Chapter 6

Taxes and Subsidies in the Coal Sector

October 2019

This chapter should be cited as

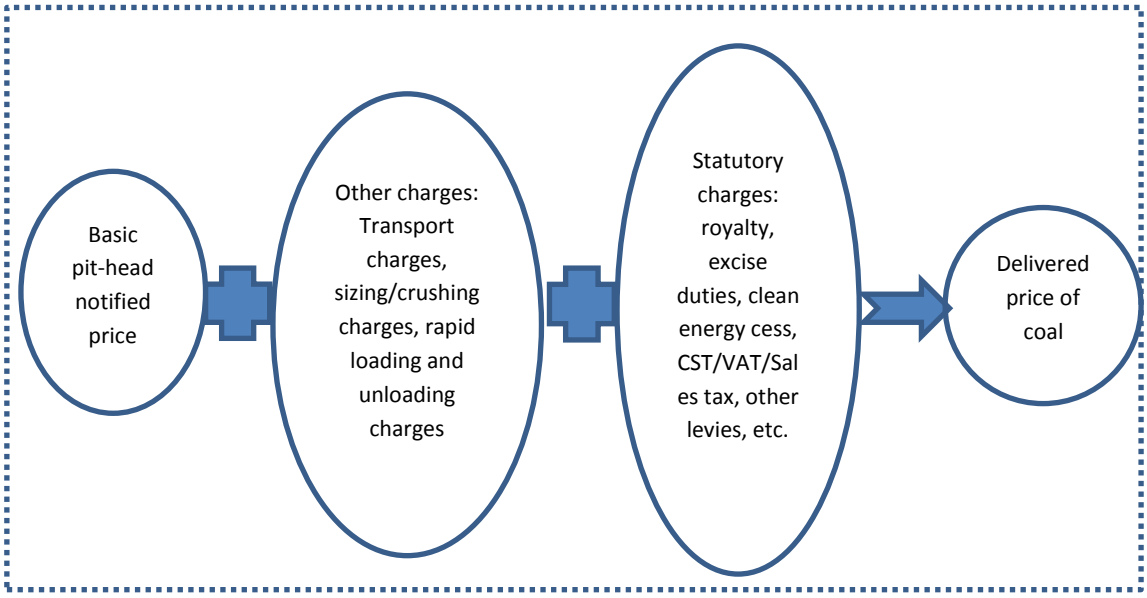
ERIA (2019), 'Taxes and Subsidies in the Coal Sector', in Phoumin, H., S. Kimura and R. G (eds.), *Energy Pricing in India: A Study on Taxes and Subsidies.* ERIA Research Project Report FY2018 no.15, Jakarta: ERIA, pp.67-77.

Chapter 6

Taxes and Subsidies in the Coal Sector

The price of coal paid at the time of purchase is a build-up of several company-imposed and government-set statutory charges. The basic coal pricing equation is shown in Figure 6.1.

Figure 6.1. Coal Pricing Equation



CST = central sales tax, VAT = value added tax.
Source: Authors' compilation.

A glance into the structure of coal price clarifies various components that make up the final landed price of coal paid by the consuming sector. Taking the case of power utilities, the price break-up (additions to basic price of coal) is as follows[9]:

Company Charges:

Sizing charges are levied by the coal company for the classification of coal as per the size requirements enumerated as follows:

- CIL charges Rs51/ton for the top size range of 200–250 mm; Rs79/tone for top size limited to 100 mm; and Rs100/ton for top size limited to 50 mm.
- The SCCL charges Rs60/ton for the top size range of 200–250 mm.
- Surface transport costs are collected by the company for the transport of coal from the pithead to the loading points.

[9] The charges mentioned in this section are subject to regular revisions per government policies. The reported figures are as of March 2015.

- CIL charges Rs20/ton for loading coal into the Indian Railways system or into the purchaser's own transport through a high-capacity loading system. For a distance of 3–10 km, it charges Rs44/ton, and Rs77/ton for a distance of 10–20 km beyond which the purchaser bears the transport charges.
- The SCCL charges Rs17/ton for up to a distance of 3 km; Rs57/ton for a distance of 3–10 km, and Rs116/ton for a range of 10–20 km, beyond which Rs3.6/km is charged.
- Fuel surcharge is charged by the company to account for increase in diesel prices.
- Pre-weigh bin charges at Rs25/ton are levied on all road and rail dispatch points, where coal is delivered by the company through pre-weighed bins.
- Additional costs applicable to the concerned dispatch points and grades such as lifting charges, additional transport cost, guarantee, sampling, facility, and any other additional costs are charged as per the terms and conditions of the Fuel Supply Agreement and memorandum of understanding with the coal buyers.

