

Tariff Regime for Regulated Natural Gas Sector in Pakistan



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1. Tariff Regime For Regulated Natural Gas Sector

1.1 Legal Scope

- 1.1.1 Section 6(2) (t) of the OGRA Ordinance 2002 (the Ordinance) provides that the Authority in consultation with the Federal Government and licensees for natural gas shall determine for each such licensee a reasonable rate which may be earned by such licensees in the undertaking of its regulated activity pertaining to natural gas keeping in view all the circumstances. Section 6(2)(s) empowers that the Authority shall prescribe, review, approve and regulate tariffs for regulated activities pertaining to natural gas and operation of the licensees for natural gas.
- 1.1.2 Section 7 of the Ordinance stipulates that, subject to policy guideline, the Authority shall determine or approve tariff for regulated activities whose licenses provide for such determination or such approval or where authorized by this Ordinance. Section 21 of the Ordinance empowers the Federal Government to issue policy guidelines to the Authority on matters of policy, not inconsistent with the provisions of the Ordinance or the Rules.
- 1.1.3 The above said legal framework provides a complete sequence to deal the tariff of the licensee for the regulated activity of transmission, distribution and sale of natural gas. In furtherance of the same, Section 8 of the Ordinance empowers Authority to determine the total revenue requirement, inter-alia the prescribed prices, of each licensee for natural gas engaged in transmission, distribution and the sale of natural gas to a retail consumer for natural gas. Natural Gas Tariff Rules 2002 in this regard prescribes the evaluation criteria in respect of petitions for revenue requirement.

1.2 General Principle

(i) Tariff Type

- 1.2.1 OGRA shall determine an integrated or separate tariff for regulated activity/activities, in accordance with the respective licenses/petitions.

(ii) Tariff Model

- 1.2.2 Tariff model shall be Return on assets base. The Return shall be market based computed on the basis of Weighted Average Cost of Capital (WACC).

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(iii) Tariff Design and Methodology for Revenue Requirement

1.2.3 The tariff regime shall be based on Cost Transfer Pricing Mechanism wherein aggregate of prudent expenses incurred in connection with the regulated activity/activities shall form the revenue requirement in respect of licensee. The Revenue Requirement in respect of relevant regulated activity/activities under the integrated/bundled or unbundled structure may inter-alia comprise out of the following:

- Cost of gas
- Operating expenses (OPEX)
- Return on Regulated Assets Base (RAB)
- Federal Government /Provincial Government taxes, levies etc.; if any.
- Transportation charges (Transmission and/or Distribution)

1.2.4 The other operating revenues shall reduce overall Revenue Requirement of the licensee.

1.2.5 The Revenue Requirement shall be represented in (Million Rs.) translated into prescribed price /tariff in terms of Rs./MMBtu.

1.2.6 **Transportation tariff for Transmission activity** in respect of licensee, shall be an aggregate of operating expenses plus return and shall be passed onto the shipper (*any licensee in Distribution (D) and/or Transmission & Distribution (T&D) companies or any other private party/parties under Third Party Access Regime-TPA*). Such tariff shall be determined at a postal stamp uniform rate, on annual basis in accordance with TPA Rules and network code.

- *For the purpose of clarity, the transmission activity means the transportation of gas by licensee in its area of operation for Tier 1 (Natural gas consumers) & Tier 2 (RLNG consumers).*
- *Natural gas means indigenous gas plus import gas.*

1.2.7 **Transportation Tariff for Distribution activity:** In respect of licensee, the transportation tariff for gas distribution activity at existing T&D network, dedicated distribution network or any segment thereof, shall be an aggregate of operating expenses plus return and shall be charged to its retail consumers and/or any other private party/parties under TPA. Such tariff shall be determined at a postal stamp uniform rate, on annual basis in accordance with TPA Rules and network code.

1.2.8 The Authority shall determine the transportation tariff keeping in view the business dynamics, network structure and development in respect of third party access

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regime. Accordingly, the Authority shall set the transportation tariff in the manner and as per mechanism stipulated in TPA Rules and network code which shall be coherent with the prevalent circumstances and shall strike a balance among divergent interests of various stakeholders and provide level playing field to all stakeholders.

