



Performance Evaluation of Pakistan's Oil and Gas Regulatory Authority

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ABSTRACT

The purpose of the study was to evaluate the current performance of oil and gas regulatory authority (OGRA), which is the regulatory body in mid and downstream of petroleum sector in Pakistan. For attaining the objective of the study, high level petroleum experts were selected through random sampling. Half of the selected experts were from inside OGRA and remaining half from outside the OGRA. The criteria designed by Stern and Holder were used for performance evaluation. The empirical results of the study show that OGRA's current performance is below the required standards with core issue of less autonomy. It is highly required to have a single autonomous regulatory body for up, mid and downstream of petroleum sector in Pakistan.

Keywords: Oil and Gas Regulatory Authority, Petroleum Sector, Current Performance, Composite Performance Index, Pakistan

JEL Classifications: Q4, Q2, Q48

1. INTRODUCTION

Energy is very important for an economy (Sahir and Qureshi, 2007) Economic activities and energy sector are inter-related (Bhattacharyya, 2011). Natural gas, oil and electricity are major commercial energy resources in Pakistan (Pakistan Economic Survey, 2011–2012). Different studies show that gas is next imperative source for economic growth after electricity in the context of energy (Erbaykal, 2008). Similarly, Pakistan's energy sector development is directly linked with GDP. Natural gas, electricity, and petroleum products are positively affecting the national economy through a significant way (Siddiqui, 2004).

Energy crisis means the shortage of electricity, natural gas and oil due to price rise or supply shortfall (Haq and Hussain, 2008). Currently, Pakistan is facing the issue of energy shortage due to imbalance in supply and demand (Asif, 2009). The common problems of Pakistan's energy sector are under-pricing, Subsidizes,

overstaffing and improper maintenance (Ghafoor and Weiss, 1999). Governance and technical issues are main reasons for gas sector crises in Pakistan (Masood, 2013). Energy crises have unfavorably affected the developmental progress of Pakistan. These crises are innate with managerial and technical incompetence, unsatisfactory legislation, lack of energy conservation and governance issues (National Conference Report, 2013).

Energy market deals with trade of energy commodities. In energy market, there occurs a regulator in-between the supply and demand side as to protect the interest of all stakeholders through an efficient way. In Pakistan, oil and gas regulatory authority (OGRA) is the regulator of mid and downstream of oil and gas market. Directorate general of petroleum concessions (DGPC) of policy Wing (Ministry of Petroleum and Natural Resources) regulates the upstream oil and gas activities (Zeb et al., 2015). Due to the existing scenario of Pakistan's energy sector, a question arises;

Is the current performance of OGRA according to acceptable standards or not?

The objectives of this study are:

- To evaluate the performance of OGRA.
- To identify the key challenges of OGRA.

2. LITERATURE REVIEW

Regulation is defined as the focused and sustained attempt to modify the behavior of others according to pre-defined standards or purposes with an intension of producing a broad level identified outcomes (Black, 2002). For promoting competition, it is necessary to enforce regulations (Conway and Nicoletti, 2006). Independent regulations of natural gas and electricity along with other related terms stem from the European Union energy sector reforms (Vasconcelos, 2005).

For getting energy security, it is required to have an appropriate regulatory arrangement as energy crises in California during the year 2000 A.D was due to regulatory and institutional failures (Turton and Barreto, 2006). Energy markets were highly liberalized during 1980s and 90s. Due to boost of oil prices up to three times during 1999 A.D., it was realized that energy industry could be treated in a different way from other industries for the promotion of competition. Thus for promoting competition, regulators are needed to play key role in energy markets (Helm, 2002). Regulatory interventions are for three major reasons; to avoid market failures, to remove or restrict anti-competitive practices and to endorse public interest. Both financial and functional sovereignties are essential for effective implementation of regulations (Singh and Mirta, 2008).

In energy market, the regulatory authority is an unavoidable player as it discourages the misuse of market power (IEA, 2012). Autonomous regulatory agency is needed to be separate lawfully and organizationally from government as well as suppliers (Thatcher, 2005). European Union in its Directives suggested its member states to establish competent regulatory authorities for ensuring effective competition, efficient functioning and non-discriminatory treatment in energy markets (European Commission, 2003). Governments in Western Europe during last two decades of 20th century faced higher challenges in energy regulations due to public pressures and lack of technical knowledge. Therefore, autonomous regulatory bodies were given the power to handle energy regulatory functions by elected officials (Thatcher, 2002). Various countries during 1980s era started to adopt U.S regulatory model as the process of privatization started in their utility sectors.

