A Political Economy Analysis of Liquid Fuel Production Incentives in South Africa

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Abstract

The purpose of this study is to analyse the development of South Africa's liquid fuels industry from 1930s to the present and the various ways in which the state has extended subsidies and other measures of support to liquid fuels producers. The nature and extent of government support to the South African liquid fuels industry has remained hidden for many years, due to the veil of secrecy surrounding the industry prior to the country's transition to democracy. The study expands past analyses to identify and estimate the magnitude of subsidies to liquid fuels production in South Africa in the present. Using the historical institutional approach, the study then places these measures of support in the South African political economy environment so as to understand the institutional barriers to their reform. In doing so, the study sheds light on the drivers informing the endurance of the liquid fuels subsidy regime and state support to the liquid fuels industry following the transition to democracy.

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I. Introduction

The nature and extent of government support to the South African liquid fuels industry has remained hidden for many years, due to the veil of secrecy surrounding the industry prior to the country's transition to democracy. State support to the liquid fuels industry began as a matter of necessity, and was amplified following the United Nation's oil embargo against South Africa. However, the reasons for the endurance of the liquid fuels subsidy regime and state support to the liquid fuels industry following the transition to democracy are not as easily determined.

This study provides an exposition of the subsidies to liquid fuels production and other favourable benefits to the liquid fuels producers, both past and present. The importance of such a task cannot be overstated in light of the Group of Twenty's pledge to phase out inefficient fossil fuel subsidies[1] (G20, 2009: 3). However, subsidies to fossil fuel producers can be conferred in a variety of ways. That this is the case complicates any attempts to identify and reform these financial support measures as some measures are more implicit or hidden than others. Therefore, adopting a clear definition of what constitutes a subsidy is an important first step in identifying and reforming these subsidies.

Additionally, it is necessary to delve deep into the history of the industry to understand why these producers continue to receive various measures of support from the South African state. Such an investigation will highlight the institutional, political, and economic factors impacting on the creation and maintenance of these institutions, thereby highlighting important barriers to subsidy reform.

As the South African state continues to make important decisions regarding South Africa's energy future, it is important to understand the ways in which the liquid fuels industry has historically benefited from significant state assistance. Such an investigation will highlight the reasons for the maintenance of the liquid fuels subsidy regime and state support to the liquid fuels industry, despite the major political change represented by the end of apartheid and subsequent transition to democracy.

[1] South Africa is a G20 member. Interestingly, South Africa is one among a number of countries in the G20 to have claimed that the country does not have any fossil fuel subsidies (van Asselt & Skovgaard, 2016: 279).

1.1. Research Problem

The research problem addressed by this study concerns the presence of favourable regulations and subsidies to liquid fuel production in South Africa. This project also addresses the ways in which these financial and other benefits exist as a result of the structure of relationships between the South African state and liquid fuels industry. Indeed, it is a contention of this study that deliberate investigation into this issue is necessary as the liquid fuel production subsidies presently in place are not once-off occurrences, but are part of a longer history of state support to the liquid fuels industry. This support has continued despite major political change in the country.

Where the state has made a concerted effort to expand renewable energy generation, exploring the extent of subsidies and other support measures to the liquid fuels industry is useful as it sheds light on the formal and informal institutions, which undermine those efforts. Indeed, production subsidies encourage the extraction and production of liquid fuels to be used in other processes, such as in electricity generation[2]. In the case of electricity production, diesel consumed at two of Eskom's diesel power stations, Ankerlig and Gourikwa, benefits from further subsidies (Burton, Lott and Rennkamp, in press). The implication of this fact is that these subsidies may distort cost comparisons between electricity generated from diesel versus electricity generated from renewable energy resources. Furthermore, the South African government has pledged to reduce its greenhouse gas emissions according to a peak-plateau-decline scenario. This scenario has been established in South Africa's National Climate Change Response White Paper, which outlines a strategy to respond to climate change and transition to a low carbon economy (Department of Environmental Affairs, 2010). Therefore, it is necessary to shed light on the political economy environment that undermines these efforts by supporting high-carbon development

1.2. Research Questions

This study's research question investigates why the liquid fuels subsidies regime and state support to the liquid fuels industry have not changed despite South Africa's transition to democracy. Key to this aim is understanding how the core institutions structuring the relationships between the state and liquid fuels industry were developed – often to the benefit of liquid fuel producers – and how these institutions have been sustained. As evidence of the maintenance of these institutions, the

[2] Eskom receives a full fuel levy rebate on diesel consumed to generate electricity at plants that have an installed capacity of 200 MW or more (Organisation for Economic Cooperation and Development, 2015: 128).

final part of the analysis explores the magnitude of subsidies and other support measures extended to liquid fuel production in South Africa. In doing so, the present study draws on insights from historical institutionalism and political economy so as to understand the ways in which the present state of the South African liquid fuels industry is informed by the origins and development of its institutions.

1.3. Literature Context: Historical Institutionalism

The research study uses the historical institutional theoretical approach in order to analyse the policy and regulatory developments in South Africa's liquid fuels industry. Historical institutionalism is a theoretical approach used to understand and explain institutional inertia and change. The approach has primarily been used to explain institutional inertia and change in developed countries in the global north (Mahoney & Thelen, 2010). Additionally, historical institutionalism has often been used to understand the historically grown relationships between industries and government (Streeck & Thelen, 2005). Key concepts in historical institutionalism include institutional lock in, path dependency, sunk costs, institutional conversion and critical junctures and are instrumental in accounting for institutional endurance and change. These concepts will be further addressed in the literature review in Chapter Two.

1.4. Definitions

1.4.1. Defining Liquid Fuel Production

Liquid fuel production refers to production occurring in the liquid fuels sector. Included in this definition is access, exploration and appraisal, development, extraction, preparation and transport of liquid fuel resources, plant construction and operation, distribution and decommissioning (Bast, Doukas, Pickard, van der Burg & Whitley, 2015: 9).

1.4.2. Defining Subsidies

The study used the World Trade Organisation's definition of subsidy, as described in the Agreement on Subsidies and Countervailing Measures, as a starting point for defining subsidies. According to the Agreement, subsidisation confers a benefit to some entity and involves 'a financial contribution by a government or any public body within the territory of a Member…or price support in the sense of Article XVI of GATT 1994' (World Trade Organisation, 1994: 229).

The Organisation for Economic Cooperation and Development's 'market price transfer' is also included in this definition. In South Africa, these are transfers from consumers to producers of liquid fuels resulting from the regulated price of petroleum (OECD Secretariat, 2010: 19). A similar approach to defining fossil fuel subsidies has been outlined by the Global Subsidies Initiative (GSI, 2010b).

1.5. Methodology

The study reviews the development of the fossil fuel industry in South Africa in relation to the state so as to understand the way in which these relationships have historically conferred financial and other benefits to liquid fuel production. The project is primarily qualitative in nature and employs secondary research methods. In doing so, the project synthesises and analyses information and data collected from primary and secondary resources. The historical institutional approach is used to understand and explain the empirical evidence. The project also entails a quantitative component, using the OECD's method of estimating market price transfers.

1.6. Chapter Outline

The project has been laid out in the following way: Chapter Two reviews the literature relevant to the research question. Chapter Three details the research methodology used in the study. Chapter Four analyses the historical development of the liquid fuels industry, drawing on the historical institutional approach and insights from political economy to explain the endurance and change of institutions. Using the historical institutionalist approach, Chapter Five investigates the major instances of institutional inertia and change in the liquid fuels industry. The final chapter of the analysis, Chapter Six, investigates subsidies to the production of liquid fuels in South Africa so as to identify the actors benefiting from financial support from the state. Chapter Seven highlights the research findings and discusses their significance. Finally, Chapter Eight concludes the research project, summarising major findings and suggesting areas for future research.

II. Literature Review

2.1. Theoretical Literature: Historical Institutionalism

The research question addressed by this study concerns the reasons for the endurance of state support to the liquid fuels industry following South Africa's transition to democracy. In addressing this question, it is necessary to understand the role of institutions. Institutions can be defined in a

variety of ways. The narrowest definition of institutions refers to the collection of governmental institutions, including the regulatory, administrative and electoral rules that establish the process of policy-making in a polity (Ikenberry, 1994: 12). Institutions establish rules and structure incentives in human interaction, which create an environment that either constrains or enables certain actions (North, 1990; 4; Geels, 2004: 907). These political and social institutions are often enduring and commit the future path of policy, and therefore have considerable impact on the development of a state. This is particularly so in the case of energy-related institutions due to the long lifetimes of energy infrastructure. Similarly, institutions matter for the understanding of the ways in which the South African liquid fuels industry has benefited from favourable regulations, subsidies and other benefits from the state. The historical institutional approach, which seeks to understand institutional inertia and change, is useful in understanding and explaining the development of the South African liquid fuels industry and its related policies and regulations. This approach is particularly useful given that it has often been used to understand and explain the historically developed relationships between the state and industries (Streeck & Thelen, 2005).

The historical institutional approach sheds light on both the emergence of institutions as well as their evolution. The approach is concerned with the way in which institutions are situated in time and how these institutions can assist in understanding political outcomes. The concepts of path dependency, lock in and sunk costs are mechanism that generate institutional inertia and contribute to the ability of the historical institutional approach to account for the way in which institutions may remain unchanged. Alternatively, the concepts of institutional conversion and critical junctures assist the historical institutional approach in accounting for institutional change. Therefore, historical institutionalism is a useful approach for this study, because it helps to explain the development of energy policy and regulations in South Africa.

The historical institutional approach draws on the concept of path dependence in order to explain institutional inertia. Margaret Levi (1997: 28) captures this concept when she states, ‘path dependence has to mean… that once a country or region has started down a track, the costs of reversal are very high. There will be other choice points, but the entrenchments of certain institutional arrangements obstruct an easy reversal of the initial choice’.

There are a number of precursors to path dependency, the first of which is that, for institutions which entail large start-up costs, the likelihood of reversion is low once that institutional path has

been chosen. The second precursor is the learning effect produced as continued use can lead to more efficient processes and higher returns. Thirdly, path dependent processes arise as a result of coordination effects, referring to the way in which the benefits experienced by individual actors are enhanced if they come together with other actors to coordinate activities. The fourth precursor is adaptive expectations, referring to the way in which actors adapt their actions based on their expectations regarding the actions of other actors (Pierson, 2004: 24-25).

Additionally, drawing on the broader institutionalist literature, this study also argues that institutional path dependence has a discursive aspect, referring to the narratives used to shape, explain and justify policy paths (Low, Gleeson and Rush, 2005: 392; Curtis and Low, 2016: 195). This distinction is important in analysing the development of South Africa's liquid fuels industry due to the enduring narratives around energy security.

For the historical institutionalist, path dependence is a key causal mechanism determining institutional outcomes (Capoccia & Kelemen, 2007:342). Further, rather than correcting failures in policy so as to pursue an alternative path, governments frequently exacerbate and reinforce them, such as by creating complementary institutional arrangements. That this is the case demonstrates that path dependent processes do not only occur at an individual level, but at a macro level involving, "configurations of complementary organisations and institutions" (Pierson, 2004: 27).Furthermore, where complementary institutional arrangements exist, the value of each institution is enhanced by the presence of others, a corollary of which is that the removal of one complementary institution detracts from the value of others (Pierson, 2004: 286). In the case of fossil fuel subsidies, this is often through the provision of additional subsidies and other favourable institutional policies in support of pre-existing institutions (Ksomo, 1987). It will be important to gauge the extent to which these processes appear in the development of policies and regulations in South Africa's liquid fuels industry.

Institutional 'lock in' is a dominant theme in the historical institutional literature and is used to account for institutional stability or resilience which results from increasing returns and path dependent processes of institutions (Garud, Kumaraswamy and Karnoe, 2010: 765; North, 1990: 7; Ikenberry, 1994). Apart from the way in which path dependent processes contribute to institutional lock in, Ikenberry notes that one way in which this may occur is as a result of the way in which, 'institutions tend to establish or codify a particular distribution of power and authority,

which tends to reproduce itself' (1994: 20). Indeed, power relations and interests that develop around institutional structures make these difficult to change and can sustain them even after the original interests that led to their creation have changed (Moore, 1996; Stinchcombe, 1968: 108-118). Consequently, a state of institutional inertia and lock in arises when the institutions in place serve the interest of key actors. It will be important to investigate the extent to which this argument holds in the case of the South African liquid fuels industry, where the industry's initial development reflected considerable favouritism to the country's synthetic fuels producers.

An alternative explanation for the cause of institutional lock in argues that institutions create 'sunk costs' which make it difficult to pursue an alternative path (Stinchcombe, 1968: 122-123). This view is also reflected in the conference paper by Ikenberry (1994: 20). The implication of this fact is that the new institution must be perceived as substantially greater than the old structure in order to compensate for the 'relative weakness of the newer social structure' (Ikenberry, 1994: 20). Stinchcombe refers to this issue as the 'liability of newness' (Stinchcombe, 1965: 148). This concept appears applicable to the issue of industry regulation, particularly in relation to the uncertainties involved in deregulating the liquid fuels industry.

Alternatively, institutional conversion is presented in the historical institutional literature as an important change mechanisms which generates evolution of institutional structures. According to this concept, institutional arrangements which are formulated at one historical moment may be transformed and redirected to respond to different needs at a later point in time (Thelen, 2002: 103). Therefore, the importance of this concept is that it highlights the role and importance of agency in achieving institutional change. One process through which this can occur is by incorporating previously excluded actors who, rather than merely adapting to the prevailing order, alter it in some way. These actions then set the institution – the administrative or regulatory rules ordering society – on a new trajectory. Interestingly, it seems that this concept also accounts for institutional inertia. This is because, while the institution may undergo minor alterations to the way in which it operates or to its mandate, the broader institution itself remains.

In accounting for institutional change, 'critical junctures' is an additional mechanism of change which derives from the historical institutional literature. Critical junctures are periods of institutional flux that arise in the midst of long periods of path-dependent institutional inertia,

thereby creating openings for institutional change[3]. A number of major events may give way to critical junctures, including political, financial, or economic crises. During these times, 'structural (i.e. economic, cultural, ideological, organisational) influences on political action are significantly relaxed for a relatively short period of time' (Hogan, 2006: 657). Where an institutional arrangement no longer serves actors' interests following the critical juncture, institutional change is likely to be pursued. This also relates to the concept of 'policy windows,' which refer to 'windows of opportunity' to achieve changes in policy (Marquard, 2006: 28). Policy windows are created when political changes – such as, regime change, elections or budgeting processes – focus attention on specific problems and create a favourable environment for policy change.

In terms of understanding fossil fuel incentives, historical institutionalism offers a number of key insights. Fossil fuel subsidies are often 'rooted in a political logic that is often difficult to alter' (Victor, 2009: 7). The historical institutional approach sheds light on this political logic given its attention to the historical development of institutions and the interests that develop around these institutions. For this reason, it is also useful for understanding why these institutions are not easily altered as it emphasises the factors which cause institutional inertia.

In the South African liquid fuels industry specifically, historical institutionalism may provide insight into the major policies and regulations that have been used to support liquid fuels producers. The concepts of institutional lock in, sunk costs and path dependency will be useful for understanding and explaining the maintenance of policies and regulations in the liquid fuels industry. The ways in which the interests of relevant actors impact on these processes will also be considered. In accounting for institutional change, the concept of institutional conversion sheds light on the inclusion of Black Economic Empowerment agendas in the regulatory process following the transition from apartheid. Black Economic Empowerment first appeared, albeit in a limited way, in the African National Congress's (ANC's) Mineral and Energy Policy Document. This document called for retail regulation encouraging service station ownership by historically disadvantaged South Africans (Marquard, 2006: 323) and this goal was later captured as a

[3] Capoccia and Kelemen (2007: 350) note that historical institutionalists commonly treat critical junctures as, 'short phases that may actually last for a number of years.' Therefore, a critical juncture is not necessarily a discrete event but rather a collection of related events within a given period.

milestone in the 1998 White Paper on the Energy Policy of the Republic of South Africa (Department of Minerals and Energy, 1998: 81).

Furthermore, the concept of a critical juncture is important in terms of describing the potential for institutional change that was produced by the end of the apartheid regime and subsequent transition to democracy. Indeed, the significance of a critical juncture lies in the fact that it may assist in discrediting pre-existing institutional arrangements (Cortell & Petersen, 1999; Haggard, 1998). As the apartheid state was extensively involved in the liquid fuels industry, it would not be unreasonable to expect that the transition to democracy would result in change to the institutions structuring the liquid fuels industry.