1.2.9 Notwithstanding the above, currently Transportation tariff (at Transmission and/or Distribution network) in respect of Tier 2 consumers of the licensees or under Third Party Access Regime, is based on the incremental cost, in accordance with the decision of the Federal Government. The same shall continue till the pricing parameters are reviewed by the Federal Government in the light of Third Party Access Arrangements.

(iv) Rate Of Return

1.2.10 The licensed companies shall receive market based rate of return i.e; WACC model, on the value of their net regulated fixed assets in operation i.e; Regulatory Assets Base (RAB). Besides Fixed Assets in operation, RAB shall include advance for land and intangible assets (IT related assets).

1.2.11 WACC shall be pre-tax, computed as per following formula;

$$\text{WACC Pre-Tax} = K_e / (1-t) * 30\% + K_d * 70\%$$

Where;

$$\text{Cost of Equity (K}_e\text{)} = \text{Risk free rate (R}_f\text{)} + \text{Beta} * \text{Market Risk Premium (MRP)}$$

- i. **Risk free rate (Rf)** shall be based on the last 10 years average monthly 20 years PIB bond yield as available from the source <https://www.investing.com/rates-bonds/pakistan-20-year-bond-yield-historical-data>.
- ii. **Market Return (MR)**, shall be based on last 15 years PSX/KSE- 100 index average return.
- iii. **Market Risk Premium (MRP)** shall be difference of MR and Rf. MRP for the calculation of Ke shall be capped at 11% with floor at 7%.
- iv. **Beta** shall be taken at 1.06 for Transmission and 1.30 for Distribution. In respect of integrated T&D structure, beta for distribution shall apply.
- v. **Cost of debt** is based on 6 monthly averages of last twelve months Kibor + spread at 2%.

1.2.12 Debt equity shall be assumed at the optimal structure of 70:30.

1.2.13 **WACC re-set:** The WACC shall be fixed for the next 3 years. During this period, if the WACC changes by $\pm 2\%$ than the reference figure (the first WACC under this

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regime in revenue requirement), it will be automatically re-set and become effective in OGRA's next determination of revenue requirement.

(v) Corporate Tax, Finance cost & Dividends.

1.2.14 It shall be borne by licensee. The same shall not be treated as Pass through Item.

(vi) Yardstick Regulation/Efficiency benchmarks

1.2.15 The Authority shall formulate and implement yardstick regulation in terms of efficiency related benchmarks.

(vii) Amortization of Assets Built through Government grants /Aid etc;

1.2.16 The Assets built through Government grants/Aid and consumer contributions etc; shall be amortized over the prescribed period thereby decreasing the overall revenue requirement of the licensee. Further, such assets shall not be entitled for return.

1.2.17 The Assets built through Government grants /aid and consumer contributions shall be disclosed separately.

(viii) Fixed Assets in Operation

1.2.18 The regulated fixed assets in operation shall be calculated as one half of the sum of the value of fixed assets in operation at the beginning and at the end of the fiscal year, less the amount of accumulated depreciation.

1.2.19 The value of assets for rate base purposes shall be historical cost of the assets. In case of unbundling of SNGPL/SSGCL, the assets of the new entities, for rate base purposes, shall be stated at the actual cost of acquisition (the settlement amount between the parties).

1.2.20 The fixed assets shall also include "Advances for fixed assets and the IT assets" which are subject to depletion.

1.2.21 Assets on Build Own and Operate and Transfer (BOOT) basis in respect of licensee shall also be included in the RAB in respect of regulated activity. Accordingly, it shall be entitled to earn return till its declared useful life.



1.2.22 Only prudent, cost effective and economically efficient capital expenditures shall be included in the asset base for the purpose of rate of return, in line with legal framework.

(ix) Depreciation

1.2.23 Depreciation shall be calculated on straight line method at the historical cost of the assets at uniform rate, as per decision of the Authority from time to time. For the time being, depreciation rates in respect of SNGPL, currently in place, shall be adopted by all licensees since these are more rational with respect to assigned life of the fixed assets.

