SIA Commentary 25 August 2016

# China's Gas Pipeline Tariff Reform

**After nearly four years of making, on August 16th, the National Development and Reform Commission (NDRC) released two draft documents on gas pipeline transmission tariff-setting and related cost ascertainment rules, in an effort to standardize and enhance tariff regulation across pipeline systems. The final rules are subject to public and industry comments, and possible minor revisions will be made after the public consultation period ending on September 5th.**

**What are the differences between existing practice and the proposed rules? What are their implications for the industry? Will the new rules effectively reduce pipeline tariffs? What highly-anticipated elements are missing from the draft? In this commentary, we will answer these questions based on our independent assessment as well as in person dialogue with the NDRC officials in charge.**

## Key Observations

- In contrast to the existing practice in which the NDRC sets transmission tariff on a pipeline-by-pipeline basis without clarifying the calculation methodology and key parameters, the proposed policy establishes a clear pricing mechanism and detailed rate-making rules.

- The biggest driver for lower tariff will be a longer (30 years) recovery period allowed for the purpose of depreciation as depreciation expenses account for roughly 50% of the total transmission costs.

- The seemingly lower regulatory return rate of 8% will not necessarily deter investment because a much higher ROE can be achieved with offsetting factors such as relaxed regulation on the investor's financial leverage and a lower interest-rate environment.

- A uniform, detailed and transparent tariff-setting mechanism will pave the way for third party access (TPA) implementation.

- However, the exemption of provincial grid companies from the rules could be detrimental to regulator's efforts to break down monopoly and push forward a market-oriented reform.

Currently the NDRC sets gas pipeline tariff on a pipeline-by-pipeline basis, calculated based on certain baseline internal rate of return (IRR) scenario to ensure the feasibility of the pipeline project, which is presumably derived from the methodology and parameters established in the *Guidance on the Economic Appraisal of Investment Project (《关于建设项目经济评价工作的若干规定》)* issued by the NDRC and the Ministry of Housing and Urban-Rural Development (MOHURD) a decade ago.

However, lacking detailed, uniform and binding mechanism specific to pipeline transmission, the pricing method and key parameters vary considerably by pipeline and hence the vastly different tariff and profitability for each pipeline. For example, the West-East Pipeline I (WEP-1) applies a 12% IRR in determining tariff which makes it relatively more lucrative, while the Shaanxi-Beijing Pipeline and Sichuan-East Pipeline apply lower IRR of 10% and 8% respectively.

The proposed tariff-setting policy adopts a "cost-of-service plus reasonable return" principle and the following formula to compute the unit tariff for inter-provincial transmission lines:

$$Unit\ Tariff\ = \frac{Total\ Annual\ Allowed\ Revenue}{Total\ Annual\ Throughput\ Volume}$$

*Total Annual Allowed Revenue = Allowed Costs + 8% Return on Regulated Assets + Taxes*

*Total Annual Throughput Volume = Sum of throughput volume by all pipelines of the company*

*Single Pipeline Throughput Volume = Actual Transportation Volume × Average Transportation Distance*

The differences between existing practice and the draft rules are as follows:

| | Existing Practice | Proposed Rules | Reform Assessment |
|---|---|---|---|
| **Entity Subject to pricing regulation** | Individual pipeline | Pipeline company | This change could offer better solution for cost allocation of shared facilities, encourage comprehensive pipeline network planning at the company level and stimulate intra-company cost competition, thus lowering tariff |
| **Pricing method** | Calculated according to given IRR target so as to ensure certain profitability level of project; calculation is based on projected numbers rather than actual costs; once set, the fixed tariff offers no incentive for cost cutting | "Cost-of-service plus reasonable return" method: unit tariff for each pipeline company is set using allowed costs and regulated rate of return (8%), and is fixed within the three-year control period and subject to review every three years | Compared with lower return rates in developed countries, 8% is considered appropriate as China's gas infrastructure is still in the development period which calls for more investment. The three-year control period could encourage cost savings within the timeframe as the saved costs would go straight to the company's bottom line |

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|---|---|---|---|
| **Ascertainment of cost** | No specific standards regarding cost and expenditure ascertainment | Clarifies what costs can be recovered with tariffs and what cannot | More granular and pipeline-specific cost ascertainment standards can better reflect industry characteristics, also allows for company costs benchmarking |
| **Publishing of tariff** | One pipeline one tariff, set and published by the NDRC | Unit tariff is calculated applying the above formula, and subject to NDRC review and approval. Companies then calculate specific rates for certain section of the pipeline and publish their own rate schedule | Clear and standardized computation and rate-making rules will facilitate third party access and improve operation efficiency |
| **Compliance supervision** | By the pricing supervision divisions of NDRC | Public oversight as well as government supervision | Increase pricing transparency and enable public oversight |

## Implications for the industry

- Will the proposed rules drive down pipeline tariffs?