While historical institutional concepts have frequently been applied to energy sector development in a number of countries (Unruh, 2000; Abdul-Manan, Baharuddin & Chang, 2015), a review of the literature revealed only a few studies which used the historical institutional approach to understand the impact of fossil fuel subsidies and other incentives. One such example is a study into the development of the Iranian energy sector, which found that the policy of subsidising petroleum products during the Iran-Iraq war has continued long after the end of the war, leading to an increase in electricity and natural gas consumption (Mirsaeedi-Farahani, 2015: 69). The present study intends to build on the limited literature which applies the historical institutional framework to developing economies, as it has predominantly been used to study developed countries in the global north (Mahoney & Thelen, 2010).

However, where historical institutionalism has been applied to understand the endurance of energy subsidies and other institutions, the focus has largely been on consumption subsidies rather than production subsidies (Mirsaeedi-Farahani, 2015). The contribution of the present study lies in its application of historical institutionalism to the endurance of energy subsidies and other institutions benefitting fossil fuel producers. Such a focus is necessary in order to shed light on the hidden incentive structure offering subsidies and favourable regulations to the production of fossil fuels. Identifying these hidden incentives is important as they undermine the government's stated policy objectives in favour of removing certain liquid fuels subsidies and shifting towards renewable energy, as stated in the 1998 White Paper on the Energy Policy of the Republic of South Africa and reiterated in the 2011 White Paper (Department of Environmental Affairs, 2011). These

subsidies and favourable regulations have been embedded in the South African economy for decades and are resistant to change.

In investigating why state support to the liquid fuels industry and the liquid fuels subsidy regime have continued despite major political change, the historical institutional approach offers valuable insight. The strength of the approach in this regard relates to its ability to account for both institutional inertia and change. In explaining the ways in which the policies and regulations in the liquid fuels industry have become entrenched over time, the concepts of institutional lock in, sunk costs and path dependency will be useful. Alternately, in understanding and explaining institutional change, the concepts of institutional conversion and critical juncture will shed light on the factors which provide the context for change, particularly following the end of the apartheid regime. In doing so, this study will contribute to the limited literature that applies historical institutionalism to understanding institutions in developing countries, as well as the limited literature using this approach to understand and explain the endurance of subsidies and favourable regulations to the production of liquid fuels. The following section reviews the literature on fossil fuel subsidies and examines challenges in defining subsidies.

2.2. Theoretical Literature: Subsidies

It is also important to review the literature related to fossil fuel subsidies so as to determine the most appropriate means of defining these subsidies. However, the precise definition of a subsidy is difficult to pin down as there is no globally accepted definition of a subsidy (Whitley, 2013: 4; van Asselt & Skovgaard, 2016: 270). International organisations adopt different definitions of subsidies, which may vary according to their primary targets for support as well as their means of transfer. As the measures adopted by states to support fossil fuel production are often a reflection of distinct political and economic environments, it is necessary that any definition be sensitive to the process of subsidisation in a given context. While there is intellectual contestation over what constitutes a subsidy, the most widely accepted definition is the World Trade Organisation's (WTO's) Agreement on Subsidies and Countervailing Measures (ASCM) as it has been accepted in a multilateral context. It has also been supported following in-depth legal analysis and jurisprudence from the Dispute Settlement Body and the Appellate Body (GSI, 2010: 2). The present study therefore follows much of the international literature on fossil fuel subsidies and adopts the definition of subsidy spelled out in the ASCM. Additionally, the definition of subsidy

has been expanded to include what the Organisation for Economic Cooperation and Development refers to as 'market price transfers,' which have been used to estimate both production and consumption subsidies (OECD Secretariat, 2012: 19). Taken together, these definitions adequately capture the full range of measures used to support fossil fuel production in South Africa.

Identifying subsidies and other support measures to the fossil fuels industry first requires an understanding of the ways in which subsidies are defined. In the ASCM, the WTO establishes the most widely accepted definition of a subsidy. According to the Agreement, the first form in which subsidies may occur are as direct or potentially direct transfers of funds from governments. These include but are not limited to: grants, loan guarantees, provision of loans at below-market rates, and equity infusions. The second category of subsidies refers to government revenue foregone, such as tax waivers or tax deferrals. Also included are goods and services provided by government, apart from infrastructure, at less than market prices. Finally, subsidies may include government support of prices and incomes (WTO, 1994: 229).

This definition aims to identify and stop actions on the part of government that provide unfair advantage and impinge on international trade. However, it is important to recognise that while the definition has a distinct operational purpose concerned with promoting fair international trade, the contents of the Agreement are 'agreed' upon by the members of the WTO. Therefore, the political reality of having to establish a definition that the member states are willing to accept has an impact on the determination of the limits of the definition (Schrank, 2003: 4). As a result, while the definition is used for the purpose of ensuring fair international trade, for other purposes each individual country has the freedom to determine their own definitions of subsidies. This then lays out an important issue for the present study, as it becomes clear that the definition of what exactly qualifies as a subsidy is difficult to pin down.

What is notable about the ASCM definition is that it excludes market price support (MPS), which results in transfers between producers and consumers as a result of any government regulations. However, the inclusion of this measure is important in the context of South Africa. This is because liquid fuels producers have long benefited from supracompetitive prices as a result of regulations determining the price of petroleum products. This then highlights the usefulness of the OECD's producer support estimate (PSE) in terms of addressing the present study's research question. That

is, this indicator captures all forms of subsidisation outlined in the ASCM definition, as well as market price support.

Defining subsidies by combining the ASCM definition with that of the OECD's measure of support is not unfounded. The Global Subsidies Initiative (GSI) does this in their report titled, 'Defining Fossil Fuel Subsidies for the G-20: Which Approach is Best?' (GSI, 2010b). The subsidies captured in this definition can be found in Table 1 below.

Table 1: An Illustrative List of Subsidies to South Africa's Liquid Fuels Industry

Direct transfer or potential direct transfer of funds	Government revenue foregone	Income or price support, or relief from normal costs or procedures
Direct payments	Tax expenditure: reduced tax rates, exemptions, rebates	Above-market rate prices for producers via government regulations or import barriers
Grants	Accelerated depreciation allowances	Other specific regulations resulting in transfers
Guarantees for loans, security or credit		
Government spending on research and development		
Loans provided at rates or under conditions below those that would prevail in a normal market		

(Adopted from Global Subsidies Initiative, 2010b: 4-5)

In terms of answering this study's research question, this approach to defining subsidies highlights the many ways in which liquid fuels production has been subsidised. For instance, it is able to capture the direct subsidies to production which are reflected in the Estimates of National Expenditure. It is also able to account for the indirect tax subsidies which are not reflected in the fiscus but are nevertheless important. Finally, the inclusion of market price support highlights the way in which liquid fuels producers have benefited from market price transfers due to the regulated price of petroleum. As these different means of supporting liquid fuels have been important historically as well as into the present, this definition is therefore sensitive to the development and maintenance of the liquid fuels subsidy regime in South Africa.

In investigating the maintenance of state support to the liquid fuels industry, it is important to understand the various measures of financial support extended from the state to liquid fuels producers. These measures of financial support refer to subsidies to liquid fuel production and can

be defined in a number of ways. The implication of the inability to converge on a definition of 'subsidies' is that it can complicate attempts to identify and measure their value. Accordingly, many studies into the issue of fossil fuel production subsidies have adopted the WTO's definition of subsidies as set out in the ASCM due to the fact that it has been agreed upon by the member states of the WTO. While the present study will adopt a similar approach, it will also include what the OECD calls market price transfers. Such an approach is important as it is able to capture the way in which South Africa's regulated petrol price has conferred subsidies to producers both in the present and historically. Therefore, it is suited to understanding the maintenance of the liquid fuels subsidy regime and state support to the liquid fuels industry following the transition from apartheid.

2.3. Empirical Literature: Studies on Subsidies in South Africa

As the magnitude of fossil fuel subsidies and other support measures in South Africa is underreported and under researched –as will be demonstrated below –research is needed so as to gain a thorough understanding of the production subsidies for liquid fuels annually. Thus far, two studies have undertaken this challenge. The first study investigated subsidies to fossil fuel exploration while the second investigated subsidies to fossil fuel production more broadly. The importance of studies such as these relates to the fact that understanding the scale of support granted to the fossil fuels industry is an important first step towards phasing out these subsidies. The project builds off of these studies into the issue of fossil fuel production subsidies in South Africa. However, the present study departs from the previous studies in two key ways. Firstly, the present study focuses on subsidies to liquid fuels specifically, whereas previous studies have focused on subsidies to fossil fuel production more generally. Secondly, the present study emphasises the importance of historically established relationships and the development of institutions in sustaining these subsidies to liquid fuels producers. In doing so, it sheds light on the factors sustaining the liquid fuels subsidy regime and state support to the liquid fuels industry following the transition to democracy. That is, the study not only quantifies the magnitude of subsidies but also attempts to explain their genesis and maintenance, with a view to understanding options for reform.

A review of the literature on liquid fuels production subsidies in South Africa revealed that very little research has been done in this area. The two studies undertaken in the context of South Africa

were both carried out by the Overseas Development Institute (ODI) and focused on the fossil fuels industry more broadly, as opposed to the liquid fuels industry specifically. While the first study focused exclusively on fossil fuel exploration subsidies (Bast, Makhijani, Pickard and Whitley, 2014), the second study focused on subsidies to the entire fossil fuel production value chain (Bast, Doukas, Pickard, van der Burg and Whitley, 2015).

As previously mentioned, the definition of a 'subsidy' adopted by a study has implications for the types of subsidies and other support measures captured by that study. The two ODI reports were similar in that both studies adopted the ASCM subsidy definition. As a narrower definition of what constitutes a subsidy, a major concern in using this definition is that important measures of support to the production of fossil fuels were not captured. That is, the studies did not capture the OECD's measure of market price transfers. Therefore, the studies provided a useful starting point in terms of understanding the importance of the definition adopted as well as the subsidies that had already been captured and reported. However, the reports were limited in their ability to adequately capture the full range of subsidies provided to liquid fuel production in the South African context. The ODI's approach in this regard is informed by the fact that narrower definitions are more easily agreed upon and the organisation is specifically concerned with promoting subsidies reform in the G20 countries.

Despite the narrower range of subsidies identified by the studies, they make an important contribution to the international literature on fossil fuel subsidies. This is because identifying subsidies is an important first step in phasing them out. Research has shown that few governments are aware of the magnitude of the subsidies they have conferred, often due to the failure to quantify each form of support (Whitley, 2013: 7). Additionally, where the data does exist, it is often spread across different levels of government and not available to the public. The implication of these information gaps is a lack of knowledge about the scale of the problem and the need for reform. This is particularly problematic due to the economic and social opportunity costs of these subsidies as they may produce a fiscal burden and crowd out spending on development-related programmes such as public health or education (Whitley, 2013: 15).

Finally, as the studies only reported on subsidies within a limited range of years, they also only offered a brief glimpse into the issue of fossil fuel production subsidies. Consequently, the studies offered limited insight into the political economy in which these subsidies exist or the ways in

which some of these subsidies have persisted over time[4]. That is, unlike the present study, these studies do not analyse the interaction of political and economic processes in South African society, with a view towards understanding the ways in which the distribution of power and relationships between different actors impact on various policy processes and outcomes. Therefore, the contribution of the present study is that it identifies a broader range of subsidies to the production of liquid fuels in South Africa. Furthermore, it places these subsidies within a historical context and their political economy environment so as to identify the institutional barriers to their reform.

In doing so, the present study is also novel in that it attempts to link the question of historical and present support to the South African liquid fuels industry with the broader international debate about fossil fuel subsidies. Some measures of support, such as direct transfers, are easily identified as subsidies. Alternatively, some measures of support, namely those that arise as a result of regulations, are more implicit and not as easily identified as subsidies. In using the OECD's measure of market price support, which is concerned with transfers that occur as a result of policies and regulations, the present study highlights the way in which historical and present regulations in the industry have resulted in transfers, or subsidies, to liquid fuels producers, although they have not often been conceived as such.

There has been limited research into South Africa's fossil fuel production subsidies. The two studies that have been undertaken, while offering a useful starting point, are limited in the insight that they offer to the present study. This is in large part informed by the subsidy definition adopted by the studies as the ASCM subsidy definition is incapable of capturing the full range of support offered to South Africa's liquid fuels industry. This then highlights the importance of incorporating the OECD's measure of market price support, as referred to in the previous section of this literature review. By focusing on the liquid fuels industry specifically, the present study offers deeper insight into South Africa's liquid fuel production subsidies. The decision to focus on the liquid fuels industry specifically was also due to scope constraints, but further work on subsidies to the electricity and coal industries can be found in Burton, Lott and Rennkamp (in press). Furthermore, the major contribution of the present study is the way in which links support to liquid fuels to the broader debate around fossil fuel subsidies and uses a historical analysis to highlight the reasons

[4] It should be noted that this was not the intention of these reports, which were compiled for the G20 countries so as to identify fossil fuel subsidies.

that support to the industry has endured, thereby shedding light on the institutional barriers to their reform. The study therefore accounts for the endurance of the liquid fuels subsidy regime and state support to the liquid fuels industry following the transition from apartheid.

III. Methodology

The research proceeded in a series of steps. The project identified and collected relevant data and information from a variety of sources, while also noting any relevant data constraints. This stage relied on secondary research methods. After this step, the available data and information were organised in accordance with the determined outline. The data and information were then analysed using the historical institutional theoretical approach. During this step, quantitative data in the 2009-2015 period were also converted into real values so as to allow comparison between years. Finally, the estimation of market price transfers were calculated in accordance with the OECD's method of calculation, as outlined below. These project stages were used to shed light on the research question concerned with the maintenance of the liquid fuels subsidy regime and state support to the liquid fuels industry.

3.1. The State of the Data: Availability and Constraints

A major data constraint of this study is that while it seeks to explore the magnitude of support extended to liquid fuel production, much of the data on that support is unclear or unreported. Unclear and unreported data on fossil fuel subsidies is a common issue and is widely acknowledged in the international fossil fuel subsidy literature (Whitley, 2013: 7). Therefore, while data on direct subsidies are available and appear in South Africa's Estimates of National Expenditure, indirect subsidies are seldom clearly reported on. This is particularly the case when calculation requires company-specific data from liquid fuels companies. Therefore, where necessary data is available, indirect subsidies have been estimated. However, other indirect subsidies which are unable to be estimated due to a lack of data have instead been listed. Listing these subsidies and support measures is valuable in that they shed light on important areas for future research.

Consequently, it is important to note that the subsidies estimates reported in this study are likely to be underestimates. This is both due to lack of detailed reporting and public access to financial information as well as making conservative assumptions where calculations are made.

3.2. Data Collection

The project's primary method of data collection was by use of secondary research methods. That is, the project analysed data and information gathered from a wide range of sources. These sources include government documents, technical reports, statistical databases, scholarly journals, books, company annual reports and news articles.

A number of scholarly journals and books were used to collect information on the historical institutional approach. These resources were collected from the University of Cape Town's online library database. These resources provided theoretical insight into the approach as well as how the approach has been applied so as to understand and explain fossil fuel production subsidies.

In order to analyse the historical development of South Africa's liquid fuels industry and major instances of change and inertia, the project relied on a number of different sources. Technical reports were particularly important as a few key reports have previously investigated support to the liquid fuels industry and to synthetic fuels producers specifically (Rustomjee, Crompton, Maule, Mehlomakulu and Steyn, 2007; Arthur Andersen, 1995; Trollip, 1996). These reports were identified through advice from other researchers as well as through reading other reports and articles. In most cases, the reports were collected through an online search. Where the reports could not be found online, they were collected by contacting the author directly. These reports not only provide qualitative insight into the historical development of the industry and relationship between actors, but they also provide quantitative insight into instances of support to liquid fuels producers.

Competition Tribunal documents, including the formal report on the proposed merger of Sasol and Engen as well as the transcript hearings, were also used to collect data and information on the history of the industry (Competition Tribunal, 2006). The Competition Tribunal report was identified from other studies and found online while the hearing transcripts were collected via a telephonic request to the Competition Commission. These documents were particularly important in understanding Sasol's role in the industry as well as questions around industry regulation.