Thus, regulatory bodies were established by these countries to achieve reasonable fair prices, quality service, un-biased access to infrastructure and energy security. The boundary of control between a regulator and its relevant ministry is an important aspect of well-functioning regulatory system (Gulen et al., 2007). Economies which are shifting to market-base from state-base need regulatory authorities for energy sector (Yeoh, 2006). Autonomous regulatory authority is the key feature of regulatory

set-up in Western Europe (Gilardi, 2002). Majority of the European countries have already established sector-specific independent regulatory bodies for improving regulation (Larsen et al., 2006). National regulatory bodies of European countries are linked with national constituencies of their countries and have expertise of issues solving along with control over market access (Eberlein and Newman, 2008). Middle East and North African countries indicate that credible regulatory frameworks are present in only those countries where independent regulatory authorities exist (Cambini and Franzi, 2013).

Regulators should have separate allocated annual budget and implementation power because it is necessary for autonomy of regulatory body (Karan and Kazdagli, 2011). Regulatory authority has to balance the protection of interests of consumers and investors while taking in consideration the objectives of government. Energy regulatory body must be provided resources and tools in terms of proper law, high quality staff, and financial resources (UNIDO, 2006). The key role of an Energy regulatory authority should be to protect the national interest of respective economy. For effective sectoral governance of an energy market, the complete grip of private stakeholders as well as of the government is not appropriate (Eberlein, 2008).

Energy regulation is important for China's economy development. Reforming energy regulatory system is China's priority as regulation is necessary for energy management. Proper energy regulation is prime solution for energy related problems. Political bodies and regulatory authorities should be separate of each other as it is effective for regulations due to low political interference (Qiu and Li, 2012). Similarly, Turkey has started reforming program after 2001 to promote privatization and liberalization in its energy sector. Thus, Turkey established an independent regulatory authority for making and maintaining its energy market stable, competitive, financial strong and transparent (Erdogdu, 2007).

OGRA is the regulatory authority of Pakistan's mid and downstream petroleum industry. The pricing of gas in Pakistan is performed by OGRA based on a given formula of the Ministry of Petroleum and natural resources. The regulator is not empowered to modify the formula by itself thus, unable to provide better incentives for developing new gas fields. OGRA notifies tariffs, but in doing so it only applies the formula for petroleum products and gas developed. OGRA effectively regulates about 20% of the consumer end-tariff. Funding is not secure, because the government has not approved OGRA's oil fees. Operational directives from the government are undermining the independence of the regulatory authorities. OGRA is not provided with sufficient legal capacity to effectively promote competition under their legislation (ADB, 2010).

Regulator has failed to set such regulation mechanisms which not only attract investors but also safeguards the interest of end consumers. In Pakistan energy prices are mostly subsidized by the government. Pricing mechanism is not in accordance to applicable international standards. The current performance of existing energy regulatory setup is not up to standards, therefore, demands for regulatory reforms (Zeb et al., 2015).

Stern and Holder (1999) derived a set of six elements as criteria for determining the performance of a regulatory framework in Asian developing countries including Pakistan. This set of criteria has divided in to two sub-sets which are formal and informal aspects. The formal subset consists of further three factors which are clarity of roles and objectives, autonomy and accountability while the informal aspect consists of participation, transparency and predictability. The formal aspect of regulation is related mainly to institutional design while the informal aspect deals with regulatory practices and processes. In the present study, we have applied the work of Stern and Holder to understand that either the current performance of OGRA is according to standards or not.

3. THEORETICAL FRAMEWORK

The criteria proposed by Stern and Holder (1999) has used for analyses during this study. The six performance indicators determine the existing performance level of OGRA. The formal factors are mostly linked with the structure of OGRA while informal factors are involved with regulatory processes. Schematic diagram shows that current performance level of OGRA is actually based on evaluating the current level of six performance indicators given in Figure 1.

4. RESEARCH METHODOLOGY

It was a field study survey research. The data of this research was cross-sectional obtained through questionnaires from energy experts of Pakistan. The questionnaire consisted of close ended questions as given in Appendix of the study. The population for this research was oil and gas experts of Pakistan. A simple random sample was selected for analysis. The sample was all those professionals who were working in BPS 17 (basic pay scale) or above in OGRA or oil and gas sector four or more years. If the respondent was working in private sector the designation was equal to BPS 17 or above. A total number of 54 questionnaires were distributed among which 30 collected with a response rate of 55.6%. Finally, all the 30 respondents questionnaires were selected for analysis comprising of an equal number of respondents from within OGRA and outside OGRA.

