secretariat:

Scale	Type	Highest tariff (incl VAT)	Highest tariff (excl VAT)	Installed capacity [MW]	Project #
SSC	RoR	0.215	0.203	20	2015
	Reservoir	0.215	0.184	8.2	1779
Large	RoR	0.215	0.184	120	2869
	Reservoir	0.215	0.184	150	2133

Tariffs we wish to be re-considered:

Different tariffs are applied in Yunnan Province, based on capacity and dispatch level of the projects. Applied tariffs are not consistent with the information provided above and we ask the secretariat to consider the information provided below while reassessing the published tariffs for Yunnan Province.

Regulations applicable to hydro projects in Yunnan Province:

Publication Date	Regulations	Indicated Tariff (RMB/kWh) (incl. VAT)	Dispatch Level
17/07/2003	<i>Dehong Prefecture DRC Notice No. 2003-367 for small hydropower projects</i>	0.171 (average)	Local dispatch
2004	NDRC Notice No. 2004-1037	0.215	Not specified
2004	<i>Nujiang Prefecture Notice No. 2004- 444¹⁴</i>	0.18 (average)	Local dispatch
30/07/2004	Yunnan DRC Notice No. 2004-589	0.215	Not specified
30/08/2005	<i>Yunnan DRC Notice No. 2005-792¹⁵</i>	0.18 (average) for <50MW	Local dispatch
06/01/2006	Yunnan DRC Notice No. 2006-28 ¹⁶	0.215 for >50 MW 0.215 (average) for <50MW	Provincial dispatch

¹⁴The Nujiang Lisu Autonomous Prefecture official grid tariff document regulates the grid tariff of hydropower stations (located in Nujiang Lisu Autonomous Prefecture) that deliver electricity to the Nujiang Lisu Autonomous Prefecture Grid,

¹⁵Notice regarding to the indirect dispatched tariff to the Power Grid of Yunnan Province (No. 2005-792), issued by the DRC of Yunnan Province on 30/08/2005. The tariff for small and medium scale hydropower projects which are not directly dispatched by the provincial grid is RMB 0.13, 0.18 and 0.23/kWh in different seasons of the year. The average tariff is calculated as: RMB 0.18/kWh = (0.13/kWh x 5 months in Dec and Jan-Apr + 0.18/kWh x 2 months in May and Nov + 0.23/kWh x 5 months in Jun-Oct)/12 months

¹⁶Notice regarding the grid tariff from new hydropower projects (No. 2006-28), issued by the DRC of Yunnan Province on 9/01/2006. This Notice provides further adjustments of tariffs, based on the NDRC Notice No. 2004-1037, for new hydropower projects (1) with installed capacity less than 50MW the adjusted tariff is RMB 0.215, 0.19 and 0.24/kWh in different seasons of the year. The average tariff is calculated as: RMB 0.215/kWh = (0.24/kWh x 5 months in Dec and Jan-Apr + 0.215/kWh x 2 months in May and Nov + 0.19/kWh x 5 months (Jun-Oct)/12 months; or (2) with installed capacity larger than 50 MW applies RMB 0.215/kWh.

Date 11th July 2010
Page 11/14
Subject **Chinese Tariffs for Hydropower Projects**

Publication Date	Regulations	Indicated Tariff (RMB/kWh) (incl. VAT)	Dispatch Level
28/06/2006	NDRC Notice No. 2006-1229 ¹⁷	Re-confirmed Season Tariffs for < 50MW	Provincial dispatch
12/07/2006	Yunnan DRC Notice No. 2006-779	Re-confirmed Yunnan DRC Notice No. 2006-28: 0.215 (average) for < 50MW	Local dispatch
19/06/2007	Yunnan DRC Notice No. 2007-748 ¹⁸	0.162 (average)	Local dispatch
29/06/2008	NDRC Notice No. 2008-1682 ¹⁹	0.14 - 0.181 (for listed existing projects in Yunnan)	Not specified
2008	Baoshan Prefecture DRC Notice No. 2008-61	0.19 (average) for existing before 1/01/2001 0.205 (average) for new ≤ 30MW, nonadjustable after 1/01/2006 0.215 (average) for new ≤ 30MW, adjustable, after 01/01/2006 0.215 for new, > 30MW, after 01/01/2006)	Local dispatch
19/05/2009	Chuxiong Prefecture DRC Notice No. 2009-28 ²⁰	0.18	Local dispatch

The evolution of the regulations regarding the tariff for hydro projects in Yunnan shows:

Projects centrally dispatched by Yunnan Provincial Grid

- 2004: NDRC Notice No. 2004-1037 stipulates the tariff for new hydropower projects in Yunnan province is 0.215 RMB/kWh (incl. VAT).
- 2005-2006: The concept of seasonal tariffs for projects in Yunnan with less than 50 MW was introduced by the Yunnan DRC Notice No. 2005-792 in August 2005 and the Yunnan DRC Notice No. 2006-28 in January 2006, and formally agreed by the NDRC Notice No. 2006-1229 in June 2006.