1.2.24 Depreciation shall be charged effective from the date the asset is commissioned/disposed off.

1.3 Methodology for determination of Transportation tariff for Transmission network/activity and/or Distribution Network/activity

1.3.1 The Transportation Tariff shall be determined in accordance with TPA Rules and network code. Generally, the cost components provided below shall form the revenue requirement to charge Transportation tariff from the shipper by the transporter of Transmission network/segment and /or Distribution network/segment.

The components shall comprise as under;

- (i) Fixed cost (Depreciation, return etc;)
- (ii) Variable Cost (Gas Internally Consumed in compression (if applicable), stores spares, repair & maintenance etc;)
- (iii) Any other cost relevant to this activity.
- (iv) UFG losses shall be charged on volumetric basis.

1.3.2 The Transportation tariff shall be determined on annual basis, which shall be gradually phased out to multi year's tariff.

1.4 Methodology for Determination of Revenue Requirement/Prescribed prices under the integrated/disintegrated structure

1.4.1 The aggregate of the different cost components determined by the Authority relevant to regulated activity/activities shall form revenue requirement for a financial year. The treatment of such components in the revenue requirement shall be made as under;

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(i) Cost of Gas

- 1.4.2 The cost of gas from indigenous sources shall be determined as per the respective wellhead gas price notifications in accordance with the gas price agreements executed between the Federal Government and the gas producers.
- 1.4.3 The cost of gas for the public utility/utilities shall be based on the "weighted average cost" of indigenous gas and shall be accordingly charged at uniform rate.

(ii) Other Operating Revenues

- 1.4.4 All revenues directly generated in carrying out the licensed regulated activities, other than sale of natural gas, shall be treated as operating income.
- 1.4.5 All indirectly generated revenues/ income from an activity shall be shared between licensee and consumer as per Authority decision. The connection of an income as directly or indirectly inter-alia as operating /non-operating, as a matter of principle, shall be judged by the Authority based on following parameters.
- (i) Degree of Relevancy with the regulated activity.
 - (ii) Degree of Risk/required incentive to company
 - (iii) Management efforts in the operation of the activity.
 - (iv) Overall tariff structure.
- 1.4.6 Any other income shall be treated as per decision of the Authority.

(iii) Transportation charges on transmission and/or Distribution activity

- 1.4.7 The transportation charges on account of transmission/distribution of gas paid/received under TPA regime shall be included in the revenue requirement.

(iv) Operating Expenses

- 1.4.8 All prudently incurred expenses in the operation of the licensed regulated activities, excluding financial charges on loans & debt servicing charges, taxes and dividend, shall be treated as operating expenses. Mainly, all such expenditures that are incurred for carrying out regulated activities shall form part of operating expenditures.
- 1.4.9 The regulated resources including the management, good will and assets utilized in undertaking the non-regulated activities of the licensees shall compensate the regulated cost on the basis of fair allocation method.
- 1.4.10 Any other expense substantiated on specific reasons including Late Payment Surcharge paid to gas suppliers shall also be treated as operating expense.



(v) Non-Core Activities

1.4.11 All the activities undertaken by the licensee separately through subsidiary company/SPV, shall be treated as non-core activities. The degree of relevance of such activities with the regulated activities shall be assessed on case to case basis and accordingly shall be deliberated in the respective determination of revenue requirement. Accordingly, sharing/compensation of expenses through a fair allocation method in terms of operating / non-operating income, shall be decided by the Authority.

(vi) Expenses on Account of Corporate Social Responsibility (CSR)

1.4.12 Expenses incurred in connection with CSR activities shall be encouraged. For the purpose of inclusion of the same in the revenue requirement, it shall be considered, on case to case basis, as per following criteria;

- (i) It shall be incurred on account of ;
 - (a) health and environment in the underdeveloped/gas producing districts, in the area of operation of the licensee.
 - (b) education and sports activities.
- (ii) The expenses incurred per criteria (i) above, shall be equally contributed by licensee from its own profit.

