

CHAPTER 6

Conclusion: the role of regulation in gas and energy supply

6. A path to Regulatory and Institutional Effectiveness

As mentioned in Chapter one, the concept of regulation in an instrumental sense comprises the mass of technical statutes, judicial and quasi-judicial decisions, statutory instruments and other secondary and tertiary rules and regulatory guidelines containing prescriptive and descriptive standards of social or economic conduct. Accordingly, in this study, regulation is depicted as involving the process of enacting law (relating to a social or economic activity) as well as a thorough understanding of and engagement with the intended regulatory activity by specialised governance institutions. In a functional sense, such institutions take on pivotal role(s) such as being organisational (e.g. contracts and public agencies); rule-making and standard setting (e.g. laws, judicial precedents and regulatory guidelines); as well as fact-finding or quasi-judicial engagements. Thus, this thesis has adopted a functional understanding of law and regulation in the context of the gas-to-power value chain and as instrumental elements of the institutional framework of the value chain.

To be considered effective, the applicable legal, institutional and regulatory framework should enhance and lead to the realisation of defined policy objectives which informed their establishment in the first place. The concept of 'instrumental effectiveness' postulated in this study entails (i) the theory that laws, regulations and institutions are instruments deployed in relation to an adopted regulatory paradigm and framework, which therefore serve as a means to an end, so that their effectiveness is best measured by the extent to which that end is achieved; and (ii) institutions enabled to address challenges such as opportunism, information asymmetry, rent-seeking by private and public operators and bounded rationality in energy supply markets (liberalised, deregulated or re-regulated) have a pivotal role in ensuring the establishment and maintenance of an effective and functional regulatory framework.

As discussed in Chapters three and four respectively, Nigeria and the EU are in the process of implementing strategically similar regulatory paradigms in the restructuring and liberalisation of their respective gas supply industries. The approaches adopted in these situations essentially follow similar restructuring and reform initiatives in the US in the 1980s and the UK in the late 1980s and 1990s, as discussed in Chapter five. In most jurisdictions that have a centralised gas value chain, vertically-integrated utilities are subject to the

traditional cost-based rate regulation or public service approaches. There is also the underlying rationale that such energy utilities provide a public service rather than being engaged in the supply of commodities or 'goods'. The concerns about inefficient resource allocation and economic governance of the 'essential facilities' owned and managed by these utilities (which were also, in the pre-reform days, mostly owned and controlled by the State) became increasingly pronounced during the 1980s and 1990s. Such concerns relate to the propensity of such centralised vertically-integrated utilities with monopoly, and in some cases, monopsony market power to (i) charge unreasonable prices and discriminate against consumers; (ii) fail to invest adequately and on a timely basis in essential infrastructure; (iii) be unable to make timely rational or apolitical, commercial decisions; and (iii) create locked-in inefficiencies as a result of their typical reliance on long-term gas purchase and supply contracts and centralised 'public-oriented' planning without due regard for commercial realities and efficient resource allocation. Thus, as discussed in Chapter 2 (at 2.4.3), the consequential restructuring initiatives typically involve privatisation and liberalisation, which entail the following:

- (iv) breaking up or unbundling vertically-integrated entities (often with interests upstream, midstream and downstream) by separating and distinguishing their potentially competitive segments (i.e. upstream and sales/trading) from the monopolistic segments (i.e. transmission and distribution networks);
- (v) ensuring entry into the competitive activities is effectively deregulated, without jeopardising justifiable public and consumer interests;
- (vi) implementing an open access or TPA framework where there are monopoly bottlenecks (e.g. in transmission and distribution networks) by ensuring reasonably priced and non-discriminatory access to networks, and incentivising network owners to make their assets available to other suppliers via efficiently negotiated or regulated agreements; and
- (vii) enabling an independent, apolitical regulator to decide in a responsive manner which model of regulation will be applied to the different unbundled segments, e.g. incentive-based models or traditional cost-based / rate of return models, or an effective hybrid.

