

# True Economic Value of Gas for the National and Provincial Economies

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## Gas and Reform

- Historical background
  - Politic trend – authoritarian centralisation to democratic federalism (Rabbani 2012)
  - Economic context – state monopoly to market-orientation – ‘free resource’
- Natural resource rent
  - Efficiency – ownership does not matter, price does, no ‘free resource’ – standard economics
  - Equity – ownership and disbursement is entirely a political matter – rent and conflict (Collier et al, Bjorvatn)
- Crossroads in historical terms
  - Will the trajectory of political reform collide with the logic of economic reform, and how might they help each other?

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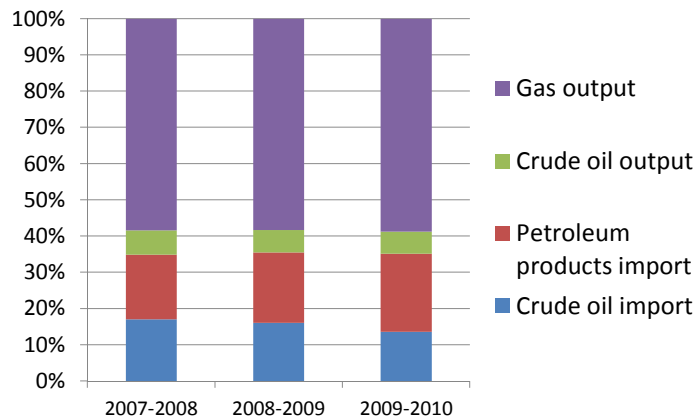
## Petroleum sector – oil and gas in tonnes of oil equivalent (TOE)

	2007-2008	2008-2009	2009-2010
Crude oil import	8,708,331	8,333,105	7,121,119
Petroleum products import	9,157,914	10,093,801	11,321,256
Crude oil output	3,434,811	3,224,215	3,180,326
Gas output	29,875,569	30,259,132	30,812,438
Petroleum import and output	51,176,625	51,910,253	52,435,139

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## Share of domestic and imported oil and gas – TOE

Source: Calculations based on Pakistan Energy Yearbook, various



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## Why think about price?

- Natural resources have economic value
- Shortages imply market is not clearing
- Most commodities and many services are now traded
- Economic value becomes pertinent once we start talking about ownership and distribution of a resource.

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## Ways of valuing gas

- Presently, in Pakistan's national income accounting gas value is based on its well-head price
  - This price is determined by the gas policy of the federal petroleum ministry
  - It has remained far below alternative valuations – i.e. an implied subsidy
- Alternative ways of measuring the economic value of gas through the market price – given that Pakistan does not yet import gas options are:
  - **Tonnes of Oil Equivalent (TOE)** – what the country actually paid for equivalent energy units imported in shape of oil in a given year
  - **India-Qatar average** – the average price neighbouring India paid in a given year for LNG imports from Qatar
  - **Henry Hub** – a market for mostly internal trading of gas within the US

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## Gas price in Pakistan in comparative perspective (Rs per million BTUs)

Sources: Calculations based on Pakistan Energy Yearbook (various), Broad College of Business (2010), Mundi Index

	2007-2008	2008-2009	2009-2010
Power*	254	359	389
Industry	252	339	382
Domestic**	93	102	118
Fertilizer fuel	252	339	382
Transport (CNG)	291	427	504
Fertilizer feed***	71	86	93
Commercial	283	393	464
Cement	335	454	536
Weighted average	223	304	340
Price- TOE	1,014	1,002	1,132
Price- India/Qatar	503	937	1,012
Price- Henry Hub	525	463	360

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## Reasons and implications of prices being far from their economic value

- What is behind this situation in Pakistan
  - Well-head prices are policy-driven – link with economic value is weak – 2001, 2007 policies
  - Policy rationale
    - Mandate of federal petroleum ministry
    - Supply of gas at lowest possible price and volatility
    - While ensuring profitability
- But implications
  - Demand AND supply distortions
  - Not only in gas sector, but across economy
  - And political implications too

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## Extent of undervaluation of gas, using alternative prices

Sources: Calculations based on Economic Survey (various), Bengali and Sadaqat (2005), Pakistan Energy Yearbook (various), Broad College of Business (2010), Mundi Index

Alternative price for gas		2007-2008	2008-2009	2009-2010
TOE (tones of oil equivalent)	Rupees, billion	1,085	1,064	1,215
	Share of GDP	11%	9%	9%
India-Qatar average for the year	Rupees, billion	513	991	1,079
	Share of GDP	6%	9%	8%
Henry Hub average for the year	Rupees, billion	538	459	334
	Share of GDP	6%	4%	3%

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## Gas production as % of GDP