(vii) Prior Years Adjustment/Accruals/Contingency Reserves/Deferral Account

1.4.13 Prior year's adjustment including un-adjusted shortfall in the total revenue requirement, pertaining to a financial year(s) shall be adjusted by the Authority in the revenue requirement of succeeding other financial year(s) in lump sum or staggered over the periods.

1.4.14 Deferral/contingency reserve account etc; may also be established to the justified extent to capture variations owing to economic volatility when ascertainment of expenditure is not possible. This mechanism shall enable to give correct pricing signals and charging of cost to present consumers, else future consumers shall be additionally burdened. This contingency reserve shall be an adjusting account which shall be squared off at the time of final decision.

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(viii) Amortization/Staggering of Capital/Revenue Expenditures

1.4.15 Impact of revenue /expenditure may be staggered by the Authority over a period of more than one year in order to dilute the impact to the benefit of all stakeholders.

(ix) Up-dation /Renewals

1.4.16 Tariff regime or any component thereof shall stand updated/renewed from time to time upon Authority decisions and Federal Government advice/policy guideline consistent with the law.

(x) Applicability

1.4.17 The tariff regime shall be applicable for the bundled as well as unbundled gas network structure in Pakistan.

(xi) Effectiveness

1.4.18 The tariff regime as approved by the competent forum(s) shall take immediate effect **prospectively** i.e; from FY 2018-19 and onwards.

2. Justifications/Assumptions and Worked Example in respect of Tariff Proposals

i. Rate of Return

2.1.1 A market based rate of return i.e; WACC shall be applicable for Transmission & Distribution network. The return shall be computed on the value of fixed assets in operation. This rate shall be before tax. Corporate tax paid in the financial year shall be borne by licensee.

2.1.2 For all practical purposes, the integrated T&D network shall get the WACC for distribution network.

2.1.3 The above rate of return methodology is widely acceptable and prevalent across the world for Power and gas sector. NEPRA, a local regulator in power sector apply WACC for its different kind of licensees.

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2.1.4 The above WACC shall be based on domestic indices (except beta factor) as per this formula;

$$\text{WACC} = R_e * E/(D+E) + R_d * D/(D+E)$$

2.1.5 **Return on equity** is computed under CAPM model while cost of debt is computed on the basis of KIBOR. The formula for **Cost of equity (r_e)** is as under;

$$R_e = (R_f + \text{beta} * \text{Market Risk Premium}) / (1-t)$$

- a. **For equity**, domestic indices per State Bank of Pakistan and Pakistan Stock Exchange/KSE shall be used, as specified below.
- b. **Rf is Risk free rate** for a 20-year' Pakistan Investment Bond (PIB) calculated as the average for the last ten years prior to determination of the WACC. In the below working, **Rf** is based on the average of High & Low rate on the 20 years PIB during the last ten year. The source address is <https://www.investing.com/rates-bonds/pakistan-20-year-bond-yield-historical-data>. The 20 years PIB has been taken as it shall be more reflective in terms of capital intensive nature of assets built by the licensee and ten years average mitigate the volatility in the historical data.
- c. **Market Risk Premium** is the difference between the market return on a diversified portfolio of stocks and the risk-free rate. The Market Return has been calculated based on actual stock data using the KSE-100 Index for a period of last 15 years, The Market return in the above calculation is average of last 15 years increase/decrease in PSX/ KSE 100 Index. There is considerable degree of volatility in this indicator on the basis of period. It has been assumed that 15 years period is moderate. Accordingly, MRP has been capped at 11% with floor at 7%. The source for such information is <http://www.khistocks.com/share-prices/company-archives.html>.
- d. **Beta** is a measure of the company stock's return variability relative to the Market Premium. The average beta for gas transmission and distribution activity has been based on international experience. Accordingly Beta @ 1.06 for Transmission and @ 1.30 for distribution business has been adopted.

2.1.6 **Cost of debt (R_d)**: is based on 6 monthly averages of last twelve months Kibor which comes to 6.25%. Kibor spread has been taken at 2% in order to offset anticipated risk of variation.