Railway charges:

- The Indian Railways charges basic railway freight for coal transportation from loading points/sidings to unloading points/sidings (Annex III).
- Dynamic pricing charge is levied by the Indian Railways at 15% of railway freight for peak and non-peak seasons, premium and non-premium services, and for busy and non-busy routes.
- Development surcharge is charged at 5% of basic railway freight and dynamic pricing charge for special railway safety.

Government levies:

- The state government levies mining companies a royalty charge of 14% for extraction and use of coal (Ministry of Mines, 2013). All coal mining states charge this rate, except West Bengal that charges a lower royalty rate of Rs6.5/ton to Rs2.5/ton but collects an additional cess of 25%/ton of coal produced (Ministry of Coal, 2012).
- Customs duty in the case of imported coal for power generation purposes is levied at 4.5%.
- In 2015/16, the central government levied a clean energy cess of Rs200/ton[10] on mining companies to reduce the environmental consequences (Ministry of Coal, 2017).
- The central government levies a stowing excise duty of Rs10/ton on the total raw coal dispatched as well as for the rehabilitation, stowing, and infrastructure development of abandoned mines (Ministry of Coal, 2017).
- A forestland adjustment charge is levied at Rs15/ton for the value of forestland that is cleared for mining.
- Forest permit fee is levied at Rs10/ ton use of forestland for mining.
- Central excise duty at 6.18% is levied on the transaction value of coal (Ministry of Coal, 2017).

[10] Currently, the clean energy cess is Rs400/ton.

- Value added t-x (VAT) is levied on the sale of coal at 5% of the sale value (on intra-state sale for power generating stations) and CST is levied at 2% (inter-state sale).
- A service tax is levied at 3.708% of railway freight, dynamic pricing charge, and development surcharge as a levy for transportation services (Ministry of Coal, 2017).

Box 4. Royalty Rate on Coal

The royalty rates across the states are fixed as per the following formula:

$$R = a + bP$$

Where, R = Royalty (rupees per ton

a = Specific (fixed) component (rupees per ton)

b = Ad valorem (variable) component (rate of royalty)

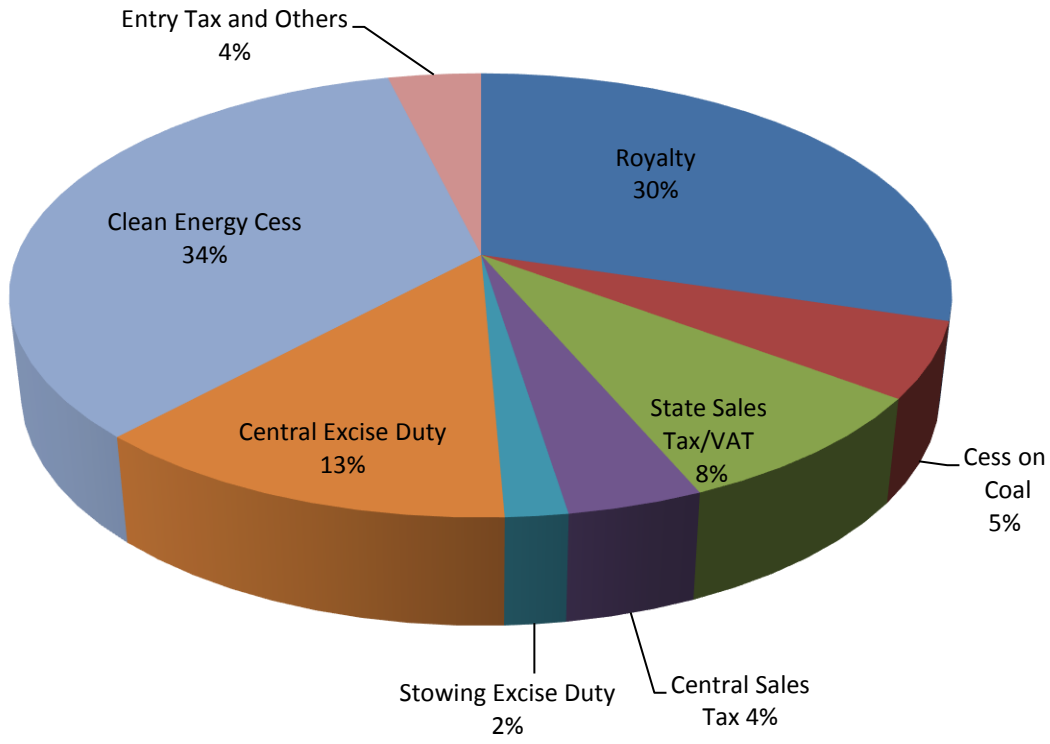
P = Price of coal (rupees per ton)