Given the analysis provided in the preceding chapters, it may be reiterated that formal legal institutions (such as laws, judicial and regulatory decisions) and organisational institutions (such as contracts, public agencies and independent economic regulators) play a facilitative role in the realisation of these structural changes. However, such cost-bearing changes create winners and losers, and must, therefore, be carried out in a manner that is responsive to the overarching policy objectives and interests of the industry and society at large. These institutions facilitate transactions, create stability and may potentially enhance trust and accountability among relevant market actors. They may also lead to inflated costs and increased information asymmetry problems if not efficiently and effectively designed, as discussed in Chapter 5.1.2. Therefore, this concluding chapter seeks to provide an overview of the issues deliberated upon in the preceding chapters as a means of addressing the central research question asked in Chapter 1.3, i.e.

Is there a single and ‘ideal’ model or approach for attaining effectiveness in the restructuring and regulation of the supply of gas to the power market? If not, then what is the matrix of models and approaches?

In answering this central question and considering the methodology and approach adopted in this thesis, as discussed in Chapter 1.4, the following ancillary questions become relevant:

- (1) What are the underlying theoretical assumptions, institutional structures and principles that underpin the identified modern approaches to the restructuring and regulation of the supply of gas to the power markets?
- (2) What are the factors that determine or affect the instrumental effectiveness of such approaches and regulatory framework?
- (3) What is the best approach or framework for the restructuring and regulation of the gas supply to power value chain in Nigeria and the EU?
- (4) How instrumentally effective are the applicable regulatory and institutional models and approaches adopted in the restructuring and development of gas-to-power markets in Nigeria and the EU?

The aim of raising the central research question and the subsequent ancillary questions is to achieve a better understanding and application of modern approaches to the regulation and institutional restructuring of gas supply to power value chains. Adopting Nigeria and the EU as case studies also provides a logical path to understanding the initiation and implementation of the strategically similar paradigms of regulation and restructuring used in these jurisdictions, albeit in different socio-economic and industrial contexts. An increasing number of forward-looking developing and resource-rich economies like Nigeria, as well as developed economies such as those within the EU, are seeking a more effective path to economic regulation. This essentially means developing a competitive, secure and sustainable gas utilisation framework for the power and energy value chain. This explains the need to identify the factor or a matrix of factors that enhance the instrumental effectiveness of the relevant regulatory and institutional regimes in an industry which is becoming increasingly liberalised, international and interconnected globally.

Chapter 2 sought to address ancillary questions (1) and (2) relating to the principles and institutional theories that underpin modern approaches to the restructuring and regulation of the gas supply market. It also addressed the highlighted factors that influence the instrumental effectiveness of the approaches and paradigms of regulation considered. Chapter five further highlighted these issues and contextualised the underlying principles and theories concerning the economic regulation and restructuring of gas supply markets as they have evolved in the pioneering jurisdictions, i.e. the US and the UK. Chapter three on Nigeria and Chapter four on the EU respectively addressed ancillary questions (3) and (4) by discussing the legal, regulatory and institutional frameworks for gas supply in Nigeria and the EU as jurisdictions which traditionally had centralised gas supply paradigms and are now being systematically liberalised and restructured. The discussion in Chapters three and four also considered the instrumental effectiveness of the approaches adopted and the paradigms of regulation in Nigeria and the EU respectively.

Clearly, socio-economic, political and institutional developments in different countries and jurisdictions make it difficult to approach liberalisation in those countries and jurisdictions in the same way and achieve the same results as have been achieved in the US via open access to essential facilities and unbundling of vertically integrated network-bound gas suppliers without encountering unforeseen costs and benefits as well as creating winners and losers. However, such increasingly transnational restructuring paradigms and economic

regulation principles provide an appropriate framework for competitive energy markets. This is especially the case because challenges like opportunism, bounded rationality, asset specificity, rent-seeking between private and public actors, and rational choice theory ideas are universal and feature in all economic and industrial environments. Such issues are therefore also arguably applicable in the context of an increasingly international gas supply value chain and an industry in which the unique nature of ‘gas’ and ‘electricity’ as energy resources are the same in all countries and jurisdictions. In addition, contracting patterns, as well as the applicable legal and institutional designs, also require the same elements, regarding the ability to effectively manage public and private stakeholders who are all seeking utility and wealth maximisation from the value chain, as discussed in Chapter 2.1.⁸⁸⁰