Two dissertations were referenced. The first one was a doctorate dissertation concerned with the development of South Africa's energy policy (Marquard, 2006). Similar to the technical reports, this dissertation was used to collect both qualitative and quantitative information on the development of the South African liquid fuels industry. This report was also used to gain an understanding of South Africa's political economy during the industry's early stages. The second

dissertation used was a master's dissertation concerned with the tax regime applicable to the oil and gas industry in South Africa (Futter, 2010). This dissertation was used to collect information on the previously secretive tax regime applicable to the liquid fuels industry prior to 2007. It was also used to understand the ways in which the new tax regime both changed and retained some aspects of its predecessor. Both reports were collected through the University of Cape Town's online library database.

Finally, in order to understand the development of the industry and major instances of change and inertia, government documents were used. These included government policies as well as statements from various government departments. The government documents were collected online through the relevant government departments' websites. These documents were used to understand the content of policies as well as the government offices' positions on different issues.

In some cases, online news articles were used to provide insight into recent developments in the liquid fuels industry's policies and regulations. These articles were identified and collecting using relevant keyword searches. These articles were particularly useful as there are few scholarly articles or technical reports that have looked at benefits to the liquid fuel producers since 2006. Therefore, these articles offered an understanding of more recent developments in the industry.

A number of resources were collected in order to understand subsidies to the liquid fuels industry in the 2009-2015 period. The first two studies were technical reports detailing subsidies to the fossil fuels industry in South Africa. These were collected through the University of Cape Town's online library database. The reports were used as a foundation to understand the issue of fossil fuel subsidies in South Africa.

Various government resources were used to collect data on liquid fuels subsidies. South Africa's Estimates of National Expenditure documents were collected online through the National Treasury's budget archives. The departmental reports elaborating on the relevant departments' estimates of expenditure were collected from each departments' website. These documents were used to identify direct transfers to liquid fuels producers in South Africa. A Department of Energy presentation was used to identify the average cost, insurance and freight price of petroleum in 2012. This document was found online. Furthermore, the average annual value of the basic fuel price in 20112 was found on the Central Energy Fund's petrol price archive (Central Energy Fund, 2012). These sources were used to estimate the value of the market price transfer to Sasol in 2012.

Company reports were collected to understand subsidies to the liquid fuels industry in the 2009-2015 period. The relevant companies' annual reports were also used to identify the flow of funding to the liquid fuels producers. These documents were collected through each companies' annual report online archive. Data on Sasol's production volumes in 2012 were collected from the company's Analyst Books, which were found on the company's online handbook archive.

Finally, inflation data from Business Monitor International was found on the company's database. This inflation data was used to convert the value of subsidies in to real values so as to make them comparable across years.

3.3. Data Analysis

This research project is largely qualitative in nature. In responding to the research question, qualitative data and information on the development of the liquid fuels industry were analysed. This entailed a content analysis of written data identified in the various types of sources outlined in the previous section. The historical institutional approach was applied to the empirical evidence so as to understand and explain the endurance of the liquid fuels subsidy regime and state support to the liquid fuels industry. Particularly useful in this regard were the concepts of lock in, path dependency, perceptions of sunk costs, as well as the effects of vested interests. These historical institutional concepts were used to analyse the processes which contributed to institutional inertia in the liquid fuels policies and regulations. Conversely, the concepts of institutional conversion and critical juncture were applied to understand instances of institutional change by identifying the processes through which institutions underwent alterations or were removed.

The second part of the project is concerned with subsidies to liquid fuels producers in the 2009-2015 period and employed both qualitative and quantitative methods. Similar to the first part, historical institutional concepts were used to shed light on the reasons for which the liquid fuels producers continue to benefit from production subsidies. In this regard, the study analysed the way in which actors' vested interests produced institutional inertia, as well as the relationships between state and industry actors that sustain the subsidy regime.

Inflation data in the 2009-2015 period were also used to analyse data in this section. The inflation data were used to convert direct subsidies in the 2009-2015 period to real values. This allowed the values of the subsidies to be compared across years and allowed these values to be added to find the final value of the subsidies.

In the quantitative section, the OECD's method of measuring market price transfers was used. Market price transfers are found by multiplying the value of the market price differential, or the difference between the domestic and border prices, by the amount of production. This is indicated in the formula below.

Market price transfers = (domestic price – border price) x production volume

As mentioned in the previous section, the average annual cost, insurance and freight price of petroleum was identified in a Department of Energy presentation (Mkhize & Maake, 2012). This value was used as the border price, in accordance with the OECD's guidelines to estimate market price transfers for net importers (OECD Secretariat, 2010: 22). The domestic price was found by taking the average value of South Africa's basic fuel price in 2012. Finally, Sasol's production volumes were identified in the company's 2012 Analyst Book (Sasol, 2012: 52). The data on subsidies were used to provide evidence of the continuation of the liquid fuels subsidy regime into the present.

3.4. Conclusion

The project proceeded in a series of phases so as to respond to the research question. In the first phase, secondary research methods were used to identify and collect the relevant data and information. This stage also noted the data availability and constraints. The next phase was concerned with analysing the data and information. The historical institutional approach was applied to the empirical evidence so as to understand the development of the liquid fuels industry and major instances of institutional inertia and change. In order to make sense of the quantitative data, subsidies in the 2009-2015 period were converted to real values so as to allow comparison between years. Finally, the market price transfers were estimated in accordance with the OECD's method of calculating these values. These phases were used to shed light on the maintenance of the liquid fuels subsidy regime and state support to the liquid fuels industry.

IV. Analysis: Historical Development of the Liquid Fuels Industry

In order to understand the liquid fuels subsidy regime and state support to the liquid fuels industry in the present, it is important to begin by studying the liquid fuels industry in the past. Such an approach provides insight into the institutions that comprise the industry and the ways in these institutions which have endured or changed. This approach also explains the causes of these

outcomes. Accordingly, the first chapter of the analysis, Chapter Four, begins by outlining the important actors and institutions in the liquid fuels industry. The chapter then focuses on the industry's policy and regulatory developments since the 1930s. The historical institutional approach is used to explain the drivers of these institutional outcomes. Next, Chapter Five analyses major instances of institutional inertia and change following the transition to democracy. Drawing on insights from the historical institutional approach, the chapter aims to understand whether these institutional changes to the liquid fuels regulatory regime were in fact profound changes or whether they were more incremental changes that retained the fundamental aspects of the former institutions. The final chapter of the analysis, Chapter Six, delves deeper into South Africa's liquid fuels production subsidies in the present. The chapter aims to understand which actors benefit from the liquid fuels subsidy regime as well as how these actors benefit. Ultimately, Chapter Six aims to provide evidence of the maintenance of the liquid fuels subsidy regime to the present by identifying and measuring the value of these subsidies. These chapters will answer the research question by identifying the factors contributing to the endurance of the liquid fuels subsidy regime and state support to the liquid fuels industry following South Africa's transition to democracy.

4.1. The Liquid Fuels Industry: Key Actors and Institutions

Researchers and regulatory authorities alike have for many years been concerned with the way in which the South African liquid fuels industry developed with significant assistance from the South African government (Rustomjee et al, 2007; Competition Tribunal, 2006; Marquard, 2006). These efforts have been informed by a number of reasons, such as investigating the competitive environment of the industry as well as understanding the policy developments for academic and other interests. While the early stages of the industry were dominated by international oil majors, the state's emphasis on local production gave way to the establishment of a local synthetic fuels producer, Sasol. To ensure the growth and success of this formerly state-owned producer, as well as that of the industry more broadly, the South African government established a number of institutions whose aims were to provide direct assistance to the producers. In some cases, these institutions were charged with coordinating policy development. The later stages of development were defined by an increase in the state's efforts to promote liquid fuels exploration and production. This led to the establishment of the state-owned exploration company and a gas-to-liquids producer, as well as subsequently consolidating disparate companies into a single coherent entity. Using the historical institutional approach to understand and explain the development of

the major industry and state actors, this section argues that early developments in the liquid fuels industry set the stage for the ongoing liquid fuels subsidy regime and state support to the liquid fuels industry more broadly.

4.1.1. 1940s to 1970

In its early stages of development, the South African liquid fuels market was dominated by four international oil companies: Caltex, Shell, Mobil and BP (Competition Tribunal, 2006: 18). Prior to the commissioning of Mobil's Genref refinery in 1954, South Africa had only limited refining capacity. This refining capacity was through the synthetic fuels refinery produced at the South African Torbanite Mining and Refining Company in Boksburg (SATMAR) (Rustomjee et al, 2006: 57). Government support to the manufacturing of synthetic fuels began around this time, as SATMAR enjoyed subsidies in the amount of approximately 20% of the price paid by fuel consumers. In addition, the market had to absorb all of SATMAR's volumes, although these volumes were comparatively negligible at the time (Rustomjee at al., 2006: 72; Arthur Andersen, 1995: 33; Trollip: 1996: 4-27). Rustomjee et al (2006: 72) note that the subsidies provided to SATMAR by the South African government established a starting point for future financial support to Sasol and Mossgas (now, PetroSA).

As production volumes from SATMAR were relatively negligible, a majority of demand for liquid fuels in South Africa was met by imports. Accordingly, the other oil companies operating in the market imported refined product and distributed the product through their respective branded retailers. In line with historical institutionalist thinking, 'this early reliance upon imports set the basis for future subsidisation and support for locally refined or manufactured liquids' (Rustomjee et al, 2007: 57). Indeed, the government prioritised the search for crude oil and provided favourable fiscal terms in order to encourage the private sector to explore for oil and gas. This claim will be investigated further in subsequent sections of the study.

In 1947, in an attempt to reduce South Africa's dependence on imported fuels, the South African government took the decision to pursue synthetic fuels manufacturing (Rustomjee et al, 2007: 60). Legislation was drafted in order to facilitate this goal and, in 1950, the South African Coal, Oil and Gas Corporation Ltd (Sasol) was founded by the state-owned Industrial Development Corporation (IDC). Subsequently, the Sasol 1 plant was commissioned in Sasolburg in 1955, using the Fischer Tropsch and Kellogg technologies for the production of oil from coal. From the outset,

Sasol 1 production benefited from what was effectively a subsidy[5] as its products enjoyed tariff protection in the amount of 20% of the price of fuel. This support was similar to that previously received by SATMAR (Marquard, 2006: 267; Rustomjee et al, 2007: 60). Sasol also enjoyed upliftment agreements termed the Main Supply Agreements (MSA). These agreements stipulated that 100 percent of the plant's production would be uplifted by the other oil companies (OOCs) at import parity pricing.[6]

Thus it can be seen that from the company's beginning Sasol benefited from extensive support from the state. Indeed, Sasol's 'founding fathers' argued that the synthetic fuels producer was 'of such national importance' that the state should make any concessions necessary to ensure the economic health of the industry (Sparks, 2016: 717). While these agreements will be discussed in more depth below, it is necessary to note that these agreements were 'effectively a government-brokered and sanctioned form of private regulation' (Competition Tribunal, 2006: 19). It is also important to note that the National Party was voted into power in 1948. The significance of this is related to the fact that it was this ruling party that subsequently developed close state-industry ties and extended support to the liquid fuels producers, as will be demonstrated throughout the study. This was perhaps an important stage in the development of South Africa's modern political economy, as the state significantly expanded its role of guiding and protecting the liquid fuels industry more broadly, but domestic producers more specifically.

Also in the early 1950s, Mobil's Enref refinery was commissioned in Durban. Sasol 1 was commissioned the following year, as previously discussed. In the 1960s, the Calref refinery, owned by Caltex, and the Sapref refinery, a joint venture between Shell and BP, were subsequently commissioned in Cape Town and Durban, respectively (Marquard, 2006: 250).

In 1969, Natref was formed as a partnership between Sasol, Total[7] and the National Iranian Oil Company (NIOC). The aim of constructing Natref was to ensure the security of Iranian crude oil supplies to South Africa (Rustomjee et al, 2007: 58). Given the need to ensure the supply of crude

[5] The WTO was not yet in existence and the General Agreement on Tariffs and Trade not cover subsidies. However, under the ASCM definition of a subsidy, tariff protection would qualify as a subsidy. This is because the system effectively increased the price accepted by Sasol above a market-related price.
[6] Although the OECD's producer support estimate was not yet conceptualised, this amounted to a subsidy to Sasol as the regulatory requirement that OOCs uplift Sasol's production at an import parity price. This is the case due to price transfers to Sasol as a result of the pricing formula being in excess of a true import parity price, a fact which is discussed further below.
[7] Total entered the South African market as a retailer in 1954.

oil from Iran, the most logical location for the refinery would have been in the coastal areas (Rustomjee et al, 2007: 58). However, the South African government was also concerned with the security of supply in the inland areas. The South African government therefore incentivised Natref to construct the refinery at Sasolburg. Natref's decision in this regard hinged upon the government's undertaking to cover the cost of shipping the crude product inland. This undertaking was in order to ensure that Natref would not have to cover additional costs by virtue of being located inland, rather than by the coast. Consequently, in 1971, the refinery was commissioned (Rustomjee et al, 2007:58). As a result of this inland location, Natref has benefited from generous direct and indirect government support over the years, as will be discussed further below (Marquard, 2006: 268).

Finally, in 1965, state-owned Soekor was established for the purpose of oil and gas exploration. The establishment of Soekor was related to the state's recognition of the strategic importance of indigenous fuels, due to the oil embargoes against South Africa. Soekor was institutionally linked to the South African government's oil security strategy through its shareholders, the state-owned Industrial Development Corporation and Sasol (Marquard, 2006: 287).

4.1.2. 1970 to 1980

In 1977, the United Nations imposed a mandatory oil embargo against South Africa. In response, government support for the liquid fuels industry expanded as the South African government took the decision to ensure the international procurement of crude oil in an attempt to circumvent the embargo (Marquard, 2006: 260). By ensuring crude oil supply, the government's procurement of crude oil conferred support to the existing liquid fuels industry. In order to achieve this objective, the Strategic Fuel Fund (SFF) was responsible for purchasing crude oil for the South African refineries and maintained strategic stockpiles of crude oil at Saldanha Bay and Witbank (Arthur Andersen, 1995: 20).

Also in response to the oil embargo, the South African government pursued the expansion of domestic synthetic fuel production. This decision resulted in the subsequent commissioning of Sasol 2 and Sasol 3 in 1980 and 1982, respectively (Arthur Andersen, 1995: 16). The State Oil Fund (SOF) was instrumental in the development of these projects, as the organisation was established to cover the capital costs associated with these projects. This thereby provides evidence

of the way in which "institutional arrangements induce complementary organizational forms" (Pierson, 2004: 59), ultimately contributing to path dependency.

As a result, the SOF granted loans to Sasol at favourable interest rates. The total capital cost of Sasol 2 was approximately R2 503 million, while Sasol 3 cost an estimated R3 276 million[8] (Sasol Ltd., 1979: 6; Marquard, 2006: 269). As the SOF loans were provided at interest rates lower than what would have otherwise been achieved in the market, this funding amounted to a subsidy to Sasol. [9] The split of financing (in nominal rands) for each project can be found in Table 2 below.

Table 2: Sources of Finance for Sasol 2 and 3

Source of finance	Sasol 2	Sasol 3
SOF Loans	R1 711 million	R2 096 million[10]
Parliamentary grants	R300 million	-
Export credits	R492 million	R525 million
Sasol 1 privatisation	-	R655 million
Total	R2 503 million	R3 276 million

(Sasol Ltd., 1979: 6)

Prior to its privatisation in 1979, Sasol had been in charge of overseeing a number of the state's strategic assets in the liquid fuels sector. These assets included the state's Strategic Fuel Fund (SFF), the State Oil Fund, as well as the Equalisation Fund. That this was the case points to the complex interlinkages between the liquid fuels industry actors during this time, as Sasol both managed these funds and enjoyed subsidies and other benefits conferred by these funds, as will be demonstrated in the following sections. However, when the privatisation of Sasol began in 1979, a number of institutional changes occurred. The IDC took over the responsibility of managing the funds until 1985, after which time they were combined under a single holding company, the CEF Pty (LTD) (Marquard, 2006: 305). At this time, the SOF was also renamed the Central Energy Fund.

[8] The project was funded in part by '… a levy of 2 cents per litre on the relevant fuels' (Cabinet Minutes 1974 in Marquard, 2006: 296).

[9] Provision of loans by government/government actors at below market interest rates falls into the ASCM's 'direct transfer and potential direct transfer of funds' subsidy category (see Table 1 in II. Literature Review above) (GSI, 2010: 4). These loans to Sasol have now been repaid (Rustomjee et al, 2007: 73).