With the latest revision of royalty rates in 2012, the rate of royalty is applicable on coal in all states except West Bengal, eclipsing taxes and levies, and other charges. In case of West Bengal, apart from the small amount of royalty, the state government levies its own cess as a cost for land exploitation that is limited to the overall revenue that yields from the formula (Ministry of Coal, 2014).

1. Analysis of Taxes and Subsidies

In India, CIL holds the lion's share in coal production, especially for power generation. For 2015/16, CIL contributed a total of Rs29,084 crore towards taxes and duties, out of which the major tax component accounting for about 34% of total indirect tax revenue was clean energy cess (Rs9,980 crore). Effective 1 March 2016, the clean energy cess was raised from Rs200/ton to Rs400/ton. The royalty on coal production is charged 14% on the base rate of coal except in West Bengal where the state charges a lower royalty of Rs2.5/ton and Rs6.5/–ton according to the different grades of coal and imposes an additional cess of 25% on coal production. The total royalty collection from the account of CIL amounted to Rs8,209 crore and the additional cess accounted for Rs1,591 crore in 2015/16. The total indirect tax and duty collection on account of production and sale of coal by CIL are shown in Figure 6.2.

Figure 6.2. Contribution of Tax Revenue to the Government from Coal India Ltd



Source: CIL (2016).

1.1. Coal-based power generation

This section presents the analysis of taxes on and subsidies for the consumption of non-coking coal in electricity generation for the representative state of Gujarat. The methodology and assumptions adopted for the study are detailed below.

Methodology

The research team chose Gujarat as a representative state to study the taxation structure and net tax revenue collected by the government for coal consumption in power plants. .Gujarat was considered for gas-based power generation and due to the complexity in calculating state-wise and plant-wise tax collection since coal-based power plants are scattered across the country.

Grade-wise and plant-wise coal (domestic and imported) consumption data and respective coal linkages to power plants were required in order to arrive at coal's basic price and railway freight charges. Since these data for all plants across states were unavailable in the public domain, the state sector coal-based power generation units were considered for the study assuming that the domestic coal linkage is from the nearest mine in Jharkhand. The components of subsidy and taxation rates for coal considered under the study for 2015/16 are shown in Table 6.2.

Table 6.1. Tax and Subsidy Components Considered for Coal Consumption in Power Plants

Tax and Subsidy Components	Considerations of Coal for Consumption in Power Plants
Royalty	✓
Clean energy cess	✓
Stowing excise duty	✓
Customs duty	✓
Basic railway freight	✓
Dynamic pricing charge	✓
Development surcharge	✓
Service tax	✓
Sales tax/VAT	✓
CST	✓
Subsidy on coal consumption	Nil

CST = central sales tax, VAT = value added tax.
Source: Authors' analysis.

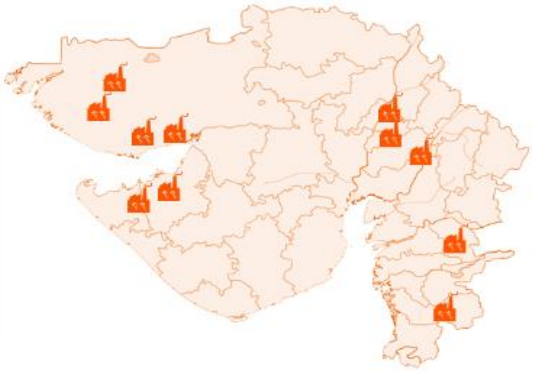
The steps for the estimation are described below:

- A bottom-up price approach on price build-up was carried to assess the total tax revenue from the segment.
- The state sector coal-based power plants in Gujarat were considered under the study and the plant-wise, grade-wise, and category-wise (domestic, washed, imported) coal composition, electricity generation, and station-wise heat rate data were accessed from government documents of the Gujarat State Electricity Regulatory Commission. Also, the corresponding delivered cost of coal based on the grade, category (domestic, imported) was accessed from the same domain.
- The station heat rate and the gross electricity generation were used to arrive at the total energy required. The weighted average grade of domestic and imported coal data received was used to arrive at the category-wise (domestic, imported) coal consumption.
- For domestic coal, the location of coal-based stations were considered (Figure 6.4) to assess their distance from the nearest mine. In case of imported coal, the distance between nearby coal handling ports and power stations were assessed.
- Since all the plants are non-pithead, the notified rate of railway freight based on distance was used to arrive at the basic freight charge for each power station considering the respective distance based on categories. The applicable rate of railway freight is shown in Annex III.
- The notified tax rates associated with coal production, marketing, and railways were also considered in developing the price build-up, which was described in the previous

section. The price build-up of coal (category-wise) to each state-owned coal-based power plant was made and the total indirect tax collection for coal consumption in the state of Gujarat was assessed.

The coal-based power plants in Gujarat generally consume the domestic non-coking coal graded between G9 and G13, some washery grades, and imported coal. The share of taxes per ton of domestic coal is shown in Figure 6.5. A representative price build-up for both domestic and imported coal to the Gandhinagar thermal power plant is shown in Annexes VII and VIII.

Figure 6.3. Map of Thermal Power Plants in Gujarat

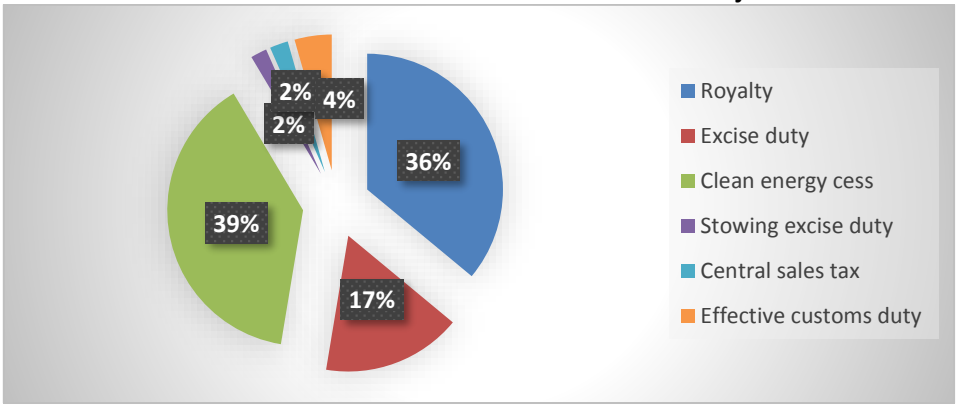


Source: Government of Gujarat (2018).

Results:

In 2015/16, the government collected Rs1,317 crore from coal sales and transportation for the power generation in state sector coal-based power plants located in Gujarat. Out of the total tax collection from the state o-ned coal-based power plants in Gujarat (excluding transportation), producer taxes such as royalty, clean energy cess, and excise duty accounted for about 90% of the tax revenue to the government and consumer taxes such as central sales tax/VAT accounted for 2% only (Figure 6.5).

Figure 6.4. Contribution of Domestic Coal Taxes for the Consumption of State-Owned Coal-based Power Plants in Gujarat