2.1.7 In view of above, WACC computation/illustration as per current data is as under;

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Particulars	Transmission	Distribution
	%	
Rf (last 10 Years average of 20 Year's PIB)	12.514	12.514
Market Return (15 Years Average PSX- KSE 100 index)	28.31	28.31
Market Risk Premium	15.796	15.796
Market Risk Premium- Capped 11%, Floor 7%	11	11
Beta Equity	1.06	1.30
Nominal Cost of Equity	24.17	26.81
Nominal Cost of Debt (6 monthly Kibor)+2% spread	8.25	8.25
Nominal WACC	13.03	13.82
WACC Pre-Tax = Cost of equity/(1-t) * 30% + Kd*70%	16.28%	17.43%
T= Tax @ 31%		

ii. Assets Base

- 2.1.8 Fixed assets fully commissioned shall be added in rate base per the actual/projections of the gas utilities.
- 2.1.9 The fixed assets shall also include advances for land and the intangible assets (including IT assets) which are subject to depletion. The advance for the land has been included owing to licensee investment for ROW etc; which is realized after transfer of title.

iii. Other Operating Revenue

- 2.1.10 All revenues generated while carrying out the regulated activities, other than sales revenue, shall be treated as operating revenue for T&D companies. The criteria of sharing in respect of indirect revenues have been deliberated in the succeeding paras.
- 2.1.11 Financial expenses including interest expense, debt servicing cost, dividend and financial revenue including return on bank deposits shall not form part of allowable items and have been kept out of tariff computation.
- 2.1.12 With respect to income on account of LPS and interest on arrears, it shall be booked on accrual basis and shall form part of revenue requirement.

iv. Classification of Incomes in respect of Regulated activities in unbundled scenario

- 2.1.13 In principle, income generated relevant to regulated activity shall be reckoned accordingly. All the sources of incomes relevant to distribution activities including Late Payment Surcharge, Other income, Meter Manufacturing shall be charged to

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distribution activity. The income on account of gas condensate, extraction of LPG/NGL from transmission line/field are relevant to sale activity. In case the sale and distribution activities are combined in the setup, the same shall be charged to distribution network.

2.1.14 Transmission activity is involved primarily in the transportation of gas and acts as a common carrier. As such it may not involve in any kind of venture with respect to mercantile activity. The title of product i.e; gas does not rest with it. Therefore, currently no other operating income is relevant to it.

v. Allocations of Incomes as operating or non operating

2.1.15 The income of gas utilities from various sources, excluding sales revenue and meter rentals etc., has remained under active debate in the revenue requirement determination process as well as in the Hon'ble Lahore High Court, Lahore and Sindh High Court, Karachi wherein SNGPL/SSNGCL challenged the OGRA determinations during previous years. OGRA has remained of the consistent view that tariff regime is a package and has been enforced in totality without any adjustments in isolation. It has been deliberated extensively that different tariff models operate on varying parameters, one principle is not applicable or true in all cases. Therefore, OGRA has been of the view that treatment of incomes cannot be changed in isolation while the gas utilities continue to get fixed/guaranteed return. Further, the activities generating other resources/revenues are indirectly connected to the regulated activities of the licensees; therefore, excluding the same from the regulatory tariff mechanism does not seem to be prudent.

2.1.16 OGRA has now reviewed the whole tariff model whereby the basic parameters of the regime i.e; Return to licensee has been based on market indices. The return shall accordingly change with respect to market financial indicators and the fixed return shall not prevail. Therefore the companies shall experience volatility in their operating as well as financial parameters and shall be exposed to commercial risks. In view of the same, the revenues from other/indirectly connected activities have been deliberated and a principle has been set per para. 1.4.5 above.