[10] This amount was split between SOF loans and Parliamentary grants, although the share attributable to each is unclear.

The board of the CEF consisted of a number of state and industry actors, including representatives from the IDC, the Competition Board, the Reserve Bank, the Department of Minerals and Energy Affairs, Mobil and Gencor. Due to the fact that CEF was merely a holding company, its operation was outsourced to management from the SFF. The SFF was effectively responsible for running CEF until the late 1990s. Marquard (2006: 305) notes that much of the management of SFF was appointed when the fund was still run by Sasol and were initially Sasol employees. It is important to note these arrangements as they further highlight the complex institutional relationships formed between the state and the liquid fuels industry.

A second institution established during this time was the Department of Minerals and Energy Affairs (DMEA), initially created in 1980 (DMEA, cited in Fine & Rustomjee, 1996: 97). The DMEA was unique in that, for the first time, all mineral and energy related policy functions were established within a single entity. Indeed, the newly-formed DMEA consisted of what was formerly the energy function of the Department of Environmental Planning and Energy, as well as the Electricity Control Board, Escom, and Sasol (until its privatisation) which were initially in the Department of Industries. Later that year, the DMEA also incorporated the energy functions of the Department of Commerce and Consumer Affairs (DMEA, cited in Fine & Rustomjee, 1996: 97).

4.1.3. 1987 to Present

In 1987, the South African government took the decision to plan an alternative synthetic fuel plant. The project was a gas-to-liquid (GTL) synthetic fuels plant and the plant was commissioned in 1992. Production from Mossgas enjoyed tariff protection through the Equalisation Fund similar to that received by Sasol. Additionally, the other oil companies were also required to purchase the full output of the plant. However, whereas synthetic fuels from Sasol were purchased at an import parity price, the OOCs agreed to an export price equivalent for production from Mossgas[11] [12](Rustomjee et al, 2007: 61). As a result, levies collected through the Equalisation Fund were used by the South African government to compensate Mossgas for the difference between the import parity price and the export parity price. The implication of this fact was yet further government

[11] The export parity price is the price a producer can receive for the product if it is exported. It is equal to the freight on board minus the cost of transporting the good from the factory gate to the border. It is therefore lower than the import parity price, which includes additional costs related to international transport and tariffs (United States Agency for International Development, 2008: 3-4).

[12] Further research is necessary to determine whether the OOCs received subsidies by purchasing Mossgas production at an EPP while selling it at an IPP.

support to the liquid fuels industry at the expense of consumers[13]. Although in an altered form, the extension of tariff protection to the newly-formed Mossgas is further evidence of the difficulty of pursuing alternative policy paths. This is because the existence of the synthetic fuels industry and the corresponding institutions built around that industry, as well as the state's ideological emphasis on survival and energy security, demonstrates the way in which "…assemblages of technologies, artifacts, bureaucracies, and worldviews inform the course and velocity of development paths" (Munck, Rozema, and Frye-Levine, 2014: 642; Burch, 2011:181) which may ultimately lead to techno-institutional lock in.

As Soekor discovered the gas used by Mossgas as its feedstock, it initially received payments from Mossgas for these inputs. However, in 1999 the decision was taken to merge the two firms. At this time, 'the payments that previously accrued to a public benefit (Soekor's oil and gas development efforts) became internalised in PetroSA's [the new company] accounts' (Rustomjee et al, 2007: 76). Prior to the merger of the two companies, each received considerable support from the South African government and the liquid fuels consumers. The state invested R13 billion in Mossgas and R8 billion in Soekor. Subsequently, in 1999, the South African government wrote off loans amounting to R7.9 billion and R1.5 billion to Mossgas and Soekor, respectively (Rustomjee et al, 2007: 182). The history of the relationship between the South African government, Mossgas and Soekor has informed the state's relationship with PetroSA, which is a subsidiary of CEF. Indeed, as will be discussed in subsequent sections of this report, the South African government continues to extend support to PetroSA.

The development of the liquid fuels industry and introduction of new actors to the industry over time demonstrates the extensive involvement of the South African state in this industry. In the earliest stages of the industry, the state offered a number of support measures to the South African Torbanite Mining and Refining Company. However, the extent of its involvement in the industry and subsidisation of certain actors expanded considerably with the establishment of Sasol in 1947. The state's actions in this regard continued to expand in the 1960s and 1970s with the establishment of Natref and Soekor, as well as the development of Sasol 2 and 3. Despite Sasol's

[13] The correct opportunity cost of fuel in the South African market is an import parity price. However, historical literature on the import parity pricing system used as the time, the IBLC, notes that this system was in excess of a true IPP (Marquard, 2006: 314). This will be discussed further below.

privatisation in 1979, state support to the synthetic fuels producer continued in the form of subsidies as well as favourable regulations. Many of these support mechanisms were offered through state institutions, such as the State Oil Fund, that were developed around the same time for the purposes of providing assistance to the synthetic fuels producer. That this was the case demonstrates the complex interlinkages between the South African state and the synthetic fuels producers as state institutions were developed with the aim of assisting Sasol and protecting the company's interests. Also important during this time was the establishment of the Department of Minerals and Energy Affairs in 1980, which was responsible for overseeing many aspects of liquid fuels policy and regulation. In the final phase of industry development in terms of the key actors and institutions, the state established Mossgas, the gas-to-liquid synthetic fuels producer. Later, Mossgas was merged with Soekor to produce PetroSA. Applying the historical institutional approach to the development and relationships between the liquid fuels industry actors demonstrates the early establishment of the liquid fuels subsidy regime and state support to the liquid fuels producers.

4.2. Liquid Fuels Policy and Regulatory Developments: 1950s to Present

Historically, the production of liquid fuels resources has been of great importance to South Africa. This emphasis on expanding domestic liquid fuels production arose out of a strategic concern with attaining energy self-sufficiency. This self-sufficiency imperative was magnified with the onset of sanctions against the apartheid government in the 1970s and 1980s, as well as the international shocks caused by the global rise in oil prices in 1973 and 1979. Consequently, energy policy-making in South Africa was driven by the need to ensure the country's oil and gas self-sufficiency, often at the expense of prudent fiscal policy. The implication of this fact is that the liquid fuels industry, particularly the synthetic fuels industry, developed with significant financial and regulatory support from the South African government.

This section aims to delve deeper into the mechanisms through which liquid fuels producers have received support from the government. Therefore, rather than detailing the development of the liquid fuels policy in full, as can be found in Marquard (2006), this section seeks to investigate further only those policies and regulations which conferred clear benefits to the liquid fuels producers. In doing so, the section also aims to explain the ways in which the institutional arrangements developed over time have created a system of interaction between the state and

industry which is not easily removed. Applying the historical institutional approach, this section argues that the liquid fuels policy and regulatory dispensation created a system of formal and informal rules which subsidised or provided other regulatory benefits to the liquid fuels producers. These arrangements were often determined and administered through cooperation between the state and the petroleum companies and set the stage for the liquid fuels subsidy regime and state support to the liquid fuels industry.

4.2.1. 1950s to 1970s: Defining Market Access and Promoting Indigenous Fuels

The early development of South Africa's liquid fuels policies and regulations can be broken up into two broad phases. The first phase concerned regulations that were related to defining access to the liquid fuels market. In the second phase, the policies and regulations established by the state were largely related to the desire to promote indigenous liquid fuels in South Africa. The state's actions in this regard had the outcome of increasing state involvement in the liquid fuels industry and increasing cooperation and coordination between the relevant industry actors. Consequently, the policy developments during this time established a favourable operating environment for liquid fuels producers more broadly, and for the state's new synthetic fuels producer specifically.

The development of the state's liquid fuels policy was first defined by the regulation of the retail trade. In 1951, the liquid fuels companies 'voluntarily' established the Rationalisation Plans (Ratplans), which consisted of a number of informal agreements between the state and industry[14]. The Ratplans aimed to address a number of key issues, including control of the development of retail sites and protecting retail profitability, thereby ensuring the survival of smaller sites. The Ratplans were also concerned with increasing access to petroleum products in rural areas (Rustomjee et al, 2007: 65). Essentially, the plans established procedures for service station allocation and therefore distributed market share between the oil majors (Marquard, 2006: 276). Additionally, in the 1960's this plan was used to assist new market entrants in establishing marketing networks, as was the case with Total and Trek. Interestingly, and in line with historical institutionalist thinking on the processes of institutional adaptation and evolution, this plan has more recently been used to assist Black Economic Empowerment companies in entering marketing (Rustomjee et al, 2007: 65). Although informal 'gentleman's agreements', the initiation of the

[14] The Ratplans were entered into as informal agreements between the oil companies, retailers and the state. The Department of Minerals and Energy subsequently entered into the Ratplans (Rustomjee et al, 2007: 57).

Ratplans was a key development in the liquid fuels industry as it was among the earliest instances of state support to the liquid fuels producers. The informal nature of the agreement was also an important characteristic as this was a defining feature of the industry for many decades, as will be demonstrated in the following sections.

In the next phase, the state's ideological emphasis on self-sufficiency drove the development of the synthetic fuels industry and the subsequent policies and regulations which sought to protect that industry. In 1954, upliftment agreements were established between Sasol and the OOCs and became key pillars of the liquid fuels regulatory dispensation. Although entered into as private agreements, they were initiated and facilitated by the South African government. Indeed, designed to give preference to Sasol's synthetic fuels in the inland markets, these agreements were 'effectively a government-brokered and sanctioned form of private regulation' (Competition Tribunal, 2006: 19).

The upliftment agreement between Sasol and the OOCs included the 'Blue Pump Agreement', which allowed Sasol one petrol pump at OOC branded retail stations. The rationale for such an agreement was related to the fact that, when Sasol 1 began operations in 1954, it did not own any service stations from which to market its products. In exchange, Sasol was barred from entering the retail market to sell its products through its own sites, thereby allowing the OOCs to maintain control of the retail sector and limit competition (Rustomjee et al, 2007: 66).

During the 1950s and 1960s, local refining capacity expanded with the introduction of four refineries, the first being the Mobil (now, Enref) refinery in Durban in 1954. In the 1960s, Caltrex commissioned its Calref refinery in Cape Town and the Sapref refinery was commissioned in Durban as a joint venture between Shell and BP. Natref was subsequently commissioned in Sasolburg in 1971. Imports of crude oil for local fuel refining were limited to the product required in excess of local synthetic fuels production capacity, a fact which has historically been a key aspect of the regulatory dispensation (Trollip, 1996: 4-19). While for many years the policy was unwritten, it was formally sanctioned by the Department of Minerals and Energy in 1995 as the 'Crude oil and petroleum products imports and exports policy' (Rustomjee et al, 2007: 69). The one refining facility exempted from this regulation was Sasol's production from Natref. Similar to Sasol's synthetic fuels, Sasol's production from Natref enjoyed a guaranteed offtake as a result of

a government-facilitated agreement between Natref and the OOCs (Rustomjee et al, 2007: 66). That this was the case was due to the fact that Sasol was barred from entering the retail market.

Despite the limits placed on crude oil import and the favouritism displayed towards synthetic fuels production, government's policy towards the refining industry was overall favourable. Firstly, the impact of the emphasis on import substitution was mitigated by the regulatory system which increased the refinery margins and allowed refiners to achieve higher returns (Marquard, 2006: 282). This was largely as a result of the regulated price of petroleum. Indeed, in 1954, an import parity pricing system was introduced as the basis for liquid fuels price regulation and was known as the In-Bond Landed Cost (IBLC)[15]. According to Marquard (2006: 263), the introduction of regulation on refinery gate price was informed by the state's desire to encourage industrialisation and import substitution. It was also informed by oil companies' desire to achieve a guaranteed return on investing in refining capacity.

Secondly, locally-refined fuels benefited from a preferential tariff due to the fact that they were exempt from a duty imposed on other imported fuels (Van den Burg, cited in Marquard, 2006: 280). Finally, the local refiners were effectively protected from competition due to state regulations limiting the construction and expansion of refineries. These regulations had the effect of protecting the oil majors, thereby limiting competition and effectively ensuring the profitability of local refining (Marquard, 2006: 280.

The liquid fuels producers, both domestic and international, benefited from a number of different mechanisms built into the developing regulatory system. This was in part informed by the key institutions present at the time, including the state's emphasis on self-sufficiency and state-led development. Consequently, the Ratplans were established in 1951 so as to coordinate access to the retail market. Subsequently, with the establishment of Sasol 1 in 1954, the state assisted in negotiating upliftment agreements between the synfuels producer and the OOCs. The state also limited the import of liquid fuels based on market needs and synthetic fuels production capacity. As a result of these policy developments, political economy structures were forming through which the industry and government developed systems of interaction and cooperation so as to make key

[15] The IBLC was calculated as an average of four Free on Board Prices posted from international refineries, plus additional charges relating to the hypothetical cost of freight, insurance, leakage and charges for landing in a South African port (Marquard, 2006: 263).

decisions regarding the market and the regulatory process (Marquard, 2006: 282). Each new policy and regulation had the effect of advancing the liquid fuels subsidy regime and setting the liquid fuels industry further along the path of state-supported development and growth.

4.2.2. 1960s to 1990s: The State Oil Security Strategy

Beginning in the 1960s, the next key process in the development of the liquid fuels policy was the state's pursuit of an oil security strategy. The early steps in this process involved the construction of the state-owned refinery, Natref, and the state-owned exploration company, Soekor. Also important were the state's activities in acquiring crude oil, via the Strategic Fuel Fund. Concurrently, the state's commitment to an oil security strategy also gave way to the expansion of the synthetic fuels programme, through the construction of Sasol 2 and 3, and later, Mossgas. The developments taking place during this phase were often elaborations of previously formed institutions and reinforcements of key relationships between the state and industry actors. Further, these developments also extended a number of financial and other benefits to the liquid fuels producers. The implication of this fact was that each new development reinforced the liquid fuels subsidy regime and state support to the liquid fuels industry.

4.2.2.1. Strategic Assets

Natref, the state-owned crude oil refinery, was established in 1971 following negotiations between the IDC, Sasol, the Iranian National Oil Company and Total. The apartheid government incentivised Sasol and Total to construct Natref at an inland location as the government had strategic interests in linking it to the state's strategic storage facility as well an interest in having it near high-demand locations. As Sasol took 70% of Natref's production, the government-brokered upliftment agreements enjoyed by Sasol 1 were also extended to Sasol's production from the refinery (Rustomjee et al, 2007: 66). The extension of the Main Supply Agreement (MSA) to Sasol's production from Natref demonstrates the way in which institutions experience path dependence, which ultimately leading to institutional inertia, as the initial decision to limit Sasol's entry into the retail market subsequently required OOCs to uplift Sasol's share from an entirely new company, Natref.

Natref's production enjoyed a number of additional regulatory advantages, largely as a result of the incentives provided by government to situate the plant at an inland location. Recall from the previous section that the first way in which the government incentivised Natref's inland location

was by agreeing to cover the cost of piping crude oil stock inland (Rustomjee et al, 2007:58). The shareholders of Natref enjoyed further benefits within the regulatory framework as a result of the way in which pipeline tariffs were applied, which ensured that Natref was no worse off financially than it would have been had it been constructed as the coast. As a result of the way in which pipeline charges were designed, "crude oil was transported at net cost and the transportation was recovered through a complex formula on refined products (Moerane, cited in Rustomejee et al, 2006: 61). The arrangement was termed the 'Natref Neutrality Principle' and created subsidies in the transport tariffs as crude oil was transported to Natref from the coast free of charge (Sparks, 2016: 721; Crompton, Maule, Mekhlomakulu, Rustomjee and Steyn, 2006: 45)[16].

However, the In-Bond Landed Cost (IBLC) was applied to Natref's products in such a way that the company benefited from additional margins. That is, an additional transport charge was added to the standard basic cost of fuel as if Natref had imported crude oil for refining at the plant, which in theory compensated the company for piping crude oil from the country's coast (Marquard, 2006: 289; Rustomjee et al, 2007: 74). Marquard (2006: 289) notes that this support amounted to a subsidy as it was an unregulated administered price determined by a state agency, which allowed discretion in determining the price received by Natref. This assessment is correct as the resulting price accepted by Natref was higher due to the additional margins described above, which is a subsidy that survives to present.