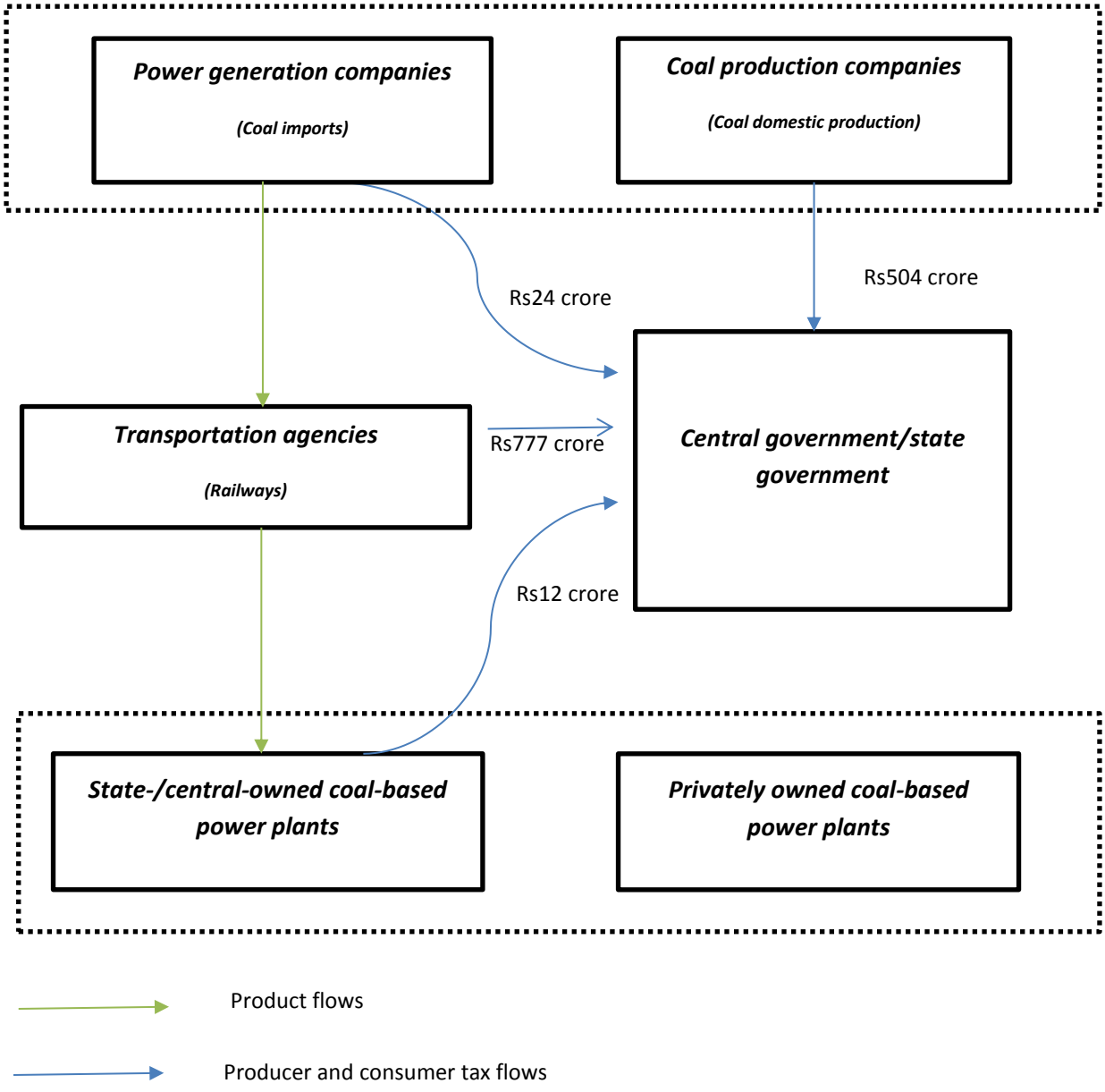
Source: Authors' estimation, Gujarat State Electricity Regulatory Commission (2016).

The collection of clean energy cess was the major tax contributing about 39% to the government revenue from these power plants. Out of the total delivered price of domestic coal at Gujarat power stations, the railway freight accounted for 45%–62%, depending on the distance from the pithead. In case of imported coal, the share of transportation cost per ton is only in the range of 9% to 20% for the power plants in the state of Gujarat. In 2015/16, the Indian Railways paid almost Rs777 crore to the government on account of transportation of coal to these power plants.

Value chain diagram for the coal use in power generation in Gujarat (Figures in Rs crore)

Figure 6.5 represents the product and tax flows across various entities for the coal used in power generation in Gujarat. In the coal-based power segment, producer taxes contributed by the coal production companies and the Indian Railways to the central exchequer through royalties, customs duties, stowing excise duty, service tax, etc. amounted to Rs1,305 crore; the consumer taxes contributed by the power generation companies to the state and central treasuries on the account of sales tax/VAT, CST etc. amounted to about Rs12 crore in 2015/16.