For instance, in the US context, while Hirschhausen opines that restructuring and vertical unbundling went hand-in-hand with significant infrastructure investments, Weaver rightly questions whether fully deregulated markets can be trusted to carry out efficient resource allocation and governance following the California energy crisis of 2000/2001 and the collapse of Enron in 2001.⁸⁸¹ Furthermore, Eisen et al. point out that ‘the switch to competitive gas market became possible [in the US] because so many new pipelines had been built [and] most market areas had reasonably good access to more than one pipeline and because pipeline capacity had caught up with demand. Thus, few pipelines had monopoly positions, and there was less need for major new capital facilities that could be financed only on the basis of long-term contracts [or in essence the centralised vertically-integrated paradigms] ...’⁸⁸² Thus, it is argued here that the boost in gas-to-power investments (see Figure 15), as well as other benefits that followed the emergence of a competitive gas market in the US from 1985, is not solely due to ‘liberalisation’ or ‘deregulation’ by themselves, but rather a matrix of factors. In this regard, the responsiveness of the applicable regulatory and institutional framework facilitates the following-up of the various policy objectives during the transitional period, such as the FERC’s response to the contentions against the restructuring and costs effects of Order 636 and the issuance of Order 636-A.⁸⁸³ Note also

⁸⁸⁰ For discussion of the 2000-2001 deregulated market crisis in the US, see Chapter 5.1.2.

⁸⁸¹ Weaver (n41), pp. 17-20.

⁸⁸² Eisen et al (n4), pp. 559-560.

⁸⁸³ The US EIA (n820) notes that following issuance of Order 636 interstate pipeline companies had to unbundle, or separate, their sales and transportation services: ‘Initially, Order 636 specified that the pipeline companies would be permitted recovery of 100 percent of their “prudently incurred” transition costs in the form of reservation surcharges to customers, or from an exit fee charged to firm-service customers. However, many LDCs, state commissions, and consumer advocates contended that the 100-percent pass-through of realignment costs would place undue burdens on captive customers of the LDCs, whereas pipeline companies, producers, marketers, and industrial consumers would not pay their

that the initial introduction of privatisation in the UK led to the emergence of a privatised British Gas monopoly, while the subsequent liberalisation drive has left the industry with about six major firms controlling the bulk of the market. However, as examined in Chapter 5.2.1, Ofgem continues to play an instrumental role in matching the demands of evolving policy objectives with the application of regulatory approaches to oversee the market. Thus, it is argued here that the idea of restructuring for competitiveness and security of supply is clearly a process and not an end in itself.

Therefore, in jurisdictions like the EU, which seeks to develop a supranational, integrated, market-based, competitive and secure gas supply value chain, as discussed in Chapter 4, the role of effective regulation and institutions cannot be overemphasised. Likewise, as discussed in Chapter 3 in respect of the Nigerian context, the incoherence of the regulation being carried out, together with that of the state-controlled approach to resource allocation and governance, which is also fraught with uncertainties and arbitrariness, is obviously counterproductive to any prospects of developing a viable, secure and competitive gas supply to power value chain. The discussion in this thesis reveals that there is no ‘single’ and ‘ideal’ model or approach for attaining effectiveness in the restructuring and regulation of the supply of gas to the power market, especially concerning the often counterbalancing or counteracting objectives of competitiveness, security of supply and sustainability. This leaves out the other half of the central research question, which asks what matrix of models and approaches should be used to achieve effective restructuring and regulation of the supply of gas to the power markets.

6.1. Highlights of the EU and Nigerian case studies

The EU is a supranational economic union comprising numerous Member States, all of which have their own unique political, social and economic experiences and levels of development. Regarding the development and economic regulation of the gas and electricity supply, most of these Member States traditionally had a public service, state-controlled and largely centralised approach. However, the decision to create an integrated European single

share. Partly in response to such objections, FERC issued Order 636-A on August 3, 1992, which required pipeline companies to recover 10 percent of the cost of changing supply contracts through their rates for interruptible transportation...’