As previously mentioned, Soekor was established as the state-owned exploration company responsible for undertaking and promoting exploration activities. The company was overseen by the Department of Mines. Under the Mining Rights Act of 1967, the South African government granted Soekor the prospecting lease No.OP26 (Rustomjee et al, 2007: 34). While Soekor was the sole recipient of these prospecting rights, the company was permitted to sub-lease these rights to international companies. However, interest in this regard was limited due to poor resource potential. Later, interest was limited due to sanctions against the apartheid regime. As a result, much of the oil and gas exploration and production activities between 1965 and 1997 were shouldered by the South African government, acting through Soekor (Rustomjee et al, 2007: 34). Funding in this regard was largely in the form of state grants, which were distributed through the

[16] This was in place until Transnet replaced the South African Transport Services (SATS), and Transnet at first refused to recognise the principle. In 1991, following negotiations between Total, Sasol and Transnet, a variation of the principle was agreed upon, which was complied with until 2005 (Transnet v Total, 2016).

IDC. In 1985, however, Soekor became a subsidiary of the Central Energy Fund (CEF), which was the state-owned energy fund mandated with investing in energy development so as to assist in ensuring the country's energy security. Subsequently, funding by use of grants continued only until 1988, after which financial support was extended through the use of loans (Marquard, 2006: 287). While the total value of financial support to Soekor's exploration programme is unclear, it is estimated to have cost the South African government in the range of R2.35 billion to R2.6 billion in expenditure between 1965 and 1994 (Rustomjee et al, 2007: 34; Trollip, 1996: 4-13). Therefore, during this period, state efforts to develop a domestic liquid fuels industry entailed a number of direct and indirect subsidies to the liquid fuels companies present in the market.

As previously mentioned, the South African government established the Strategic Fuel Fund in 1964. In 1977, the Fund was charged with ensuring international procurement of crude oil as a result of the embargo against the apartheid regime. This is because the refiners were unable to source crude themselves as a result of increasing anti-apartheid sentiments internationally (Marquard, 2006: 299). Consequently, the state purchased crude internationally through alternative channels, often at a considerable premium. The state then sold the products to the refiners at an average international price. To cover the excessive costs related to procuring crude products outside the traditional international oil market, the state established the 'Acquisition Equalisation Fund' (subsequently, the Equalisation Fund). Consequently, the difference between the premium paid by government and the price paid by refiners was recovered through an additional levy imposed on the price of fuel (Marquard, 2006: 270). Marquard (2006: 300) notes that this arrangement had the effect of increasing the close and cooperative relationship between the state and the liquid fuels industry. In line with historical institutional thinking on path dependent processes, the state's actions in this regard effectively maintained the industry on the path of state-supported development.

4.2.2.2. Expansion of the Synthetic Fuels Programme

The 1973 oil crisis triggered the next set of key processes in the development of the state's oil security strategy and liquid fuels policy. Before detailing the policy changes relating to the expansion of the synthetic fuels programme, it is important to briefly discuss the changes to the way in which the regulated price of liquid fuels was calculated. Prior to this time, the Free on Board (FOB) cost was determined based on a basket of prices from four international refineries in

the Middle East. When those refineries were nationalised in 1973 and prices from those refineries subsequently set by their respective governments, the South African government began using a basket of one refinery in Bahrain and three in Singapore so as to determine the FOB market price[17].

That the decision was taken to use Singapore-based refineries has been a subject of contention due to the effect it had on the regulated price of petroleum. Firstly, as Lloyd (2001: 17) notes, '…there is a clear price differential between Singapore and the Arab Gulf of about US$2.80 per barrel…indeed, Singapore turns out to be one of the most expensive refining areas from which to buy fuel.' According to Marquard (2006: 265), this produced a difference in price of about 13c/l in 1997. Secondly, there was an increase in the shipping component of the IBLC as a result of the greater distance between Durban and Singapore than between Durban and the Middle East (Marquard, 2006: 265). Taken together, the Singapore reference prices resulted in a regulated price that was considerably higher than a true import parity price. Therefore, it is important to note that although the basis on which the IBLC was calculated experienced some change, the price of liquid fuels continued to be regulated. Consequently, the oil companies continued to receive supracompetitive prices. That this is the case provides further evidence of institutional inertia in the liquid fuels industry as well as state support to the industry.

Next, in 1974, the Prime Minister at the time established two key committees which reinforced the nature and structure of interactions between the state and industry: the Energy Policy Committee (EPM) and the Cabinet Committee on Energy Policy (Marquard, 2006: 294). Representatives of the state-owned companies, Sasol and Escom, as well as key government actors, were members of the EPC and directly involved in decision making relating to the state's oil security strategy. In this regard, the EPC was responsible for planning and coordinating functions concerning the oil security strategy. Accordingly, the EPC was important in the decision to build Sasol 2 and 3 (through an EPC sub-committee), as well in decision-making concerning longer term strategies (Marquard, 2006: 295).

Following a process of discussions between a sub-committee of the EPC, which included representatives of Sasol, the IDC, and the Departments of Trade and Commerce, government took the decision to construct Sasol 2. This was a key step in the development of the liquid fuels policy

[17] Marquard (2006: 263) notes that these refineries were owned by the big four oil companies in South Africa at the time: BP, Mobil, Shell and Caltex.

as it set the state further along its long-term synthetic fuels policy path. Soon thereafter, with the United Nation's implementation of a mandatory oil embargo against South Africa in 1977, government took the decision to build Sasol 3. Sasol 2 and 3 were commissioned in 1980 and 1982, respectively (Crompton et al, 2006: 43). Similar to Sasol 1, additional support provided to Sasol for the benefit of Sasol 2 and Sasol 3 included tariff protection as well as upliftment agreements through the extension of the MSA (Sparks, 2016: 721; Rustomjee et al, 2007: 60; Marquard, 2006: 310). The OOCs uplifted Sasol's production at the IBLC plus a transport premium, which Marquard (2006: 310) notes amounted to a subsidy as a result of the inherent premiums built in to the IBLC formula, as well as the fiction of transport differentials.

Interestingly, this event in the development of the liquid fuels industry demonstrates institutional path dependency. The discursive aspect of institutional path dependence is demonstrated by the fact that the decision to expand synthetic fuels technology was informed by the dominance of the discourse around economic interest, self-sufficiency, and energy security vis- à -vis external threats to the apartheid state. The construction and extension of these measures of support to Sasol 2 and 3 demonstrates institutional path dependency more broadly by sending the South African state further along the synthetic fuels development path. Furthermore, as the institutional arrangement was already in place for the support of Sasol 1, it can also be argued that this system created sunk costs, as the extension of the pre-existing system might have been seen as easier than devising an entirely new system to pursue self-sufficiency in the face of sanctions.

With the introduction of Sasol 2 and 3, the OOCs were required to mothball 30% of their capacity and in return received a 'synlevy' as compensation from the state. The synlevies were implemented in 1984 and funded through fuel levies. Over the 10 years they were in use, the synlevies amounted to approximately R1.267 billion (in nominal rands) (Van den Berg, 1993 in Marquard, 2006: 270). Finally, the OOCs also benefited through the introduction of the Petroleum Activities Return or 'PAR' mechanism which effectively protected the returns on investment of the OOCs' marketing assets (Competition Tribunal, 2006: 22; Arthur Andersen, 1995: 21).

Therefore, while state preference was given to the domestic company, Sasol, the OOCs active in the liquid fuels industry continued to receive support from government so as to ensure their continued presence in the South African market. Government was successful in this regard as the combination of compensation from the state, as well as guaranteed gross margins at around a 15%

return on assets, prevented the OOCs from disinvesting by ensuring profitability. According to Marquard (2006: 311), 'one senior executive recalled that there was only one year when the South African subsidiary's profit level was the same as the group's global profit levels; for the rest, South African profits were far higher'.

This financial support was again at the expense of consumers, as the South African government collected the synlevy by use of a levy imposed on the price of fuel. That this is the case means that this measure can be identified as a market price support subsidy as it resulted in transfers from consumers to producers. Alternatively, the adjustments for the PAR were collected through a wholesale margin build-up which again increased the retail price of petroleum products (Competition Tribunal, 2006: 22). However, this support in the form of a synlevy was discontinued in 1993 as a result of growth in the market that enabled the refiners to achieve output levels similar to those which prevailed prior to the introduction of domestic synfuels (Arthur Andersen, 1995: 21).

The above events indicate the way in which institutional path dependency may arise. It may be argued that coordination affects contributed to path dependency in this instance as the OOCs benefited financially from cooperating by uplifting Sasol's production. It also demonstrates learning effects, as institutional arrangements identify further, complementary institutions to increase the effectiveness of the institutions as a collective. Indeed, the state devised complementary institutions to support both Sasol and the OOCs, thereby ensuring that the OOCs continued to act as conduits for Sasol's production to reach the South African consumer. This then reduced opposition to the state's policy of support to Sasol, thereby sending South Africa further down the synthetic fuels path.

Just prior to the commissioning of Sasol 2 and Sasol 3, in 1979 Sasol began its first phase of privatisation. The company was listed on the Johannesburg Stock Exchange and its terms of privatisation were favourable to investors as they limited the risk involved in the investment. Indeed, according to the company's prospectus (Sasol Ltd., 1979: 7; Arthur Andersen, 1995: 34),

> *'In considering the economic viability of the Sasol group once the Sasol Two project has been complete, the State agreed that for the commercial success of the undertaking*

in which the public is now being invited to participate, the State will, have to meet two requirements to achieve the desired financial results, namely:

(a) An additional protection of 3,6c per litre on all white products, namely liquid petroleum gas, petrol, diesel, kerosene, including jet fuel, produced from indigenous materials;
(b) This industry must have the assurance that as international oil prices increase in future, the prices of its products will also increase.

These principles have been considered and accepted by the State with the reservation that should the ratio between the rise in general cost factors and the rise in the prices of petroleum products materially deviate from the assumptions made for the purpose of the economic evaluation of the Sasol undertaking the additional protection of 3,6c per litre may be adjusted upwards or downwards by the State'.

Therefore, the terms of the prospectus had the effect of locking the South African government into ongoing tariff protection. Additionally, the amount paid by the new shareholders of Sasol for the company's privatisation was less than the full value of the company at R2.9 billion. This equated to 92% of construction costs for Sasol 2 and Sasol 3, estimated at R3.2 billion (Rustomjee et al, 2007: 77). Finally, in 1990, the final 50% of Sasol 3 was sold by the CEF using R617 million in cash and a CEF loan in the amount of R2.3 billion. This sale was under the agreement that should tariff protection be reduced in the future, the interest rate on the loan as well as the capital outstanding would also be reduced. Unsurprisingly, the agreement noted that both reductions would happen at expense of the government (Rustomjee et al, 2007: 74). Therefore, in 1993, when the synfuels tariff protection was reduced as a result of social unrest caused by hikes in the petrol price, the interest on this loan payable by Sasol was simultaneously reduced (Rustomjee et al, 2007: 73)[18].

[18] Interesting, the reduction in tariff protection would decrease the value of the tariff protection subsidy to Sasol. However, as it was matched with a concurrent reduction in loan interest, this would produce a subsidy as a result of a government entity receiving reduced interest payments than what would have otherwise been owed. Further research is necessary to determine the net result of these provisions.

It is also interesting to note term (b) of the prospectus, 'this industry must have the assurance that as international oil prices increase in future, the prices of its products will also increase' (Sasol Ltd., 1979: 7). As Sasol continues to accept import parity pricing, despite its product being produced domestically, it has benefited from a fuel price which is out of line with its cost structure, thereby disproportionately benefiting from price regulation. The implication of this fact is that the company has generated excessive profits[19] (or economic rent) during times of high international oil prices. This point is amplified when one considers that South Africa's IPP is above a true IPP, and therefore higher than the true opportunity cost of the fuel in the South African market (Engen Ltd, Sasol Ltd and Petronas International Corporation, 2005: 2957). This support has continued to this day, despite the goals for industry deregulation set out in the White Paper on the Energy Policy of the Republic of South Africa (Department of Minerals and Energy [DMEA], 1998: 68), as well as the task teams established to address these excessive profits (Rustomjee et al, 2007). The fact that Sasol continues to accept import parity pricing is in line with historical institutional thinking on the difficulties involved in achieving institutional change, particularly when actors have a vested interest in maintaining the status quo.

As discussed in the previous section, Mossgas was commissioned in 1992. The construction of Mossgas represented a final step in the state's oil security strategy and reiterated its commitment to a long-term synthetic fuels policy. Additionally, Mossgas' products enjoyed upliftment by the OOC's similar to that received by Sasol. However, the two agreements differed in that whereas Sasol's products were uplifted at an import parity price, Mossgas' products were uplifted at an export parity or 'Africa Netback' price. This price was based on the international market rate and was therefore considerably lower than the IBLC. Marquard (2006: 314) notes that this is ironic, given that the IBLC was supposedly an import parity price but the Africa Netback was a truer reflection of the import parity price.

It may be argued that the extension of these provisions is simply a reflection of the economic necessity to recover the cost of the plant's construction. While it is important to acknowledge the economic and financial considerations underpinning these provisions, the historical institutionalist would highlight the importance of increasing returns in path dependency of institutional

[19] Excessive profit is used to refer to and economic profit or returns in excessive of the appropriate opportunity cost of capital (Rustomjee et al, 2007: 11).

arrangements. That is, "institutional arrangements induce complementary organizational forms, which in turn generate new complementary institutions" (Pierson, 2000: 255). In the context of the South African liquid fuels industry, this is demonstrated by the initial decision to pursue synthetic fuels, and the subsequent establishment of other institutions and measures to provide regulatory and financial support to sustain that policy path. This demonstrates the way in which, "initial investments in a particular path… [in this instance, the synthetic fuels industry]… reverberate into the future, making alternative paths increasingly less likely" (Burch, 2011: 184). This is particularly important in light of the state's interests built around the synthetic fuels industry.

However, in 1993, the state determined that Mossgas should receive an import parity price for its products. Accordingly, the CEF transferred a synthetic fuels subsidy to Mossgas similar to that received by Sasol. This was a subsidy as it effectively increased the price that Mossgas accepted for its products. This subsidy was paid through the Equalisation Fund and therefore at the expense of consumers. In addition, a synlevy was paid to the OOCs by the Department of Minerals and Energy for 'mothballing' production. It is interesting to note that the OOCs did not actually mothball capacity, but exported products to make space in the domestic market for production from Mossgas[20]. Thereafter, the synlevy payment was transferred to Mossgas (Marquard, 2006: 314). Therefore, while Mossgas did not have the same advantages as Sasol in that it did not benefit from historically established relationships with state and industry actors, the company enjoyed institutions similar to those extended to Sasol.