The questionnaire used during this research was a combination of two parts; Section A was about general information of respondents, and section B was about the current performance level of OGRA. The research instrument used in this study was already designed by Stern and Holder (1999). Likert scale method was used as a measure to collect data about performance indicators (5 for strongly

agree, 4 for agree, 3 for neutral, 2 for disagree and 1 for strongly disagree). Overall in sections B, there were six questions related to clarity of roles and objectives, four questions of autonomy, seven questions about accountability, five questions of participation, five questions of transparency and five questions relevant to predictability. All the thirty-two questions were treated on Likert scale. Among the questions, there were 8 negative sense questions (Q: 3, 4, 6, 8, 10, 22, 28 and 29) out of 32 questions, therefore, first of all these were converted in to positive sense to make the analysis clear and easy. Thereafter, the mean value of each performance indicator was determined. Finally a weighted mean value of each performance indicator was calculated from the responses of all respondents and compared its level with a maximum level of 5. A level of 5 was chosen as a standard value because the maximum weighted mean of each performance indicator was 5. If the mean value of a performance indicator was above three (neutral value of questionnaire) it was assigned as in satisfactory level.

5. ANALYSIS AND DISCUSSION

1. The mean value of each performance indicator was determined in MS Excel for the responses of each respondent. Then a list of mean values for all indicators was analyzed through SPSS. Thus, a mean of mean values (weighted mean) for each indicator was calculated as given in Table 1 Although except autonomy each of the remaining variables have values higher than 3 but much lower than 5 which means that the remaining five indicators are although in acceptable range but with a low level of performances.
2. Similarly, for evaluating overall performance of OGRA, a composite performance index (CPI) was established. CPI was basically an average number of cumulative weightage of six performance indicators divided by 5.

5.1. Clarity of Roles and Objectives

The weighted mean value of this factor is 3.1 which has just surpassed the threshold value (3), although much lower than the maximum value of 5. The calculated value reflects that OGRA needs to have clear set of rules and objectives. OGRA should have a decision making role instead of just an advisory body to the ministry. The functions of OGRA and ministry should be clearly defined without any ambiguity. The existing practice in Pakistan is that there exist two regulatory entities for controlling the petroleum sector of the country i.e. OGRA and DGPC. It is highly required to have a single autonomous regulatory body for up, mid and downstream of petroleum sector in Pakistan. Thus the functions of DGPC should be given to OGRA by making DGPC as an integral part of OGRA.

5.2. Autonomy

The weighted mean value of autonomy is 2.9 which is below the threshold value (3). This means that OGRA is not free of government influence while performing its functions. This is the most critical issue which OGRA faces. OGRA needs to be free of government while financing itself and appointing the members.

5.3. Accountability

The weighted mean value of this factor is about 3.5 which is above the threshold value (3) and much better than other two formal

Figure 1: Schematic diagram

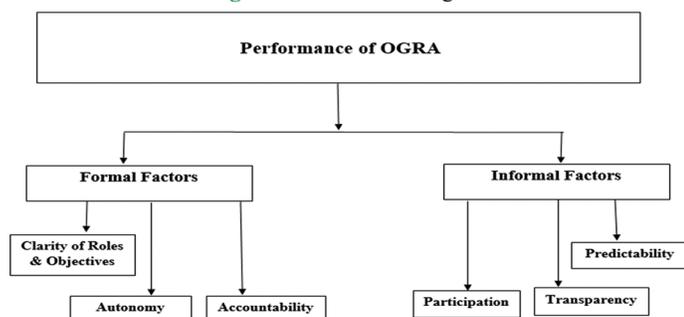


Table 1: Performance indicators of OGRA statistics

Indicator	N	Minimum	Maximum	Weighted mean
Clarity of roles and objectives	30	2.0	3.8	3.1
Autonomy	30	2.0	4.0	2.9
Accountability	30	1.7	4.2	3.5
Participation	30	1.2	4.4	3.1
Transparency	30	2.2	4.4	3.2
Predictability	30	2.4	4.8	3.6

factors. This means that OGRA is accountable for its decisions. Even then, this factor needs improvement because it is too low than the ideal value (5). The formal mechanism for consumers and regulated firms to challenge the decisions of OGRA may be improved by the establishment of energy court.

5.4. Participation

The weighted mean value of this factor is 3.1 which also just surpasses the boundary line of threshold value but too much lower than the ideal value. This shows that OGRA needs to formally involve regulated firms, consumers and other stakeholders before taking major decisions. Firms and consumers should be involved in regulatory decision making and processes.

5.5. Transparency

The weighted value of transparency is 3.2 which is just above the threshold limit although lower than the ideal value of 5. It is needed that major documents of OGRA should be in view of general public. OGRA should further improve the mechanism to publish its major decisions and reasons behind these decisions.

5.6. Predictability

The Weighted mean value of predictability is about 3.6 which is above the threshold value (3). Although OGRA has formally set out the regulatory principles but it needs to establish a consistent approach for its decisions. OGRA's duties and functions should not be changed easily. The key regulatory documents (e.g. licenses, authorizations and contracts, etc.) should also be not changed easily.