market from the mid-1980s⁸⁸⁴ led to an increasing need to create an enabling environment to support much-needed investment to establish competitive supply chains for gas and electricity in the 1990s.⁸⁸⁵ Alongside this development apparently came the need to introduce modern approaches to energy supply resource allocation and governance paradigms such as TPA, unbundling and EU-level economic regulation, as discussed in Chapter 4. However, as discussed above, political and institutional commitment to the decentralisation of the gas and electricity markets has been of varying intensity in the different Member States, thus leading to uneven development and to the inconclusiveness of the integration plan in relation to interconnected and interoperable networks and supply systems across all the regions of the EU. Here is a summary of the key issues identified in the discussion in Chapter 4:

- (1) The application of antitrust law and the IEM package of regulations and directives to prescribe the standards for TPA to essential facilities and gas supply networks, the unbundling of network owners and operators, as well as non-discriminatory access to proposed and existing energy supply networks (including grounds for exemptions) have been instrumental in the evolution of a considerable decentralised internal market for gas supply. Going forward, the importance of consistent and uniform implementation of the regulatory and institutional framework for access to energy networks, non-discriminatory market-based tariffs and EU-wide framework guidelines and network codes made under the network access regulations cannot be overemphasised.

- (2) The transition towards a fully competitive and secure internal market for gas has proceeded at a much faster pace in Central and Western Europe than in Eastern Europe. Essentially, the level of gas trading and diversification of supply sources is much lower in Eastern and Southern Europe, mainly due to longstanding reliance on Russian gas supply contracts and other arrangements and limited infrastructure, all of which were developed in the Soviet era. Thus, the instrumental effectiveness of

⁸⁸⁴ See Johnston and Block (n7), pp.13-29, on the development of the EU's IEM agenda from the early days of creating an agenda for a common EU market without frontiers and borders to limit free movement of goods and trade.

⁸⁸⁵ Figure 14 also reveals the increasing role of natural gas in the electricity fuel mix of the EU from 1992 to 2008. A downturn in the role of gas (as with other fuel sources) occurred began in 2008, apparently due to the 2008 financial/economic crisis and the overall reduction in energy demand. It is interesting to note that regardless of the push for the overall sustainability of the IEM and climate change mitigation objectives, the electricity industry used more coal from 2010 – perhaps due to its affordability compared to gas – as well as more solar, wind and geothermal sources, perhaps due to the state support and subsidy schemes available in countries like Germany, as discussed above.

provisions relating to approval of, and investment in, major new infrastructure, such as under Article 36 of the Third Gas Directive, as discussed in Chapter 4.3.2 (c), (d) and (e), is essential.

- (3) External suppliers and gas producers seeking to do business, operate and/or invest in the EU should consider the plausible risks and benefits of such objectives, taking into account the increasing potential implications the shift to short-term trading arrangements and supply contracts may have in terms of securing financing for large-scale projects. In this regard, developments and experiences in pioneering jurisdictions like the US and UK provide an instructive working model.
- (4) Energy supply regulation at EU level appears to have become increasingly responsive to the divergent interests and stakeholders at national level, considering the increasing role and engagement of the NRAs in permitting and approval processes. Institutions like the ACER, the ENTSO-G and the ENTSO-E also provide the necessary platform for coordination and information-gathering. As the internal market becomes more integrated and moves from a centralised paradigm to a decentralised value chain, the effectiveness of the applicable framework appears to lie in its clarity and transparency, and in the non-discriminatory application of rules and standards. The capacity of the relevant institutions to engage with the various stakeholder interests and facilitate a more effective realisation of the core policy objectives is also of key significance.
- (5) There has arguably been more State involvement in the development of an effectively liberalised market, especially relating to EU-level regulation-for-competition, which is reflected in decisions relating to licensing and permitting in relation to new network infrastructure. The trend towards more State involvement is perhaps attributable to increasing concerns over security of energy supply at national level and how these concerns interact with other EU-level objectives like competitiveness and sustainability.