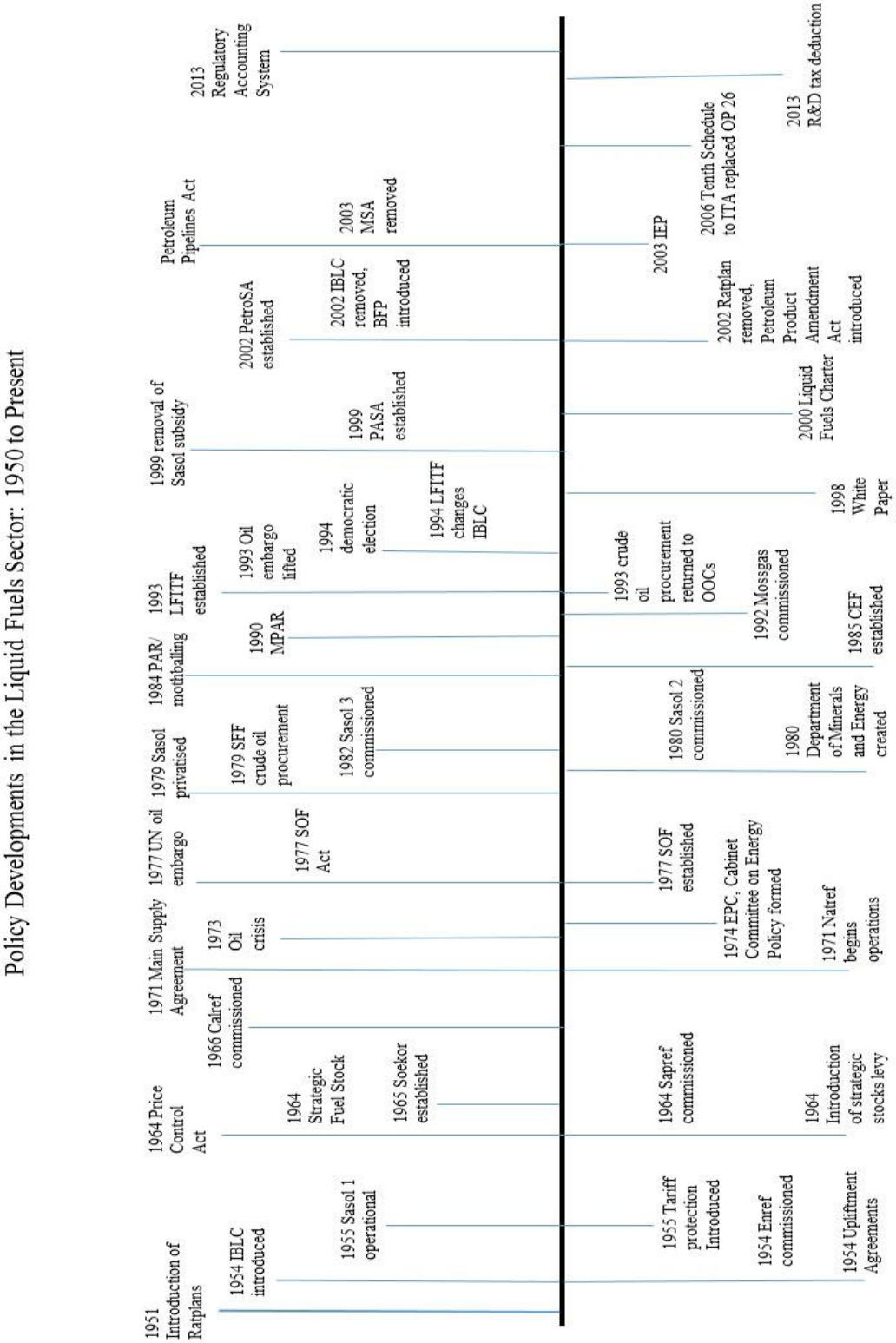
In conclusion, a number of significant processes can be identified during this stage of the development of the state's liquid fuels policy. Firstly, the state's pursuit of an oil security strategy led to the establishment of key state-owned assets, including the Natref refinery and the exploration company Soekor. It also induced a long term synthetic fuels policy through the expansion of Sasol and subsequent development of Mossgas. Importantly, a number of subsidies and other benefits were extended to both the synthetic fuels producers and OOCs through the evolving regulatory system. This system also established Sasol as a dominant industry actor. Much of the developments in this regard were informed by the historical relationship between the state, Sasol and the OOCs and were extensions on previously elaborated institutions. The construction of new synthetic fuels projects, and subsequent extension of regulatory benefits to these plants, demonstrated the way in

[20] This was in place until 1996.

which learning and coordination effects lead to institutional path dependent processes. Furthermore, the period also demonstrated the discursive aspect of path dependency, due to the dominant narrative around survival and security contributing to the decision to continue on the synthetic fuels path. Highlighting these state-industry relationships and applying the concepts of path dependency, institutional lock in and vested interests explain the endurance of the liquid fuels subsidy regime and state support to the liquid fuels industry.

Figure 1 below provides a timeline of the policy and regulatory developments that have been discussed thus far in this chapter, as well as those that will be discussed in the following sections.

Figure 1: Policy Developments in the Liquid Fuels Sector: 1950 to Present



4.2.3. 1990s to Early 2000s

A number of important events and processes took place in the next phase of the liquid fuels policy development. The early part of this phase was marked by the transition from the apartheid state to democracy. As a consequence, new actors were brought to the decision-making table. Additionally, the methods and processes of decision making were changed from being informally determined and defined by secrecy to being more transparent and formally arranged. These events combined to form what a historical institutionalist may define as a 'critical juncture,' which created a political opening for institutional change within the liquid fuels industry. However, few meaningful changes actually materialised. Rather, the early stage in this phase consisted of changes to the petroleum pricing and tariff protection systems, while the broader institutions of petroleum price regulation and tariff protection to Sasol remained in place. The next phase, which began with the introduction of the White Paper on the Energy Policy of the Republic of South Africa, can be identified as a period of stasis in the midst of change. Indeed, while the White Paper was the first of its kind in the new South Africa, and aimed to lay the way forward to deregulation and an overhaul of the liquid fuels market, many of the structures of the previous era remained fundamentally unchanged. Applying the historical institutional approach to understand the evidence, this section argues that the liquid fuels subsidy regime and state support to the liquid fuels industry continued despite the critical juncture represented by the transition to democracy.

4.2.3.1. Early Changes to the Pricing System and Tariff Protection

Firstly, in 1990, the Marketing of Petroleum Activities Return (MPAR) replaced the PAR mechanism. Similar to the PAR, the MPAR aimed to guarantee the OOC's returns. However, the new mechanism guaranteed returns in the 10-20% range and, additionally, was only applied to marketing assets. While this was the case in theory, Rustomjee et al (2007: 70) note that the MPAR also indirectly 'guaranteed' a return on refining assets.[21]

Secondly, a new system of tariff protection was implemented in 1995. The previous system of protection functioned between 1989 and 1995 and stipulated that Sasol would receive tariff protection from government should the price of oil fall below $23/bbl. While the mechanism did not function when the oil price was between $23/bbl and $28.7/bbl, Sasol was to pay 25% of

[21] Engen challenged the view that the MPAR extended favoured treatment to the liquid fuels producers. Engen noted that a 15% benchmark had also been applied to other regulated industries at the time and, therefore, cannot be viewed as favourable treatment to the liquid fuels industry specifically (Engen 2006 in Rustomjee et al, 2007: 70).

revenue into the Equalisation Fund should the oil price exceed $28.7/bbl. Accordingly, when the dispensation system was changed in 1995 Sasol was obligated to pay R3.7 billion (Rustomjee et al, 2007: 109). However, as this new system did not include a government instrument to collect Sasol's deficit, the synfuels company did not repay its remaining balance into the Equalisation Fund. The non-payment of this balance effectively amounted to a subsidy to Sasol, as a result of government revenue foregone. Indeed, in the 2007 response from National Treasury to the Task Team, the report confirms that Cabinet, 'effectively released Sasol from the obligation to repay any outstanding subsidies received during the Pim Goldby era in 1998, *provided it continued to develop the petrochemicals sector*' [emphasis added] (National Treasury, 2007: 3). However, no evidence was found to indicate that Sasol has made any major investments in expanding refining capacity.

Despite the fact that Sasol did not repay its deficit into the Equalisation Fund, the company continued to enjoy protection for its synfuels. When the new system of protection commenced in 1996, the South African government and Sasol agreed that tariff protection would continue should the price of oil fall below $16/barrel (Roberts and Rustomjee, 2010: 64). In return for this protection, Sasol agreed to create 50,000 sustainable jobs in the downstream sector. However, in 1999, when the protection system was again reviewed and subsequently phased out, Sasol had not yet succeeded in honouring its commitment. The total value of the subsidy to Sasol resulting from tariff protection between 1980 and 1994 is estimated at R14.1 billion in 2000 rands (Trollip, 1996 in Marquard, 2006: 268). Therefore, while the institutions used to protect Sasol have changed over time, Sasol and the synfuel industry have historically benefited from undue support from the South African government. This support was ostensibly offered to Sasol in exchange for employment and petrochemicals development, reflecting the persistent narrative of Sasol as instrumental to the South African economy and energy security, however these outcomes did not materialise.

A third major development during this time relates to the regulation of petroleum prices. Since 1954, petroleum prices have been regulated by the South African government and have been determined based on the price of importing the fuel. Additional costs associated with transporting the products to their final location with South Africa are also levied (Rustomjee et al, 2007: 68). Initially, the In Bond Landed Cost (IBLC) was used to attract multinational companies to South

Africa. The IBLC was subsequently used to incentivise the companies to remain in the country by ensuring the profitability of the industry.

However, in the early 1990s, a Liquid Fuels Industry Task Force (LFITF) was established as a result of mounting political pressure from consumers and was responsible for addressing the supracompetitive regulated price of petroleum The LFITF first pursued a short-term solution aimed at achieving price reductions. To this end, an agreement was reached between Sasol and the OOCs that the producers would split the cost of the reduction by reducing the petrol price (Marquard, 2006: 318). As a longer term solution, the LFITF determined that the process of price-setting would be determined by a transparent formula, which was important as the process by which the price was previously set by government was not transparent. Further, the LFITF recommended that this formula should be updated on a regular basis to reflect changes in the international oil market. Finally, the LFITF concluded that it was necessary to reevaluate the IBLC, which had long been considerably higher than the true import parity price. Thus, for the almost 60 years that the IBLC was used, the liquid fuels industry was propped up at the expense of South African motorists (Rustomjee et al, 2007: 78). These changes will be discussed in depth in the following chapter. The incremental changes to the pricing and tariff protection systems were elaborations on the preexisting institutions and set the industry further along the path of subsidisation and support from the South African state, thereby reflecting path dependency and institutional lock in.

4.2.3.2. Stasis in the Midst of Change

The next key event in South Africa's energy policy development concerns the formulation of the 1998 White Paper on the Energy Policy of the Republic of South Africa. Firstly, the White Paper noted that one of the important milestones to be reached before deregulation was, 'mutually acceptable agreements between synfuel producers and the marketers of crude oil based fuels on the upliftment and marketing of synfuels' (Department of Minerals and Energy [DMEA], 1998: 71). In light of this, it can be argued that the South African government continued to play an important role in ensuring the upliftment of synfuels, even after the transition to democracy.

With regards to oil and gas exploration, the White Paper committed government to ensuring a stable and attractive tax regime and regulatory environment so as to promote the development of oil and gas resources in South Africa. Associated with this, the White Paper also emphasised

government's role in promoting research and development relating to oil and gas exploration and production (DMEA, 1998: 64). The significance of these commitments will be revisited in the following section concerned with post-2003 developments.

Finally, the White Paper was also significant in that its liquid fuels component called for a phased approach to deregulation (DMEA, 1998: 70). This process would proceed in three phases; the first phase would involve the presence of historically disadvantaged South Africans in the liquid fuels market in addition to governmental monitoring of the industry; in the second phase price regulation, import control and the Ratplan would be removed and; the third phase would be a 'post-regulation transition phase' in which the industry would be monitored and corrective action would be taken where necessary (DMEA, 1998: 70-71).

For the historical institutionalist, this commitment may represent the potential opening for change to previously entrenched institutions. Such an assumption would not be unreasonable given the political rupture represented by the end of the apartheid regime and subsequent transition to democracy – what the historical institutionalist would refer to as a 'critical juncture'. However, Marquard argues that subsequent policy actions were more in line with a process of 're-regulation,' rather than deregulation (Marquard, 2006: 324). That is, rather than completely scrapping the regulatory dispensation inherited from the apartheid era, there was a process of formalising the pre-existing arrangements. Firstly, rather than deregulating the price of liquid fuels, in 2003 the IBLC was replaced by the Basic Fuels Price (BFP). The new pricing formula was intended to be a more accurate representation of an import parity price. Indeed, while the BFP consists of many of the same elements included in the IBLC, the BFP was perceived to have resulted in prices approximately 6c/l lower than those determined by the IBLC (PetroSA, 2006 in Rustomjee et al, 2007: 68). Also in 2002, the price of diesel underwent some deregulation, as it was determined that the retail price of diesel would no longer be regulated. The wholesale price, however, remains regulated (Department of Energy [DOE], 2016).

The process of re-regulation also included the implementation of the 2005 Petroleum Product Amendment Act, in order to direct the Department of Minerals and Energy-administered licensing process. Indeed, this policy was introduced as a replacement to the Ratplan.

While the MSA was in fact removed, this was a result of Sasol's own actions, rather than government-led action to rid the industry of anti-competitive agreements. In 1998, Sasol provided

the five years notice that was necessary to terminate the agreement (Rustomjee et al, 2007: 67). As the termination of the MSA represented a major institutional change within the liquid fuels regulatory regime, it will be discussed further in the following chapter concerning major instances of institutional change and inertia[22].

Finally, in 2000, the subsidy to synthetic fuels was successfully phased out. However, due to the high international price of crude oil, the subsidy had not been in function at the time (Marquard, 2006: 324). A primary reason for the removal of the subsidy was that the United Nations lifted the sanctions on South Africa. However, Trollip (1996: 4-28) notes that the decision to phase out the subsidy to Sasol was also informed by the actions of the South African oil refineries, represented by the South African Petroleum Industries Association (SAPIA). SAPIA claimed that while Sasol earned a 12.7% after tax return on total assets excluding cash, their members earned only 6.8%[23]. While SAPIA has its own vested interests, if this is true, it provides further evidence of the additional support extended to the synthetic fuels producers. It also provides evidence that Sasol no longer required this financial support as it was sufficiently profitable.

The key events during this phase in the development of the state's liquid fuels policy do not point to evolution or change, as would be expected given the massive political rupture represented by the end of apartheid and transition to democracy. Rather, many of the institutions remained essentially unchanged. While the IBLC was reduced and reconstituted to be a BFP, the fuel price continued to be regulated. As a result, the price was still higher than it would otherwise be in absence of regulation (Competition Tribunal, 2006: 26). The Ratplan, a defining feature of the regulatory framework during the apartheid era was also reconfigured into a formal regulation, the Petroleum Products Act. The few changes which did occur, including the end of the MSA between Sasol and the OOCs and the synthetic fuels subsidies, were either a result of industry action, rather than government, or were already moot by the time they were removed. Similar to the two phases which came before it, this phase of policy development demonstrates both the continued support

[22] On the other hand, PetroSA, the state oil company formed through the merging of Mossgas and Soekor, continues to enjoy upliftment agreements for its products. The initial upliftment agreements ended in 2007 and were subsequently renegotiated (Engen Ltd, Sasol Ltd and Petronas International Corporation, 2005: 1773).

[23] No response from Sasol on this matter was found. An attempt to estimate the after tax returns would require financial data from the relevant parties, which is not easily accessed, and is beyond the scope of this study.

extended to the liquid fuels industry as well as the issue of institutional inertia undermining the possibility of fundamental change.

4.2.4. 2003 to Present

Similar to the stages before it, the next phase of energy policy development demonstrates the state's interest in ensuring the security of supply. However, whereas the previous stage in the history of the liquid fuels industry was largely concerned with developments in the midstream liquid fuels regulations, this stage is largely concerned with the upstream industry. Accordingly, the early part of this stage demonstrates the state's overwhelming focus on incentivising liquid fuels exploration and production. As the purpose of integrated energy planning is to inform both energy policy development and the relevant regulatory framework, a useful starting place for this section is the 2003 Integrated Energy Plan. Subsequently, the state introduced the Tenth Schedule to the Income Tax Act in 2006, aimed at incentivising oil and gas exploration and production in the country. This has been followed by other incentive measures built into the oil and gas tax regime. The final change in this stage occurred in 2013, with an adjustment to the way in which margins are determined in the petroleum industry, which had an impact on the Basic Fuel Price. Despite the major political change represented by South Africa's transition to democracy, this section argues that the liquid fuels subsidy regime and state support to the liquid fuels industry have continued.

In 2003, South Africa published its first Integrated Energy Plan (IEP), as called for in the White Paper on the Energy Policy of the Republic of South Africa (DMEA, 1998: 83). The purpose of integrated energy planning is to outline a framework within which developments in energy supply can balance those in future energy demand. Consequently, it is used to inform energy policy and regulations. Notably, the conclusions of the 2003 IEP reiterated the 1998 White Paper's emphasis on the importance of tapping into South Africa's oil and gas resources (although believed to be limited at the time). That is, the IEP called for an expansion to oil and gas exploration measures (Department of Minerals and Energy [DMEA], 2003: 26).

It is within this environment – the White Paper's commitment to oil and gas exploration and production and the subsequent emphasis on expanded measures in the IEP – that the state introduced the Tenth Schedule to the Income Tax Act. Prior to its introduction in 2006, the tax regime applicable to oil and gas companies was governed by the OP26, granted in 1965. The OP26

consisted of the OP26 prospecting lease, the OP26 mining lease as well as the OP 26 mining subleases. The exact details of the OP26 were long unknown to the public due to the secrecy and lack of transparency that has historically surrounded the liquid fuels industry. However, it is now known that it contained a number of tax incentives for oil and gas companies, including a tax stabilization regime and full deduction of capital expenditure relating to prospecting ('exploration') and mining ('production')[24] (Futter, 2010: 43).