Figure 6.5. Value Chain Diagram for Coal Consumption of Power Plants in Gujarat (Figures in Rs Crore)



Source: Authors' compilation.

Table 6.2. Summary of the Segmental Analysis on Taxes and Subsidies for 2015/16

Segments	Taxes	Subsidies
Crude oil	• The share of tax components in a barrel of crude oil varies in the range of 23% to 28% out of which OID cess and royalty constitute 14% and 7%–11%, respectively, for 2015/16. • The oil industry development cess and national calamity contingent duty collections, which are on fixed rate basis at Rs4,500/MT and Rs50/MT, respectively, do not get influenced by the fluctuations of global crude oil prices. These fixed rate-based levies at low crude oil prices burden the oil producers. • The state of Maharashtra collected the highest sales tax at 54% of the total sales tax payment for crude oil, followed by Assam at 22% and Gujarat at 21% in FY 2015/16	• No subsidy
Subsidised domestic Liquefied petroleum gas (LPG)	• The excise and the customs duties are exempted for the domestic LPG segment. Therefore, the only taxes are sales tax/VAT and state-specific cost. • The sales tax/VAT on domestic LPG (Subsidised) varies in the range of 0%–5% from state to state. • The sales tax/VAT from the domestic subsidised LPG segment contributed approximately Rs1,347 crore to the state governments, which accounts for about 0.9% of the total petroleum products sales tax collection during 2015/16.	• In 2015/16, the Government of India implemented the direct benefit transfer for LPG across the states. • The total subsidy amounted to Rs16,074 crore, out of which Rs18 crore was absorbed by the OMCs into their balance sheets and the remaining was paid by the central government. • In addition to the OMCs' share in the total LPG subsidy recorded, they absorbed around Rs4,913 crore in the form of uncompensated costs without passing to the consumers as per the DBTL (PAHAL) scheme.
PDS Kerosene	• Not computed	• In 2015/16, under-recovery by the oil companies amounted to Rs11,496 crore, where the upstream oil companies shared a burden of Rs 1,251 crore and the remaining was paid by the central government.

Segments	Taxes	Subsidies
Natural gas	• In 2015/16, owing to the decline in natural gas prices and lower production, producer taxes, such as royalty collection, dropped by 26% to Rs2,858 crore from Rs3,874 crore in 2014/15. • Consumer tax collection from the natural gas sector is about Rs5,674 crore, almost double than the producer tax collection. • The sales tax/VAT rates for the consumption of natural gas vary from 0% to 25% from state to state. • The total sales tax collection from the natural gas sector increased at a CAGR of 6.7% between 2010/11 and 2015/16. • States such as Gujarat, Uttar Pradesh, and Maharashtra account for 70% of the total natural gas sales tax collection.	• During 2015/16, the central government subsidised Rs660 crore for the consumption of APM gas in the northeastern region. • Other than the subsidy in the north-eastern region, the consumption of natural gas is subsidised to stressed/stranded gas-based power plants as part of the central government's revival scheme.
Natural gas consumption in urea-based fertiliser sector	• The state of Gujarat was considered for the study due to limitations in data availability. • The pooled price of natural gas for fertilisers (inclusive of transportation and taxes) was US$8–US$9/MMBTU in 2015/16. • The study found that the contribution of total sales tax/VAT on the sale of natural gas for consumption in the fertiliser sector for the production of urea in Gujarat was about 25% of the total sales tax/VAT collection.	• No subsidy for consumption of natural gas in the urea sector.
Natural gas consumption in power sector	• A representative state Gujarat is considered for the study due to limited availability of data. • Under the e-bid subsidy scheme, the share of cost components other than the basic price altogether accounts for only 7.2% of the total delivered cost of e-bid LNG, which effectively reduced the delivered cost by 20% (~2 Rs/MMBTU). • The contribution of sales tax/VAT collected for the sale of natural gas to power generation plants was almost 11% of the total sales tax/VAT collected on the sale of natural gas in the state.	• For fiscal year 2015/16, as per the scheme for the use of gas-based power generation capacity, outlay of the support from the Power System Development Fund had been fixed at Rs3,500 crore. • According to the estimate, a subsidy of approximately Rs300 crore was disbursed for stressed/stranded gas-based power plants in Gujarat. This converts to a subsidy of almost Rs1.5/kWh for unit electricity generation from gas-based power plants in Gujarat.