Nigeria on the other hand, as discussed in Chapter 3, has been engaged in restructuring and reforming its oil and gas industries for over 13 years. Realisation of the various plans and projections established in order to achieve more efficient gas utilisation for power generation

has been hampered. This has mostly been the result of the inconclusive reforms that have been carried out, which have created uncertainties and a hold-up problem against investments in domestic supplies – particularly when contrasted with the resilient and thriving export projects that have been established – as well as institutional misalignments between the domestic gas and power sectors, incoherence, haphazard policies and a flawed regulatory framework. The multifaceted security of supply challenges created by the inadequacy of essential supply infrastructure coupled with frequent sabotage by restive gangs from host communities cannot be overemphasised. Reportedly, the current FGN has launched several reconciliatory and mediatory initiatives by directly visiting and engaging host communities in the Niger Delta. The longstanding grouse of these communities has been the perception of a thriving petroleum industry supported by the State and rent-seeking government officials in collaboration with opportunistic private firms at the expense of the communities that deal with the menace of gas flaring and environmental pollution externalities posed by the industry daily.

On the basis of the discussion in Chapter 3 the following points can be highlighted, which pertain to the development of the institutional and regulatory framework for a competitive and secure supply of gas to the power market in Nigeria:

- (1) The gas supply value chain in Nigeria remains considerably centralised, while the government-owned and managed NNPC maintains its monopsony and monopoly control over commercial and economic decisions pertaining to domestic gas utilisation and supply and infrastructural development via its midstream and downstream subsidiary, the NGC. Notwithstanding this NNPC/NGC state-centred control, several international and local private companies also operate in the upstream sector. It is worth noting that infrastructural constraints, security of supply challenges, the arbitrariness and opacity of regulation, coupled with challenges to the viability and liquidity of the domestic wholesale market seem to impose constraints on the ‘rational’ upstream producer in taking firm decisions to produce, process and supply gas for domestic energy purposes. More importantly, akin to the developments that followed the 1954 *Phillips Petroleum Co. v. Wisconsin* decision of the US Supreme Court, and the treatment of ‘gas producers’ like gas transportation companies subject to the same scheme of cost-of-service regulation as pipeline network companies,

Nigerian upstream producers also seem to have refrained from making a dash to invest in and develop gas for domestic supply over the years.

- (2) Over the last few decades, the realisation of growth projections for domestic gas utilisation in Nigeria has been hindered largely due to inadequate infrastructure, insecurity and sabotage, as well as fundamental market governance issues relating to pricing, resource allocation and the lack of specific and responsive incentive-based regulation for gas-to-power. It appears that some of these issues are being addressed in the recent policy reviews and announcements relating to the reorganisation of the NNPC and its subsidiaries. However, it is worth reiterating that such *ad hoc* or reactionary reorganisations are similar to earlier NNPC reorganisations of the 1980s for instance, albeit in line with some of the reform objectives which failed to be enacted through the highly politicised legislature. Furthermore, it is also noted that national plans and policies cannot replace the justiciability and legitimacy of definite reform laws followed by instrumentally responsive regulations made by a well-resourced, knowledgeable independent regulator.
- (3) Leaving the regulatory and institutional gaps in the gas supply framework highlighted in Chapter 3 unfilled in the names of ‘liberalisation’, ‘reorganisation’ or ‘restructuring’, and failing to address the fundamental problems could lead to the emergence of a ‘Nigerian Enron’. Restructuring and regulatory reform plans, policies and paradigms are not ends in themselves, but a means to an end which includes the effective transition to a competitively secure and sustainable value chain for gas supply.
- (4) It is argued here that a responsive economic and price regulation model that provides sufficient incentives for the efficient producer to invest and profitably remain in business while supporting innovative ways to reduce pass-through costs ought to be adopted.
- (5) Thus, rather than attempting to fix or stipulate rates, charges, penalties or royalties in the texts of statutes and regulations, there is a quintessential need for a responsive regulatory institution with the required expertise and capacities to determine such specific rates and figures in a methodological and transparent manner. Such a regulator would be expected to play an instrumental or mediating role in price review

scenarios in a liberalised and competitive market context. It is worth noting that it would be counterintuitive to have the NNPC, the DPR, the GACN, the DoG or the Minister as presently constituted playing such roles, assuming the market remains as oligopolistic as it is at present, while the NNPC/NGC is owner and operator of the major pipelines and network infrastructure.