2.1.17 In view of the above, below is deliberation with rationale with respect to treatment of certain incomes as operating/non-operating; ;

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Income Heads	The Treatment	Rationale
Meter Rental & service charges	Operating	Directly generated while undertaking the regulated activity.
Late payment surcharge	Operating	As per existing practice which has rationale and consistent validity. The income under this head shall be booked on accrual basis for all licensees.
Royalty	Operating	The Royalty is fixed income by nature without any effort on licensees' part and arises as a compensation of rights of the licensee in respect of gas fields allocated to it by the Federal Government. Accordingly, it shall be treated as operating income of the licensee.
Income from Meter Manufacturing Plant	50% Operating	Meter Manufacturing is an indirectly connected activity with the regulated activity and enjoys company' portfolio and good will as well. Therefore in all fairness, net profit from such activity has been equally shared between consumer and licensee.
Net income from LPG/NGL,	50% operating	The income on this account, uptill 2014, has been generated from three heads; (i) Royalty (ii) recovery of shrinkage cost and (iii) Transportation charges, under the agreement with JJVL. The production of LPG/NGL has been entitled to JJVL. There has been a settled arrangement and fixed stream of revenue from JJVL owing to company resources. SSGCL in the petitions for revenue requirement has been persistently pleading that the income on this account be treated as non- operating. The Authority however, has been deciding the same as operating income in all its decisions, except for FY 2009-10, on the premise that the income on this account is generated purely due to utilization of regulated resources. As management extra efforts or shareholders risk is very limited. Further, with respect to company contention to treat certain income as non-operating, OGRA has been highlighting that tariff regime has been implemented in totality, in all fairness and rationale; it cannot be changed in bits and pieces. The above OGRA stance on the issue

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		<p>has been consistently maintained over the decades, accordingly the same has been responded/replied in the Hon'ble High courts as well. The Courts in their detailed judgments upheld OGRA stance being rational and lucid. The matter however is still subjudice in the Supreme Court.</p> <p>Since FY 2014-15, the activity is same i.e; extraction of LPG/NGL, however there is a change in the operating model to deal the business while the tariff regime as a whole providing fixed rate of return is also revised with market based rate through the instant proposal. In the current arrangement effective 2014, an equal share of production of LPG/NGL and the sale activity is resting with SSGCL. Under the agreement (subjudice & under investigation) JJVL has to extract the LPG/NGL and is entitled to retain 50% production at market value. The rest of LPG is sold in market directly and through a subsidiary SSGCL LPG Pvt. Ltd. Thus the revenue sale of LPG in open market is now relevant with respect to management efforts/strategy.</p> <p>While the revision in tariff regime for natural gas sector in Pakistan in totality has been suggested wherein existing guaranteed return is replaced with market based rate of return, the companies' role to attractively handle LPG/NGL sale activity has bit enhanced. Accordingly, revision in tariff regime in totality coupled with change in LPG business model focuses the companies' more efforts inter-alia justify for the layer of incentive. It is therefore, keeping in view the latest norms, expedient to equally share the net income from LPG/NGL activity between the consumers and the company effective from the implementation of new tariff regime. It is pertinent to highlight that implementation of new tariff regime is pre-condition for the treatment LPG/NGL. It cannot be applied in isolation prospectively/ retrospectively. Further, the Authority view to equally share the LPG income is with respect to regulated tariff aspect in whole scenario, it has no nexus with subjudice matters on the same or any other connected/relevant aspect.</p>
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Sale of condensate	50% operating	On the basis of same rationale deliberated in respect of LPG/NGL above, particularly owing to market based tariff regime. Further, condensate is a part of regulated activity with management involvement.
Recoating of plant, Construction contracts	50% Operating	As per existing rationale which holds consistent validity.
Transportation Charges	Operating	These emerged from the operation of regulated activities.
Any other income not covered above	Operating/non operating	To be decided by the Authority.

vi. Cost Of Gas & UFG

- 2.1.18 WACOG concept is in accordance with the policy of Federal Government, as amended from time to time, to maintain uniform price structure in respect of both gas utilities.
- 2.1.19 UFG is an efficiency related benchmark implemented by the Authority.

vii. Operating Expense

- 2.1.20 All the prudent cost incurred to undertake the licensed regulated activities and to generate the operating revenue shall be operating expenses.
- 2.1.21 GIC, WPPF and depreciation are also operating expenses.
- 2.1.22 Any other expense including late payment surcharge paid to gas supplier, substantiated on logical grounds shall also be operating expense.
- 2.1.23 Efficiency benchmarks, for the purpose of improving efficiencies, shall be applicable where devised by the Authority.

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