Segments	Taxes	Subsidies
Coal	• During 2015/16, CIL contributed a total of Rs29,084 crore towards taxes and duties. • The major tax component accounting for about 34% of total indirect tax revenue was clean energy cess (Rs9,980 crore), followed by a royalty collection of 30% (Rs8,209 crore).	• No subsidy
Coal consumption for power generation	• The state sector coal-based power plants in Gujarat is considered for the study due to limitations in data availability. • Out of the total tax collection from the state sector coal-based power plants in Gujarat (excluding transportation), producer taxes such as royalty, clean energy cess, and excise duty accounted for about 90% of the tax revenue to the government and the consumer taxes such as central sales tax/VAT accounted for 2%. • Clean energy cess was the major tax contributing about 39% to the government revenue from these power plants. • In the total delivered price of domestic coal at the Gujarat power stations, the railway freight accounted for 45%–62%, and in case of imported coal, the share was only 9%–20%.	• No subsidy

CIL = Coal India Ltd, MMBTU = million metric British thermal unit, OID = oil industry development , VAT = value added tax.
Source: Authors' analysis.

Chapter 7

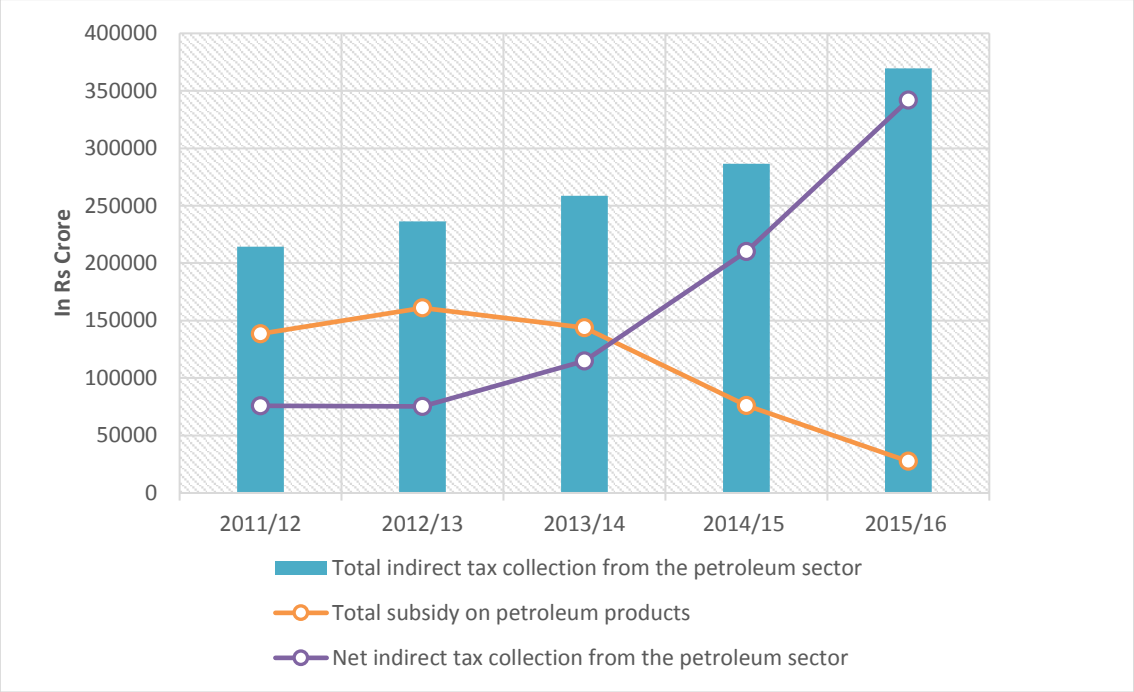
Conclusions and Recommendations

The government has historically determined the prices of energy products and services in view of socio-economic considerations such as providing universal energy access at affordable prices, meeting energy demand efficiently, ensuring greater sustainability, and supporting economic growth. Energy subsidies often act as policy tools for meeting these objectives, but do not always deliver against them and require scrutiny. Otherwise, they could create distortions to the energy industry and possibly to the economy**.** Distorted markets provide incorrect market signals, affect the level of competition, and lead to inefficient allocation of resources.