  Overall, yes. Compared with current practice, we identify the key driving factors as below:

| | CNPC Current Practice | Sinopec Current Practice | Proposed Rules | Resultant Change in Tariff (up ↑, down ↓, neutral -) |
|---|---|---|---|---|
| **Regulatory asset base** | Pipeline assets as set out in the Feasibility Study Report | | assets ascertained & approved by the NDRC, excl. assets resulting from gov't investment, subsidy, as well as gas storage, LNG receiving terminals, and non-transmission related assets | - (Rational: inclusion & allocation of inter-connectors and shared facilities adds to total fixed assets while exclusion of storages and other assets could offset the effect) |
| **Depreciation recovery period** | Prior to 2013: 14 years<br>After 2013: 30 years | 20 years | 30 years | ↓ (Rational: depreciation expense will decrease due to longer recovery period) |
| **Rate of return** | 8-12%, varies by pipeline | ~8%, varies by pipeline | 8% (@ threshold utilization of 75%) | ↓ |

| | | | | |
|---|---|---|---|---|
| **Opex** | Some items are set as the product of headcount and a fixed amount per capita, some others are calculated as certain percentage of sales revenue | | Actual costs & expenses incurred in the year preceding the upcoming regulatory period with the exception of new pipeline, taking into account three-year movement & adjusted for irregular changes | - (Rational: the expected stringent cost investigation & ascertainment process could bring down the actual costs, but addition of shared costs could offset the effect. Overall the costs will be more reflective of reality instead of projections.) |
| **Transmi-ssion loss** | 0.1-0.8% | N/A | 0.2% | ↓ |

In conclusion, the biggest driver for lower tariff will be a longer (30 years) recovery period allowed for the purpose of depreciation as depreciation expenses accounts for over 50% of the total transmission costs.

- Will a lower rate of return of 8% deter pipeline investment?

  The seemingly lower return rate will not necessarily deter investment because:

  - Globally speaking, the 8% return on (regulated) asset (ROA) after tax is equal to a 10.7% ROA before tax, which is far higher than those in developed countries such as Britain (6.7%) and France (5%);

  - More importantly, as the government has lowered requirement on equity share of investment project from 40% to 20%, the investors are now able to increase their financial leverage to earn a higher return on equity (ROE). The current low interest rate also helps drive down borrowing costs of the pipeline investors. In the table below, we demonstrate an attractive ROE can be achieved under the proposed rules with offsetting factors in play:

| | ROA | Equity Share | Lending Rate* | ROE |
|---|---|---|---|---|
| **Under proposed rules** | 8% | 20-30%** | 2.93% | 20-28% |
| **2014** | 8-12% | 25% | 5.54% | 15-31% |
| **2008** | 12% | 40% | 6.7% | 20% |

* At 10% discount to the People's Bank of China's applicable benchmark lending rate

** SIA assumption, as actual equity share varies by pipeline company

All things considered, the 8% ROA is believed to be attractive enough to a wide range of investors, including not only the industry players but also financial investors such as social security fund and insurance companies seeking low-risk and stable returns, who have been the main buyers in recent mixed-ownership initiatives of CNPC and will likely remain interested in Sinopec's Sichuan-East Pipeline share offering and future participation opportunities in gas infrastructure investment.

- A uniform, detailed and transparent tariff-setting mechanism is the necessary condition for third party access (TPA) implementation.

  Although the TPA policy was launched as early as 2014, in reality no substantial progress has been made, with implementation limited to a few LNG receiving terminals on ad hoc basis (CNPC's Rudong, Dalian and Caofeidian terminal) and the no-show of the promised detail rules by the National Energy Administration.

  Aside from major challenges such as the NOCs' resistance, the lack of a well-designed tariff-setting mechanism is also recognized as a technical deficiency contributing to the stalled TPA development. The proposed rules could pave the way for TPA implementation:

  - The uniform and clear-defined tariff-setting rules with entry/exit provisions will help facilitate TPA practice. For example, previously the independent foreign CBM operators in Qinshui Basin were unable to market their entitlement gas directly to end-users via NOC's pipelines under TPA arrangement, instead they had to wholesale the gas to NOC pipeline companies with little price negotiating power, as the NOC rejected their TPA request claiming the tariff-setting for specific entry and exit points on an inter-provincial transmission line requires NDRC approval and will be too complex and cumbersome—such an excuse would no longer exist under the new tariff regime;

  - The rate-making mechanism could compel under-utilized pipelines to offer more transmission service to third parties so as to boost their utilization rate. This is because under the proposed rules, the annual throughput volume used to calculate unit tariff for companies with low utilization rate is not their actual transportation volume but rather the pro forma volume calculated using 75% utilization rate. Thus these companies would be subject to a lower unit tariff than what they would have obtained based on actual transportation volume.

## What is missing from the proposed rules?

- Though widely viewed as a well-designed tariff structure that optimizes pipeline utilization efficiency, the two-part tariff structure comprising "capacity charges" and "commodity charges" is not adopted in the draft rules. The NDRC officials cited negative feedbacks received from both the pipeline company and service users after the Zhongxian-Wuhan Pipeline (忠武线) first experimented with this structure in 2004 for such decision.
- Also absent is the caloric value-based measurement and pricing. Although no official timetable is provided yet for the switch (from the current volumetric unit), given the fact there is wide industry consent and no material obstacle in implementing such a switch recognized by the NDRC officials, and the associated costs would be negligible, we expect the caloric value-based city gate pricing and tariffs will be the next reform step.

- Intra-provincial transmission lines are exempted from the proposed rules, which means the provincial grid companies do not have to follow the same tariff-setting rules and be subject to stringent supervision as NOCs do. Such a waiver could be the result of (1) a practical choice out of concern for the limited regulatory resources (staff, funding, etc) that the NDRC possesses, and (2) a compromise made by the central government authority as it has little leverage against the increasingly powerful and

assertive provincial grid companies which prefer provincial jurisdiction. However, such a policy choice could be detrimental to the regulator's efforts to break down monopoly and push forward the market-oriented reform.

As the final version is still subject to potential minor adjustments after public consultation period, we will keep a close eye on the policy trajectory and provide timely analysis.