- (6) It is becoming increasingly necessary to clarify the roles of the GACN as Aggregator, the DoG (if it actually exists in reality) and the NERC vis-à-vis gas-to-power market regulation. Such clarification is important in order to prevent overlaps and unnecessary duplication of roles, avoid unnecessary administrative costs and ensure regulatory efficiency and certainty.

6.2. The factors and ideals behind effective restructuring and regulation

Ensuring a reliable and secure energy supply is essential to the socio-economic development of all societies. In a scenario where natural gas supply is increasingly expected to play a key role as a source of fuel for electricity, the effectiveness of applicable institutional and regulatory dynamics in respect of its supply becomes critical. In addition, establishing an instrumentally effective regulatory framework that efficiently enhances the achievement of identified energy policy objectives is equally essential. The discussions and exposition contained in this thesis have sought to make it clear that there is not one single factor or approach to achieve the effective restructuring of a centralised value chain for gas to power towards a competitive, secure and sustainably decentralised one. Rather, it appears there is a matrix of factors, hybrid of paradigms and models that should take due cognisance of the environment and socio-economic context in which the value chain is being developed.

Either in the context of a fully liberalised market-based approach or in the context of a centralised state-controlled approach to resource allocation and governance of gas supply, ‘regulation’, as considered in this thesis, plays an instrumental role. However, to be effectively instrumental, certain uniform factors and features should be incorporated in the regulatory and institutional scheme. The main point to emphasise here is that the applicable framework for regulation should be instrumentally effective. Baldwin, Cave and Lodge⁸⁸⁶ highlight five instructive benchmarks for measuring the quality of a regulatory framework.

⁸⁸⁶ Baldwin, Cave & Lodge (n4), pp. 25-39; Eisen et al. (n4), pp. 543-548.

These are as follows:⁸⁸⁷ (i) a legislative mandate; (ii) the accountability and responsiveness of regulatory institutions; (iii) due process as well as fair, accessible and open procedures; (iv) expertise and specialised knowledge of the regulatory institutions; and (v) efficiency, in the sense that laws and regulations are being implemented in a manner that requires the least amount of inputs and costs vis-à-vis its productivity and dynamism.

In a similar vein, the OECD's 'Guiding Principles for Regulatory Quality and Performance' (2005) is also worth noting, and provides that 'good regulation' should: (i) serve clearly identified policy goals, and be effective in achieving those goals; (ii) have a sound legal and empirical basis; (iii) produce benefits that justify costs, considering the distribution of effects across society and taking economic, environmental and social effects into account; (iv) minimise costs and market distortions; (v) promote innovation through market incentives and goal-based approaches; (vi) be clear, simple, and practical for users; (vii) be consistent with other regulations and policies; and (viii) be compatible as far as possible with competition, trade and investment-facilitating principles at domestic and international levels.⁸⁸⁸

Such highlighted factors, guiding principles and benchmarks are undeniably useful in making judgments on the legitimacy or justification for public support for introducing restructuring or reformative laws and regulations. However, over-reliance on such benchmarks may become problematic due to challenges such as determining the acceptable trade-offs between the various issues and benchmarks considered, as well as their applicability in different jurisdictions and socio-political contexts.⁸⁸⁹ As Baldwin, Cave and Lodge rightly conclude, what is perhaps more important is the ability to deal more rigorously with the trade-offs between objectives and values, as well as establishing concepts and processes that enable the assessment of the performance of both the regulatory regimes and regulatory improvement tools, policies and institutions.⁸⁹⁰ Therefore, it is argued here that as far as energy supply laws and regulation are concerned, it is relevant to focus more on the concept of 'instrumental regulation' or the instrumental effectiveness of the relevant law and

⁸⁸⁷ Although all five elements have their limitations as benchmarks of an effective and good regulatory framework, they constitute an instructive and useful set of criteria for evaluating the quality and legitimacy of law and regulation. See Baldwin, Cave and Lodge (n4).

⁸⁸⁸ See also the Principles of Good Regulation in Table I and the UK's DBIS (n91) on principles of 'Economic Regulation' discussed above.

⁸⁸⁹ Baldwin, Cave & Lodge (n4), pp. 34-38.