Projects dispatched by local grids

- 2005-2006: Yunnan DRC notices also distinguish the tariffs for projects (≤ 50 MW) dispatched at provincial and local level, i.e. No. 2005-792 in August 2005 and No. 2006-28 in January 2006.
- 2003-2009: Local authorities have been implementing a tariff of 0.18 RMB/kWh (incl. VAT) for projects with less than 50 MW that are locally dispatched since 2003. For example:
 1. 2003: Dehong DRC Notice No. 2003-367, regulated the tariff for hydropower projects in DeHong Autonomous Region;
 2. 2004: Nuijiang Prefecture Notice No. 2004-444, regulated the tariff for hydropower projects;
 3. 2007: Yunnan DRC Notice No. 2007-748, regulated the tariff for Diqing Tibetan Autonomous Prefecture;
 4. 2008: Baoshan DRC Notice No. 2008-61, regulated the tariff for small hydropower projects in Baoshan City;
 5. 2009: Chuxiong DRC Notice No. 2009-28, regulated the tariff for hydropower projects in ChuXiong County.
- 2008: NDRC Notice No. 2008-1682 specified tariffs for a number of projects specifically. These projects received different tariffs based on their specific situations.

¹⁷ Notice regarding to regulating the tariff to SCPG (No. 2006-1229), issued by NDRC on 28/06/2006. This Notice confirms Yunnan DRC's Notice of implementing adjusted tariffs for new hydropower projects with installed capacity less than 50 MW in different seasons of the year.

¹⁸ Notice regarding small hydropower grid tariff (No. 2007-748), issued by Yunnan DRC on 19/06/2007. This Notice stipulates the tariff of hydropower projects in Diqing District to be as RMB 0.162/kWh in average. This Notice also introduces the seasonal tariffs of RMB 0.143/kWh in flow season (May-October) and RMB 0.19/kWh in dry season (November- April).

¹⁹ Notice regarding increasing tariff to SCPG (No. 2008-1682), issued by NDRC on 29/06/2008. This Notice instructs tariff adjustments to power plants under SCPG. However, tariff for hydropower projects (except some projects listed in the document) is not changed in Yunnan province. Tariff is from 0.14 - 0.181 RMB/KWh for the listed hydropower plants (with installed capacity between 3.2 to 60 MW) in Yunnan Province.

²⁰ Notice regarding to the small hydropower grid-tariff (No. 2009-28), issued by DRC of Chuxiong Prefecture on 19/05/2009. This Notice reconfirms that the small and medium scale hydropower projects in Chuxiong District are not directly dispatched by SCPG. Thus the tariff regulated by Yunnan DRC Notice No. 2005-792 shall be applied.

Date 11th July 2010
Page 12/14
Subject **Chinese Tariffs for Hydropower Projects**

Conclusion:

Based on the information above, we can see that:

- a) Tariff of 0.215 is applied for projects with installed capacity larger than 50 MW and provincially-dispatched.
- b) For projects with less than 50 MW and provincially dispatched, tariff of 0.215 is the average tariff - calculated based on 3 different seasonal tariffs (0.215, 0.19 and 0.24/kWh) in dry, mean, and flow seasons with the same weights of hydro flow around the year.
- c) For projects with less than 50 MW and locally-dispatched, an average tariff of 0.18 could be applied - calculated based on 3 different seasonal tariffs (0.13, 0.18 and 0.23/kWh) in dry, mean, and flow seasons with the same weights of hydro flow around the year.
- d) The projects with tariffs lower than 0.215 are either locally dispatched or the tariff has been derived from 0.215 with weights of hydro flow and different season tariffs.