Notably, the Tenth Schedule grants a 200% super deduction of capital expenditure in respect of exploration. Conversely, capital expenditure in respect of production benefits from a 150% super deduction. These super deductions act as tax incentives to companies to invest in oil and gas exploration and production in South Africa and effectively reduce the cost of producing oil and gas below that which would prevail under a standard tax treatment. For companies that access these measures for specific projects, the most common approach to calculating the value of the subsidy is measuring the difference between the tax liability under the preferential measures and the tax liability that would be owed under a standard tax treatment (Bruce, 1990 13), which amounts to the government revenue foregone[25]. Although the value of these incentives is not easily calculated due to lack of detailed financial information on the relevant companies, these measures result in subsidies to these companies accessing them for the exploration and production of oil and gas as they result in government revenue foregone. Furthermore, as many of these incentives were carried over from the previous taxation regime, the transition from the OP26 to the Tenth Schedule of the Income Tax Act provides yet further evidence of the difficulties involved in removing entrenched institutions. This is particularly the case when state and industry actors have an interest

[24] Due to a lack of information on company-specific costs and a corresponding lack of data on the government revenue foregone as a result of these provisions, it is unclear which companies claimed these deductions and what the total value of the deductions were.

[25] An alternative view is to argue that the tax subsidy should be identified and measured on the basis of whether the project would have proceeded in the absence of the tax provision. The idea behind such an argument is that, if the project would not have proceeded in the absence of the provision, then it cannot be counted as a subsidy as the government generates from the project tax revenues which it otherwise would not have received. However, the challenge with this approach is that, from the outside, it is not always possible to know whether a company would have proceeded with the project in the absence of the provision. Other approaches argue for the inclusion of behavioural changes caused by the introduction or removal of favourable tax provisions, although these methods are complex and require estimation of critical elasticities. Consequently, the present study follows much of the international subsidies literature in identifying and measuring tax subsidies on the basis on government revenue foregone, which is favoured for its practicality and ease of use (Kojima and Koplow, 2015: 27; OECD, 2013: 32).

in promoting resource nationalism and maintaining the status quo. The tax provisions resulting in subsidies to oil and gas producers will be discussed in more depth in the following chapter.

Additionally, in 2012, new legislation was introduced which aimed to stimulate research and development in oil, gas and mineral exploration. Indeed, expenditure on exploration-related research and development enjoys a tax deduction in the amount of 150% of the investment (KPMG, 2013: 1). Similar to the previous deductions allowed through the Tenth Schedule, this super deduction reduces the amount of government revenue collected and therefore amounts to a subsidy to oil and gas companies carrying out these activities. Furthermore, the introduction of this incentive should be considered in connection with the other favourable tax regulations enjoyed by the liquid fuels industry, first set out in the OP26 and subsequently embodied in the Tenth Schedule. This then provides further evidence of the difficulty involved in pursuing an alternative path arising out of the continued incentives offered to the liquid fuels producers.

Finally, in 2013, the Department of Energy introduced the regulatory accounting system (RAS) so as to determine appropriate margins for wholesale, storage, handling and distribution in the petroleum industry[26]. The RAS is based on assets and aimed to introduce transparency into the liquid fuels industry and to reduce excessive costs and inefficiencies (Steyn, 2013). The reason for the introduction of the RAS was that the previous structure was believed to inflate the costs of marketing and operating. It was also believed to encourage over-investment in the retail industry. This was due to the fact that the previous system set prices based on aggregated costs, as submitted by wholesalers and retailers. This implication of this was that consumers covered the cost of value chain inefficiencies (Steyn, 2013). That the previous system encouraged over investment in service stations is unsurprising as the Department of Energy had previously noted in 2006 that there were 30% more retail stations in the market than necessary (Engen Ltd, Sasol Ltd and Petronas International Corporation, 2005: 1770). However, while the new system resulted in lower margins for the petroleum wholesalers, it aimed to achieve a simultaneous increase in margins for retailers. The retailing segment of the value chain is important as it is the segment that includes a number of new entrants, particularly a number of Black Economic Empowerment entrants. It is therefore interesting to question whether the introduction of the RAS was in part aimed at assisting these

[26] The introduction of the RAS began in 2010. The transitional process took over two years, until it was fully implemented in December 2013 (Mondliwa & Roberts, 2014: 26; South African Petroleum Industry Association, 2016).

relatively newer players. While the introduction of the RAS signaled a change to the calculation of the basic fuel price, the broader institution of regulating the price of petroleum remained in place. The state's interests in assisting new BEE entrants provides further evidence of the way in which vested interests can undermine the removal of institutions despite calls for deregulation following the transition to democracy.

The final stage in the development of the state's liquid fuels policy began with developments concerned largely with the upstream liquid fuels sector. Following the introduction of the Integrated Energy Plan, which emphasised the importance of supporting exploration, the state reformed the tax regime applicable to the oil and gas industry. The Tenth Schedule to the Income Tax Act, which was the newly formed tax regime, in many ways retained the most favourable provisions of the former tax regime. Additionally, the state subsequently introduced favourable tax legislation aimed at promoting research and development in the liquid fuels industry. The final changes in 2013 were again concerned with regulations in the midstream sector and changed the ways in which margins are determined in the petroleum industry's wholesale, storage, handling and distribution steps in the value chain, with regulation allowing rent seeking for new and existing players in the retail market. The institutional inertia evidenced by these examples demonstrates the way in which the liquid fuels subsidy regime and state support to the liquid fuels industry have continued despite major political change.

4.2.5. Conclusion

A review of the development of the policies and regulations applicable to the liquid fuels industry demonstrates the issue of institutional inertia in the industry, as well as the way in which the industry developed with assistance from the South African government. The early stage of the industry was largely concerned with defining market access for industry players and assisting in the development of domestic liquid fuels production, particularly with regards to synthetic fuels. The next stage was concerned the state's energy security strategy and lead to the development of a number of new institutions. Many of these actors and institutions were designed to support the development and success of liquid fuels production and liquid fuels producers, reflecting the way in which institutions come together to form a complementary, reinforcing arrangement. Furthermore, preexisting institutions, such as the Main Supply Agreement, were extended to new producers that entered the market. This thereby demonstrated the way in which institutions may

become entrenched over time. The following two stages occurred during and after the transition to democracy. While new policies emphasised the need to change and deregulate the liquid fuels industry, the subsequent policy and regulatory changes were more in line with a process of reregulation. For instance, while the basis on which the import parity price was determined underwent some change with the transition to the Basic Fuel Price, the broader institution of price regulation remained in place. Similarly, in the final stage of the industry's development, the liquid fuels tax regime transitioned from the OP26 to the Tenth Schedule. However, the favourable aspects of the former tax regime were retained in the new regime. Therefore, applying the concepts of historical institutionalism demonstrates the way in which liquid fuels industry advanced further along the path of subsidisation and support from the South African state, despite the major political change represented by the end of apartheid and subsequent transition to democracy.

V. Major Instances of Change and Inertia: An Analysis

The usefulness of historical institutionalism in attempting to understand and explain instances of institutional inertia should be apparent following the discussion in the previous chapter. Through reference to the concept of a 'critical juncture', however, historical institutionalism has also been used to understand and explain institutional change. One way in which a critical juncture may appear is through regime change. South Africa's shift to democracy in 1994 represented a critical juncture, creating an opening for major institutional change in the liquid fuels industry. This is particularly so given the industry's close ties to the apartheid state. However, this was not the case as most of the 'major' changes in the liquid fuels industry following the transition to democracy were incremental, rather than fundamental. Furthermore, many of these changes retained the fundamental aspects of those institutions, rather than replaced them. These types of processes are evidenced in the case of industry regulation, the state's failure to impose a windfall tax on Sasol as well as the transition to the Tenth Schedule of the Income Tax Act. Alternatively, Sasol's termination of the Main Supply Agreement was a major instance of institutional change, although it is important to note that there was no major political opposition and it did not affect the company's profitability. Applying the institutional historical approach to the instances of institutional inertia and change, this chapter argues that the liquid fuels subsidy regime and state support to the liquid fuels industry have continued despite the major political change represented by the end of apartheid.

5.1. Major Actors

In addressing major instances of institutional inertia and change following the transition to democracy, an important first step is identifying the relevant actors involved in each case. Such a discussion also allows for a preliminary understanding of each actor's interests. This thereby improves insight into the political economy environment in which decisions are made. That is, it provides insight into the interaction of political and economic processes and the ways in which important actors in government and industry impact on the decision making process. Identifying and understanding the roles and interests of relevant actors, as well as relationships between actors, is an important first step in understanding the dynamics informing institutional inertia and change, as well as state support to the liquid fuels industry.

The Department of Minerals and Energy (DMEA), as well as its associated entities, were important actors in the maintenance of industry regulation and the continuation of import parity pricing. As previously discussed, the Department of Minerals and Energy was established in 1980. The DMEA was charged with multiple responsibilities, the first of which was regulating the price of fuel. The DMEA was also responsible for regulating liquid fuel imports and maintaining service levels in the liquid fuels industry. Finally, the DMEA was responsible for policy making in the industry (Marquard, 2006: 259)[27]. In 1993, in response to protests over increases in the price of petrol, the DMEA established a Liquid Fuels Industry Task Force (LFITF). The LFITF was charged with determining an appropriate and politically acceptable approach to setting the price of liquid fuels, as well as negotiating a new regulatory framework for the liquid fuels industry. However, the LFITF's success in achieving the latter goal was limited, in part due to actions on the part of the DMEA. The inability of the DMEA and the LFITF to reach an agreement on the future of the liquid fuels industry has in part informed the continuation of import parity pricing and industry regulation more broadly.

Although not directly involved in the termination of the Main Supply Agreement (MSA), it is useful to briefly mention the Competition Commission. This is because the termination of the MSA may have been in part informed by the introduction of competition law in 1998, although the Commission itself questions this motive (Competition Tribunal, 2006). Therefore, a brief

[27] However, policy making in the synthetic fuels industry was concentrated in the Department of Commerce and Industry (Marquard, 2006: 259).

discussion of the Competition Commission is also important as this was the actor that assessed Sasol's motives in terminating the MSA. The Competition Commission shed light on Sasol's interests which may have remained in the dark in the absence of the 2006 Competition Tribunal.

Also an important actor was the office of the Ministry of Finance and its associated departments. These actors were important in the decision making process across multiple instances of change and inertia. Included in the Minister of Finance's portfolio is the National Treasury, which is responsible for the South African government's financial affairs. Also included is the South African Revenue Service (SARS), which is responsible for collecting and administering national taxes. Both of these departments were important in determining policy and regulatory outcomes in the instances discussed below. In particular, these various departments were important in the decision against imposing a windfall tax on Sasol as well as in the establishment of the Tenth Schedule to the Income Tax Act. Interestingly, while these actors are charged with ensuring the financial performance of the state, the instances under investigation seem to suggest that these actors repeatedly capitulated to the interests of the liquid fuels producers. As will be discussed, these actors were important in choosing not to impose a windfall tax on Sasol, as well as in setting favourable taxes for the liquid fuels industry more broadly.

Finally, it is necessary to briefly discuss the relevant industry actors. With regards to the synthetic fuels producers, the instances of institutional change and inertia are largely focused on the role and interests of Sasol. The other oil companies (OOCs) are also important, although they will primarily be discussed as a group, having broadly similar interests, rather than as individual actors. While the interests of these actors converged during the early stages of the liquid fuels industry, further investigation into the major instances of change and inertia following the transition to democracy reveals that the synthetic fuel producer's interests diverged from those of the other oil companies active in the industry.

As will be demonstrated the following sections, the functions and interests of these actors impacted on the outcomes of institutional change and inertia in the cases under investigation. This then allows for a better understanding of the factors sustaining the liquid fuels subsidy regime and state support to the liquid fuels industry despite the major political change represented by the introduction of democracy in South Africa.

5.2. Industry Regulation and the Continuation of Import Parity Pricing

The history of the South African liquid fuels industry has shown repeated instances of institutional inertia. One area in which this has been most evident is in the continuation of industry regulation and import parity pricing more specifically. That this is the case is particularly interesting in light of the emphasis that the newly democratic state placed on industry deregulation. In further investigating this instance of institutional inertia, it is useful to begin in the early 1990s. This was when the debate regarding deregulation came to the fore. In doing so, the roles and interests of different actors will be discussed so as to explain the challenges involved in reaching an agreement on industry deregulation. The next stage in the debate began with the 1998 White Paper on the Energy Policy of the Republic of South Africa, which established as policy the government's intention to deregulate the industry. However, the events following the White Paper did not produce significant institutional change. Indeed, while the transition to the Basic Fuel Price (BFP) represented an incremental institutional change from the In Bond Landed Cost (IBLC), the maintenance of the regulated petrol price and of industry regulation provides evidence of institutional inertia and the continuation of the status quo. Using the historical institutional approach to understand and explain this case, this section argues that vested interests, path dependent processes and perceptions of sunk costs explain the endurance of the liquid fuels subsidy regime and state support to the liquid fuels industry following the transition to democracy

Before discussing the maintenance of import parity pricing and the transition to the BFP, it is useful to delve into a series of important events in the 1990s which preceded this transition. This discussion will provide preliminary insight into the political economy environment informing important decisions. Additionally, it traces the key historical events preceding the transition to the BFP, which is an important step in applying the historical institutional approach. In 1993, a Competition Board was commissioned to investigate the liquid fuels industry following the removal of the secrecy provisions that had previously clouded the industry. The Competition Board determined that the liquid fuels industry was 'fundamentally anti-competitive' and recommended that the Ratplan and petrol price regulation be removed (Marquard: 2006: 316). Indeed, the Competition Board noted that the introduction of competition in other locations had reduced prices paid by consumers considerably.

However, prior to the conclusion of the Competition Board's investigation, the Department of Minerals and Energy Affairs (DMEA) provided a report to Cabinet. In this report, the DMEA

argued that it was not possible to deregulate specific parts of the industry. The DMEA also argued that the deregulation of certain elements of the system was problematic as a change to the current system of regulation could not guarantee that the country would be better off over all (DMEA, cited in Marquard, 2006: 316). Consequently, in July 1993, the Cabinet determined that the liquid fuels industry would not undergo any deregulation. Although no conclusion can be reached in this regard, it is interesting to question whether deregulation was not pursued as this was perceived as a threat to the interests of the DMEA itself, as one of the Department's primary functions was to regulate the liquid fuels industry.

In September 1993, minibus taxi associations began protesting in response to a 7c/l rise in the price of petrol[28]. These early protesters were then joined by trade unions, in their capacity as petrol consumers. The increase in the price of petrol at the time was informed by the need to increase the retail and wholesale margins as well as a decline in the exchange rate (Crompton, 1998: 3). Prior to this increase, Crompton (1998: 3) notes that there had been three petrol price increases in the amount of 8c/l, 7c/l and 15 c/l. The resulting 30c/l increase produced a 21% increase in the price of petrol. Consequently, the protests were targeted at the recent increases in price as well as the secretive and unilateral ways in which the petroleum prices were determined (Marquard, 2006: 317).

As the protests succeeded in causing a political crisis for the apartheid state[29], government established a Liquid Fuels Industry Task Force (LFITF) to address the issue. The Task Force was responsible for determining a more politically acceptable petroleum pricing system as well as establishing a new regulatory framework (Marquard, 2006: 317). In response to the first objective, the LFITF proposed to the South African government that the petrol price be decreased by 2c/l. The cost of this reduction was borne by Sasol and the OOCs (Crompton, 1998: 6) and Table 3 below indicates the way in which this 2c/l reduction was produced. However, Marquard notes that it is unclear whether these parties actually lost out as a result of the reduction in the petrol price. The lack of clarity in this regard was due to the opaque way in which the 2c/l reduction was

[28]Minibus taxi associations in particular were frustrated with this price increase as they were unable to pass these increases along to customers, who often boycotted taxis in response to fare increases (Crompton, 1998: 4).
[29] At the time, the Congress of South African Trade Unions was beginning to take part in determining economic policy and was also angered about being excluded on the issue of petrol pricing and what it believed to be a unilateral price increase (Crompton, 1998: 4). Crompton notes that Labour called for 'accountable and transparent government now and not just in the future' (Minutes of meeting of 17 September 1993 in Crompton, 1998: 4).

extracted through levy payments, which funded the synfuel and mothballing subsidies, and funneled to the beneficiaries through the Central Energy Fund. Therefore, Marquard argues, it is not clear whether Sasol and the OOCs lost out in the long run due to the fact that the changes affected the collection mechanism, rather than the payment mechanism for these measures of support (Marquard, 2006: 318).