⁸⁹⁰ Ibid.

regulation. Such a concept considers laws, regulations and institutions dealing with the governance and allocation of energy resources as means by which to achieve defined policy and socio-economic objectives.

6.3. Concluding statements

'It is not that humans have become any more greedy than in generations past. It is that the avenues to express greed [have] grown so enormously.' Alan Greenspan ex-US Federal Reserve Chairman⁸⁹¹

'[C]hallenges relating the legal and institutional inefficiencies, inconclusive structural reforms and consequential legal uncertainties, insecurity and conflict, limited regional cooperation and cross-border resource and infrastructural development have significantly hindered the economic utility potential of... hydrocarbon resources. *These challenges directly or indirectly limit the development of domestic energy markets and regional integration which is required for reliable and affordable energy supply and consequently enhancement of economic growth and standard of living.* As a worthwhile policy thrust in the development and utilisation of petroleum resources.... *security of supply implies an understanding of the importance of energy resources because they are vital for the functioning of the economy and the development and well-being of the people.* It implies the understanding that energy security is important because the inability of a state to have access to all the energy required must be avoided as much as possible. It implies an understanding of the fact that the primary importance of an energy resource lies in that fact, and secondarily in its monetary factor as a commodity from which revenue may be derived... there is often the temptation to treat oil and natural gas primarily as foreign exchange earners, with inadequate attention being given to domestic energy [access and supply] needs.'⁸⁹²

The introduction of liberalisation and modern regulatory paradigms to enhance competitiveness and restructure gas supply markets can support competitive markets if the

⁸⁹¹ Emphasis added. See Weaver (n41), p. 28; Bill Goldstein, 'When Greed Was a Virtue and Regulation the Enemy', *New York Times*, 21 July 2002.

⁸⁹² Emphasis added. See Omorogbe and Oyewunmi (n182) in 'OGEL Special Issue on Oil and Gas Law and Policy in West Africa: Editorial'.

infrastructure really becomes a natural monopoly. As discussed above, opening the upstream and downstream markets (assuming they are not already genuinely open) to competition favours infrastructure investments. Additionally, access regulation apparently alters the investment behaviour of both incumbents and new entrants, whether from the public or the private sector. Therefore, offering adequate incentives and applying an adequate level of regulation as and when necessary appears rational. This study finds that developing competitive markets or industries in network-bound sectors like gas and electricity is not mutually exclusive to the central objective of achieving security of supply in the sense of having reliable access to sufficient energy resources at reasonable prices for a foreseeable future, in which risk(s) of major disruptions are eliminated or effectively mitigated. Often the missing link has been the establishment of an effective, instrumental and responsive regulatory and institutional framework.

In a gas-to-power value chain context, there are obvious arguments for and against both centralisation based on the traditional paradigms and decentralisation based on the modern paradigms of restructuring and regulation. Experiences in the US and UK as to the perceived costs and risks imposed by full liberalisation and, in the case of the US, deregulation, as discussed herein, suggest that there are avenues available to mitigate and instrumentally reallocate such costs and risks in a just and reasonable manner. The main question has always been that of the presence or absence of efficient and effective institutions. The fact that restructuring initiatives in developed economies like the US, UK and the EU reveal an evolving inclination towards ‘re-regulation’ or regulation through specialised state-guided yet market-friendly institutions is an obvious trend noted during the course of this project.

Even though the path towards economic restructuring and liberalisation is aimed at minimising misguided government interference in order to achieve greater market efficiency and competitiveness, the State still generally holds on to regulatory, policymaking, oversight and governance roles to varying degrees. This is especially true in the context of energy production and supply due to the peculiar features and strategic economic and social importance of the industry.⁸⁹³ However, this thesis contends that competition among rent-seeking private investors, while imperfect, may offer a better means of pricing and resource allocation in an energy market context than regulation by rent-seeking politicised government

⁸⁹³ Talus (n29), pp. 269-285. See also Oyewunmi (n5).

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officials in an opaque regulatory and business environment. Liberalisation or economic restructuring of energy supply markets should not be approached merely as an end or an event but rather as a means to an end or, at best, a process for developing greater regulatory effectiveness.