Over the years, the GoI has taken various steps in progressively moving away from energy subsidy and in rationalising energy pricing to reduce subsidy and its negative implications. Most importantly, the government has implemented various reforms such as DBTL in the oil and gas sector to allocate resources efficiently, duly eliminating duplicate and bogus LPG beneficiaries and preventing leakage into the secondary market. However, there has been a progressive albeit incomplete rationalisation of energy pricing to reduce the subsidy and distortion, particularly in the domestic LPG and PDS kerosene segments. Once allocated the subsidies tend to become entrenched and do not get revised based on indicators like capacity to pay (inflation indexation, wage indexation, GDP/capita indexation).

The petroleum sector is a major contributor to government's fiscal revenues, contributing 23% of indirect tax collection. The progressive rationalisation in the oil and gas sector, along with lowered crude oil prices, led to an increased net indirect tax revenue by 61.5% between 2012/13 and 2015/16, from 31% net indirect tax revenue in 2012/13 when the crude oil price averaged at US$108/bbl to 92.5% in 2015/16 when it fell and averaged at US$46/bbl (Figure 7.1). The share of under-recoveries out of the total indirect tax revenue from the petroleum sector also declined by 65% between 2012/13 and 2015/16, from 68% in 2012/13 to just 3% in 2015/16 under the prevailing crude oil prices which significantly reduced the impact on oil companies in realising their cash flows in a timely manner. The extent of subsidy provided under the budget of the GoI in the oil and gas sector also decreased by almost 20% out of the total petroleum subsidy budgeted between 2011/12 to 2015/16.

Figure 7.1. Trend in Net Indirect Tax Collection from the Petroleum Sector



Source: Authors' compilation.

In short, data shows that between 2012/13 and 2015/16, the increased demand for petroleum products and rationalised subsidies altogether improved the indirect tax collection in a favouring environment of low crude oil prices.

On the natural gas side, the key issues and challenges for sectoral development were pricing, infrastructure development, and domestic gas availability. The supply infrastructures such as natural gas pipelines and LNG import terminals were mature only in certain parts of the country, which led to a skewed consumption. Also, the decline in production of cheap domestic gas and delays and lack of new developments led to increased dependency on imported LNG over the years. The natural gas price indexed to the crude oil price for the Asian region is another challenging factor making the gas price in Asia higher than European and United States. The fluctuation in international crude oil prices impacted the landed price of natural gas, which is the major cost component in the delivered price of gas. Also, the sales tax/VAT varying from 0% to 25% from state to state led to an increase in the delivered price of natural gas in many states. These factors resulted in the constrained supply of natural gas, led to the creation of stranded/stressed assets, loss of revenue for value chain entities, lack of new investments in the sector, uncertainty in demand and un-competitiveness within the sector, thus requiring new policy intervention. The aforementioned factors were evident from the spatially distributed consumption of natural gas in India, along with the variation in state-wise indirect tax collection.

In the coal sector, major indirect tax components are clean energy cess and royalty, which accounted for nearly 65% of the total indirect tax collection in 2015/16. Over the past decades, coal continued to be the dominant source of energy for generating power, but coal prices are determined by CIL and are indirectly subsidised by pricing it lower in regulated sectors such as power and fertilisers compared to unregulated sectors such as industries. A lot of questions exist regarding the rationale of providing implicit subsidy on the consumption of coal in the regulated sector. To address the same, further study is required to determine the options for reform regarding coal subsidies and taxes and their distortionary impacts on different sections of the society while ensuring affordability in the electricity produced.

In many of these segments under the study, the study team experienced a lot of challenges in data collection especially in the plant-wise, grade-wise consumption of coal, coal linkage data to each power plant, mode of dispatch data from coal mines, etc. which limited the scope of research in these areas.

This study led to the following high-level recommendations:

- Subsidies should be revised based on indicators such as capacity to pay (inflation indexation, wage indexation, GDP/capita indexation) duly taking note of the socio-economic development in a developing country like India.
- As natural gas is a modern, cleaner and 'bridge' fuel for clean energy transition, it should be preferentially taxed and the landed price rationalised based on regional gas-to-gas competition which requires international cooperation between countries to facilitate the development of a natural gas hub. Government also needs to give adequate support for the development of infrastructure in the country in a timely manner.
- A centralised portal for energy data management, with data inputs from national and state agencies, should be set up for proper analysis and decision making.