Sources: Calculations based on Economic Survey (various), Bengali and Sadaqat (2005), Pakistan Energy Yearbook (various), Broad College of Business (2010), Mundi Index

	2007-2008	2008-2009	2009-2010
No adjustment	0.5	0.5	0.5
TOE	11.5	9.3	9.3
India-Qatar	5.7	8.7	8.3
Henry Hub	5.9	4.3	2.9

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## Undervaluing of gas in terms of provincial GDP – 2009-2010

Sources: Calculations based on Economic Survey (various), Bengali and Sadaqat (2005), Pakistan Energy Yearbook (various), Broad College of Business (2010), Mundi Index

	Punjab	Sindh	Khyber- Pakhtunkhwa	Balochistan
TOE	0.8	19.3	3.7	30.9
India-Qatar	0.6	14.8	2.8	23.6
Henry Hub	0.1	3.2	0.6	5.1

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## Gas production as % of provincial GDP –reference 2009-2010

Sources: Calculations based on Economic Survey (various), Bengali and Sadaqat (2005), Pakistan Energy Yearbook (various), Broad College of Business (2010), Mundi Index

	Punjab	Sindh	Khyber- Pakhtunkhwa	Balochistan
No adjustment	0.1	1.2	0.2	2.0
TOE	0.9	20.7	4.0	33.5
India-Qatar	0.7	16.2	3.1	26.1
Henry Hub	0.2	4.5	0.9	7.2

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## Provincial GDP as % of Pakistan – reference 2009-2010

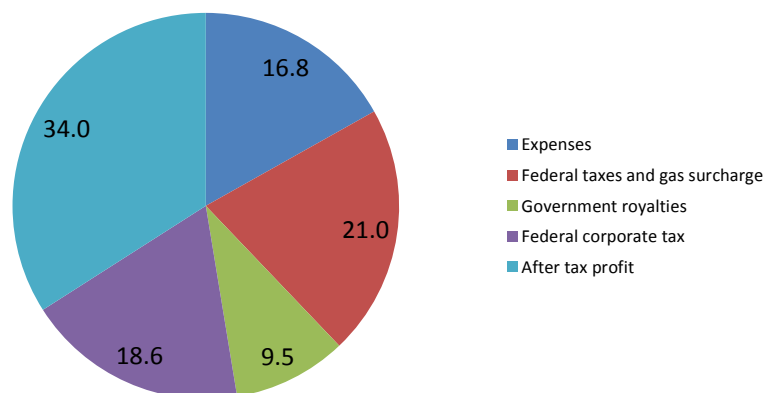
Sources: Calculations based on Economic Survey (various), Bengali and Sadaqat (2005), Pakistan Energy Yearbook (various), Broad College of Business (2010), Mundi Index

	Punjab	Sindh	Khyber-Pakhtunkhwa	Balochistan
No adjustment	51.0	31.8	11.8	5.4
TOE	47.3	34.9	11.2	6.6
India-Qatar	48.1	34.2	11.4	6.3
Henry Hub	50.3	32.4	11.7	5.6

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## Typical example of distribution of gas producer's sales revenue (per cent)

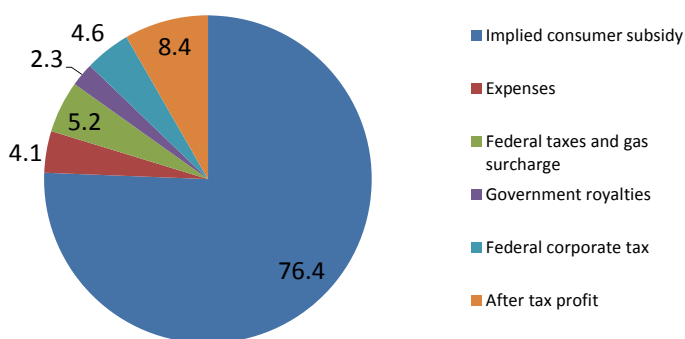
Source: PPL Annual Report 2008



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## Distribution of the economic value of a unit of gas (per cent) – assuming TOE value

Source: Authors' calculation based on PPL Annual Report, and Pakistan Energy Yearbook 2010



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## Way forward

- Economic reforms
  - Measurement is important – provincial governments and civil society can start this work
  - Energy reform will have clear winners and gainers, and serious bottlenecks – hence political issue
  - Model of other resource rich countries becomes relevant – invest resource rents in social programmes
    - Again, agenda for government and civil society
  - Gas price issue can no longer be wished away
    - Imports
    - Privatisation agenda?

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## Inevitable questions

- Political issues
  - Who should own production and distribution companies?
    - Or who should have a say on price
    - And, how should profits/rents be distributed
  - Nightmare scenario if other reforms (i.e. privatisation, deregulation etc) not cognizant of constitutional and political issues
  - Preparing the political ground – or allowing things to drift?

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