Therefore, we propose that

- **Highest tariff of 0.215 should only be applied to projects larger than 50 MW and provincially dispatched projects.**
- **0.215 could be deemed as an indicative highest tariff (average on yearly base) for projects with less than 50 MW that are provincially dispatched. This average tariff could be changed due to the different hydro flow conditions in different seasons of each project.**
- **Projects that are locally dispatched should be assessed on a case by case basis based on the applicable regulations. In case there is no specific locally-dispatched tariff available, the indicative tariff of 0.18 set by Yunnan DRC can be applied.**

Date 11th July 2010
Page 13/14
Subject **Chinese Tariffs for Hydropower Projects**

**Annex 5
Hydro Power Tariff
Gansu Province**

Tariffs listed by Secretariat:

Scale	Type	Highest tariff (incl. VAT)	Highest tariff (excl. VAT)	Installed capacity [MW]	Project #	Case
SSC	RoR	0.227	0.194	28	1886	
	Reservoir	0.227	0.194	12	2460	
Large	RoR	0.29	0.248	98	378	A
	Reservoir	0.227	0.194	112	1264	

Tariffs we wish to be re-considered:

Case A:

Scale	Type	Highest tariff (incl. VAT)	Highest tariff (excl. VAT)	Installed capacity [MW]	Project #
Large	RoR	0.29	0.248	98	378

Reason(s) for reconsideration:

- The tariff has not been/will not be implemented.

The actual approved tariff for Project 0378 is 0.227 RMB/kWh (incl. VAT) but not 0.29 RMB/kWh (incl. VAT) according to the "Power Purchase Settlement Notice by Gansu Grid" and the "Notice on the On-grid Tariff of Power Plants in Inter Gansu Provincial and Related Issues in 2005 Ganjiashang [2005]195" from Gansu Price Bureau on 22/08/2005.

The tariff of 0.29 RMB/kWh (incl. VAT) used in the PDD is a desired tariff that was derived based on costs and reasonable profit expectation. This approach was widely adopted in projects' feasibility study reports for project approvals prior to (or during the early stage of) the Electricity Reform.

According to the PDD, p. 24: "In the off-taking agreement signed on June 16th, 2003, Gansu Power Grid Company Zhangye Branch, as the off-taker, promises to purchase the electricity generated by XHP at a price of 0.29 CNY [RMB]/kWh. However, the reality is that the grid company did not have the authority to define the tariff. As introduced above, the tariff defined in the PPA will most likely be overruled by the latest tariff set by the Price bureau." Document Fagai Price [2004] No.1125 below was already in place, defining a fixed tariff of 0.227 RMB/kWh.

On p. 25: "The applicable tariff for XHP is scheduled to be finalised by the price bureau ahead of its proposed partial commissioning at the beginning of 2006. "Although project 0378 used 0.29 RMB/kWh in the IRR calculation, the tariff was known to have been over-estimated. The project participant identified "uncertain tariff combined with weak enforcement of the PPA" as one of the barriers in the PDD.

Evidence:

- Power Purchase Settlement Notice by Gansu Grid and Notice on the On-grid Tariff of Power Plants in Inter Gansu Provincial and Related Issues in 2005 Ganjiashang [2005]195" (<http://cdm.unfccc.int/UserManagement/FileStorage/S3X1D51YHINDFTEEQ8L4CUV7OH3CFU>)

Date 11th July 2010
Page 14/14
Subject **Chinese Tariffs for Hydropower Projects**

Regulations applicable to hydro projects in Gansu Province:

- 2004: Fagai Price [2004]1125 (Notice on easing on-grid tariff contradictions in the Northwest China Power Grid), 18/06/2004. It stipulated that “the tariff for hydropower plants commissioned before 01/01/2005 without approved tariff and new hydropower plants commissioned after 01/01/2005 in Gansu province is set to 0.227RMB/kWh (incl. VAT), regardless the project scale”.
- 2006: Ganjiashang[2006]125,(Notice on on-grid tariff for new commissioned hydropower plants in Gansu Province) issued by Gansu Price Control Bureau on 11/07/2006. It stipulated that “the tariff for new commissioned hydropower plants (regardless of scale) is 0.227 RMB/kWh (incl. VAT).”

Conclusion:

Based on the information above, we can see that

- a) The tariff for hydropower plants in Gansu Province has been stable at 0.227 RMB/kWh (incl. VAT) since 2004 when the policies first became available.
- b) Values higher than 0.227 RMB/kWh (incl. VAT) are either not being implemented or have been granted with special reasons that are not applicable to other projects.
- c) Based on published regulations in Gansu, there are no differences on tariffs for RoR and Reservoir type projects.

Therefore, we propose that

- **The highest tariff for hydropower projects in Gansu should be 0.227 RMB/kWh (incl. VAT) or 0.194 RMB/kWh (excl. VAT).**

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