5.7. CPI

During the study a composite performance index has established for summarizing the overall performance level of OGRA. The CPI of this study is an average of cumulative weightage of all six parameters divided by 5 (maximum possible limit). CPI is supposed to be an overall representation of the current performance level of OGRA. The measured CPI value of this study is 0.64 (3.2/5) out of 1 (5/5), which indicates that current performance of OGRA is low below the standards. It is needed that the performance of OGRA should be improved by improving all six factors.

6. CONCLUSION

From this research, it is concluded that OGRA lacks autonomy. In other words, OGRA is under the influence of government. Similarly, clarity of roles and objectives, participation and transparency factors are also on the lower side. Only Accountability and Predictability factors are somewhat higher although still much lower than the ideal values. Overall formal factors performances

are somewhat lower than informal factors which are not favorable because formal factors are associated with organization's structure while informal factors with organization's processes. Similarly, the performance composite index value shows that current performance of OGRA is although in acceptable range but still needs improvement. It is needed to improve the level of all six performance indicators through which overall performance of OGRA may be improved. Due to improving the performance of OGRA, the oil & gas market of the country will be enhanced in terms of supply and prices and the ultimate beneficiary will be Pakistan as it will pave the way for overcoming energy crises.

Pakistan is an agricultural based country with large scale opportunities in development of biogas and biodiesel. Due to enhancement of these types of renewable energy, the import bills of the country might be decreased along with sustainable development. Pilot projects and different research works are underway related to biogas and biodiesel under the umbrella of Alternative Energy Development Board and Pakistan Council of Renewable Energy Technologies. It is needed that OGRA should take the challenge of developing renewable energy market. OGRA should focus keenly on development of biogas and biodiesel related projects on commercial basis. For this purpose, Government of Pakistan should authorize OGRA which will further take strategic actions by involving, Pakistan State Oil, Sui Southern Gas Company, Sui Northern Gas Company, exploration and production companies and other relevant stakeholders. Through this way, OGRA will be able to decrease dependency of the country on fossil fuels and will increase renewable energy shares in the energy mix of Pakistan which is a way to make the globe clean and green for a better tomorrow of upcoming generations.

In future it is needed to investigate that oil and gas prices set by OGRA, are how much cost reflective for investors and affordable for consumers.

7. ACKNOWLEDGMENT

The Author and Co-authors are thankful to Stern and Holder who designed the evaluation criteria used in this study.

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APPENDIX

Appendix (research instrument)

Section A: General information

Section B: Please select the right option for current performance of OGRA in light of your knowledge and experience

Current performance of OGRA	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Clarity of roles and objectives					
Primary legislation has clearly defined the duties and functions of OGRA					
OGRA has a clear decision making role rather than advisory body to ministry					
There is ambiguity during performing functions between OGRA and relevant ministry					
There are certain functions which are jointly performed by OGRA and respective ministry					
It is clearly defined in regulation that which entity (regulator and ministry) is responsible for which regulatory function					
OGRA has also responsibility for commercial activities					
Autonomy					
OGRA is independent of government while performing its functions					
Government has a strong influence during the appointments and dismissals of regulatory body members					
OGRA is free of government to finance itself					
OGRA needs the approval of government for funding					
Accountability					
There is a formal mechanism for consumers and regulated firms to challenge the decisions of OGRA					
The effected party has also a legal right of compensation against OGRA					
The effected party can challenge regulatory decision through informal channel of media or ministries					
OGRA is accountable for its decisions to parliament					
Members of OGRA can be dismissed if they fail to fulfill their duties					
There is a facility under primary law for judicial review of OGRA's decisions					
The appeal mechanism for judicial review against the OGRA's decision is effective					
Participation					
OGRA formally involves regulated firms, consumers and other stakeholders to understand their proposed approach before taking major decisions					
OGRA makes consultation responses (discussions with firms, government and consumers) public either in full or in a summary of responses					
OGRA comments publicly on points made in consultation responses					
Consultation responses influence the final decision of OGRA					
Firms and consumers are not involved in regulatory decision making and processes					
Transparency					
Major documents of OGRA (licenses etc.) are in public view					
OGRA publishes major decisions					
OGRA publishes reasons behind major decisions					
If OGRA does not publish either decisions or reasons then firms are told of the reasons for major decisions					
The publication of major decisions/reasons is compulsory for OGRA					
Predictability					
OGRA's duties and functions can be changed easily					
The key regulatory documents (e.g. licenses, authorizations, franchise contracts, etc.) can be changed easily					
OGRA has formally set out the regulatory principles (e.g. on the procedural approach to tariff reviews, the definition of the rate base or the rate of return which a firm should be allowed to earn)					
OGRA has established a consistent approach for its decisions					
A time table for regulatory events is published every year by the OGRA					

OGRA: Oil and gas regulatory authority