Government ultimately agreed to this proposal, thereby reducing the magnitude of the immediate political crisis. Also as a means of alleviating the crisis, from November 1993 to April 1994, the South African government transferred the responsibility for setting the petrol price to the LFITF.

Table 3: Breakdown of the 2c/l Reduction

Item	**Share of price reduction**	
Sasol: Synfuel tariff protection (subsidy) reduction	0.65 c/l	
CEF: Sasol loan commitment reduction	0.7 c/l	
Synfuels tariff protection reduction		1.3 c/l
Oil companies: synfuel levy reduction		0.7 c/l
Total		2.0 c/l

(Crompton, 1998: 6)

In response to the Task Team's second mandate – determining a more sustainable approach to setting the price of petroleum – the LFITF proposed two key solutions. Firstly, the LFITF recommended that the IBLC should be reassessed as it was above the competitive rate and granted benefits to the producers of liquid fuels. Key changes in this regard were reform to the refineries used to determine the IBLC. This was important as the refineries previously used to determine the regulated price were refineries owned by the OOC's operating in South Africa. Marquard notes that this was a significant change as there was a rumour that the oil majors owning these refineries used the refineries' posted prices to increase South Africa's regulated price. Therefore, the new refineries were considered to be more 'neutral' (Marquard, 2006: 318). Additionally, the shipping component was changed to reflect the rates of more appropriately-sized shipping vessels. There was also a shift from basing petroleum prices purely on the posted prices to a combination of 80% posted prices and 20% spot prices. The value of these adjustments and further alterations are captured in Table 4 below. Crompton (1998: 12) notes that these adjustments were structural in nature and produced a sustainable reduction to the price of petrol.

For their part, the oil companies did not appear to be happy with the changes to reduce the petrol price. Crompton (1998: 11) notes that in January 1994 the oil companies started to demand a 2.3c/l increase in the price they received for petrol, which they claimed they were owed since January 1993. According to the OOCs, they were owed these payments, which amounted to a total cost of R350 million, in terms of the MPAR formula. Alternatively, during this time, subsidy payments to Sasol were approximately R120 million per month. According to Crompton, this was a contributing factor to the tension between the OOCs and the synthetic fuels producer (1998: 11).

Secondly, the LFITF recommended that the process of determining petroleum prices should be removed from government oversight. Instead, the price should be determined by a transparent formula that would be regularly and automatically adjusted in response to changes in the import parity price (Marquard, 2006: 318). Consequently, the subsequent increases in the petrol price in 1994 did not spark as much outrage as the September 1993 increase. Indeed, removing the determination of petrol prices from the hands of government depoliticised the process thereby making it more difficult to blame the government for any price increases (Crompton, 1998: 3-4). According to Marquard (2006:318), these changes achieved their goal of establishing a more politically palatable method of determining prices. This is because the changes were successful in reducing the impact of price increases and collectively had a sustainable impact on the price of petrol by structurally revising the pricing formula. However, these changes can only be seen as incremental changes, adding on to, but not significantly altering, the institution of petrol price regulation. The implication of this fact is that these changes maintained the industry on the path of industry regulation.

Table 4: Adjustments and Associated Retail Price Reductions

Adjustment	**Reduction in retail price (c/l)**
Shift to 80% contract and 20% spot prices and adjustment to shipment container size	1.5
Synfuel subsidy reduction	0.39
Petronet tariff reduction	1.0
Equalisation Fund Levy reduction	3.6
Sub Total	6.49

(Crompton, 1998: 11)

With regards to its second mandate, the experience of the LFITF in reforming the regulatory regime was complicated by a number of issues in the political economy of the liquid fuels industry. The first issue was related to the difficulties of achieving a consensus on a policy framework after the transition from apartheid. This was due to ideological differences of the relevant actors concerning the question of regulation versus deregulation. An additional complication was created by the division between the synthetic fuels producers and the other oil companies due to the uncertainty raised by the creation of the new regulatory system and their relative positions within that system (Marquard, 2006: 318). Therefore, whereas the interests of the liquid fuels producers had generally been in line throughout the history of the industry, the potential change to the status quo gave rise to new divisions in interests. As the interests of these actors began to diverge, it was increasingly more difficult for the state to balance the interests of the different actors. That this was the case became more prominent as the debate continued, as will be demonstrated below.

Additionally, given that this process was undertaken in the midst of the transition to democracy, further issues in developing the new regulatory regime were related to the relevant government actors and their respective interests and roles. That is, the Department of Minerals and Energy Affairs (DMEA) – whose interests were in the maintenance of the existing system[30] – represented the apartheid government. However, the department was not able to present a policy position on behalf of government as the apartheid regime was removed mid-way through the process (Marquard, 2006: 319). The African National Congress (ANC), which replaced the apartheid government, was not directly represented in the process of determining the new regulatory framework. This was because political parties were excluded from the negotiation process (Crompton, 1998: 7). Additional complications were related to the fact that the ANC did not have a coherent policy position with regards to the liquid fuels industry. Indeed, the LFITF's union delegates were unable to get the ANC to specify a formal policy position, noting that, 'despite briefings and meetings with senior ANC leaders it proved impossible to raise the issue sufficiently high on the ANC's agenda to extract a formal policy position…' (Crompton, 1998: 9).

[30] Crompton (1998: 10) notes that the DMEA had to honour the regulatory system, which they were responsible for administering. Their role in this process was further complicated by their responsibility for protecting the Central Energy Fund and Mossgas, the parastatals that the DMEA oversaw. According to Crompton, the inability of the DMEA to act in accordance with a clear mandate produced delays in the process and is 'possibly the single most important reason for the demise of the LFITF' (Crompton, 1998: 10).

Furthermore, the unions were 'ideologically opposed to deregulation,' with one union representative stating that, '…there is no possibility of deregulation in South Africa – only of who controls regulations' (Crompton, 1998: 9). The Motor Industries Federation (subsequently, the Fuel Retailers Association) was also opposed to deregulation, in part due to the fact that the Ratplan guaranteed retail margins and protected them from the threat of vertical integration. Crompton (1998: 8) notes that the Black Fuel Retailers Association was also opposed to deregulation. This was because deregulation was perceived as a greater threat to their businesses than to white businesses. Accordingly, these actors had an interest in pursuing additional measures to protect and strengthen black business.

Conversely, Marquard (2006: 319) notes that the business caucus was in favour of deregulation. Indeed, '…there was an antipathy from the broader business community towards Sasol and the oil companies who were believed to be benefiting unduly from the state' (Crompton, 1998: 8). While business press targeted criticism at the regulatory system due to the belief that the liquid fuels industry had received extensive support from the state, the synthetic fuels producers were at the centre of this criticism.

The other oil companies capitalised on this opportunity to separate themselves from the synthetic fuels industry and the negative perceptions associated with it. Subsequently, Engen managed to broker an agreement with industry for a process of phased deregulation. Marquard (2006: 320) notes that the objective of the OOCs in this regard was to undermine the dominant position enjoyed by Sasol as a result of the regulatory framework. Indeed, deregulation aligned the OOCs with the business caucus against Sasol and was a safer option as there were 'more known parameters' involved in deregulation (Marquard, 2006: 320). As previously mentioned, this division between the synthetic fuel producers and the other oil companies became more prominent as the debate over deregulation continued.

In spite of these developments, the LFITF was unable to agree upon a common framework to reform the regulatory system. According to Crompton (1998), this was largely informed by the disparity of interests and agendas pursued by the relevant actors. Historical institutional concepts have been useful in understanding the developments up until this point. Indeed, the impact of vested interests were prominent, as important actors in the decision making process had interests in maintaining the status quo. Alternatively, other important actors, such as the African National

Congress, were not well organised with regards to liquid fuels policy. These actors were therefore in less of a position to introduce change to the system. Additionally, where change did occur, these changes were minor elaborations of the preexisting institutions and advanced the industry further down the regulatory path. Consequently, historical institutional concepts demonstrate the way in which the endurance of industry regulation during this period points to institutional inertia.

5.2.1. 1998 White Paper on the Energy Policy of South Africa

The 1998 White Paper on the Energy Policy of South Africa marked a change in the state's rhetoric on the question of deregulating the liquid fuels industry. Indeed, the liquid fuels section of the White Paper called for a process of 'phased deregulation' of the industry, which would be carried out in three phases. In the first phase of deregulation, the White Paper specified a number of milestones to be achieved, including approximately 25% ownership within the industry by historically disadvantaged South Africans (DMEA, 1998: 71). The second phase of deregulation included the removal of petroleum price regulation, import control, and the Ratplan. Finally, the third phase involved the state monitoring the industry and making any corrective actions necessary. However, the White Paper also noted that the synthetic fuels producers and OOCs should come to an agreement on the upliftment of the synthetic fuel producers' products as long as these producers did not have access to marketing (DMEA, 1998: 71).

This policy represented a critical juncture in that the structural and ideological influences on the institution of industry regulation were significantly relaxed with the state's new emphasis on deregulation (Capoccia & Kelemen, 2007: 343). Theoretically, this opened up the range of plausible decisions available to policy makers. However, a number of factors undermined the process of change, the first being that there is an issue built into the policy itself. Indeed, two of the concerns related to the debate over regulation versus deregulation appear to be in conflict with each other. As previously stated, one milestone to be achieved prior to deregulation is 25% BEE ownership. A second related concern is that deregulation will force smaller, less profitable players to be forced out of the market, causing industry rationalisation. Therefore, while the government's stated policy was in favour of deregulation, the implication of these two stated concerns is that they produce a circular argument that undermines the prospect for deregulation in the marketing sector.

As noted in the previous chapter, the developments which followed the White Paper on the Energy Policy of the Republic of South Africa were more in line with a process of 're-regulation' (Marquard, 2006: 324). While the Main Supply Agreement was subsequently removed, this was induced by Sasol, rather than the state. The Ratplan, rather than being completely removed, was replaced by a Department of Minerals and Energy-administered formal licensing process, in terms of the 2005 Petroleum Product Act. Therefore, while this institution underwent some change, it maintained regulatory barriers on entry to the liquid fuels industry.

Similar to the aforementioned institutions, the institution of petroleum price regulation underwent some change in the early 2000s. However, much like those institutions, these changes fell short of outright deregulation. In 2002, the In Bond Landed Cost (IBLC) was replaced by the Basic Fuel Price (BFP). The formula used to arrive at the BFP was a result of an agreement between the Department of Minerals and Energy and the members of the South African Petroleum Industry Association (SAPIA) (Trade and Industry Chamber, 2011: 34). This thereby demonstrated the continued cooperation between the state and liquid fuels industry in the post-apartheid era. It may also be argued that the transition to the BFP demonstrates the way in which learning effects contribute to path dependency, as opposition to high fuel prices forced government address the issue of price regulation. However, rather than removing the institution entirely, government introduced innovations to the pricing system so as to reduce the price to be more effective – that is, more acceptable to the South African consumer. In doing so, this allowed the institution of price regulation to remain in place.

The question is why import parity pricing continues despite the government's stated policy in favour of deregulation. In the process of the 2006 Competition Tribunal on the proposed merger of Sasol and Engen[31], the issue of petrol price regulation and the BFP were discussed. In his testimony to the Tribunal, Nhlanhla Gumede, then the Chief Director of the Hydrocarbons unit of the Department of Minerals and Energy, offers some insight into this issue. Firstly, Gumede noted that the White Paper states that as long as the petroleum price is regulated, the price would be

[31] Interestingly, over the course of the trial it was revealed that the attempted merger was at least in part an attempt to gain more control over the market, thereby enabling Sasol to exercise more control over prices (Competition Tribunal, 2006).

based on an import parity system (Engen Ltd, Sasol Ltd and Petronas International Corporation, 2005: 1828).

While this is not inherently an issue, the problem arises when the regulated price is not a true reflection of the import parity price, as was the case with the In Bond Landed Cost. This has also been raised as a possible issue with the BFP (Rustomjee et al, 2007: 18). For instance, in their testimony to the Competition Tribunal, BP repeatedly stated that the company believes that the BFP is not reflective of a true import parity price (Competition Tribunal, 2006: 26). Indeed, a BP representative indicated to the Competition Tribunal that 'in a deregulated market the maximum [price] here wouldn't be BFP. It would be a true import parity price, which in our estimation would be around 5c below BFP' (Engen Ltd, Sasol Ltd and Petronas International Corporation, 2005: 2957). The same view was also stated by Ernst Oberholster, the Managing Director of Sasol Oil at the time [32](Competition Tribunal, 2006: 26).

Secondly, Gumede noted that the continuation of regulation and of import parity pricing was related to the 'prevention of a bloodbath' (Engen Ltd, Sasol Ltd and Petronas International Corporation, 2005: 1770). On this issue, Gumede noted that the retail sector had 30% more service stations than the market needs, and that deregulation may force those service stations to close. Presumably, Gumede was referring to those stations that would be unprofitable in the absence of regulated margins. Related to this, Gumede noted the impact that this would have on employment (Engen Ltd, Sasol Ltd and Petronas International Corporation, 2005:1770). What these claims demonstrate is the way in which institutions create sunk costs, undermining the prospect for their change. That is, any change to the institution by deregulating the price of petrol is viewed as a net cost, due to the overinvestment in the retail industry (which has been encouraged by the prevailing institution) and the prospect for unemployment.

However, in order to gain an enhanced understanding of the political economy surrounding this issue, it is also important to note the interests and actions of other relevant actors. Over the course of the 2006 Competition Tribunal concerning the proposed merger of Sasol and Engen, evidence

[32] Mr. Oberholster states: *'..where we import from, we import from mega or where the numbers come from, from mega refineries, huge cost efficient refineries, BFP relates to, if you do that on a consistent basis, large volumes, it's a true import parity price. However in fully competitive, tough competing environment with people like Pick n Pay in the market, importing spot cargos all over the place, we do believe that there could be a lower import parity price, which will reflect in those markets and that would be, as I've said earlier, in the order of some 5c a litre below the current BFP price, which in fact is that 1.3% of the price today.'*

from multiple strategy documents revealed that a primary objective of Sasol is the maintenance of petrol price regulation. The Tribunal further revealed that the proposed merger was in part aimed at achieving this goal, noting that a presentation discussing the merger of Sasol/Engen lists, 'actively lobby the postponement of deregulation' as an objective of the joint venture (2006: 55). Indeed, a second document from 2002 noted (Sasol, cited in Competition Tribunal, 2006: 51),

> The objective is to establish and control a profitable, sufficiently large and effective marketing infrastructure on a national basis and focused in the main metropolitan areas *in order to protect and influence the wholesale fuel product price of the Sasol Group of Companies* [emphasis added].

This aim was reiterated in another internal Sasol document which stated, 'Primary objective: Creating leverage in wholesale fuel price to other oil companies by creating alternative distribution and value' (Sasol, cited in Competition Tribunal, 2006: 52). As well as for a fourth time in a company presentation, '…to influence the market price of fuels and in this way to protect the wholesale price to the oil companies'. And finally, a fifth time in a draft minute of a Sasol Oil board meeting, '…to enable us to grow our business and protect and influence the wholesale fuel price of the Sasol Group if required' (Sasol, cited in Competition Tribunal, 2006: 52). These excerpts serve a number of purposes. Firstly, they highlight the position of one of the major liquid fuels producers on the issue of petrol price deregulation and industry deregulation more broadly. Secondly, they highlight the actions undertaken by the company in an attempt to undermine the prospect for deregulation.

Conversely, BP has presented a view in favour of industry deregulation. Indeed, BP has noted that the company believes that the major issue with the price formula arises out of the difference in costs of production incurred by the coastal and inland refiners and manufacturers (Rustomjee et al, 2007: 69). Accordingly, Sasol was of the view that BP's drive to terminate the BFP would expedite the process of deregulation (Competition Tribunal, 2006: 55).

In investigating the failure of the state to deregulate the liquid fuels industry, it is also important to assess the extent to which the interests of the liquid fuels consumers are being represented. The ability of actors to influence policy outcomes depends on the extent to which they are able to organise (Baumgartner, 2009: 532). The Automobile Association of South Africa (AA), 'acts as a powerful lobby group on behalf of motorists with government and parastatals to protect and

enhance motorists' interests' (Automobile Association, n.d.). Accordingly, the AA has spoken out in favour of deregulation, noting the way in which the basis for determining the BFP is more than a decade old. The AA also called into question the fact that Sasol has an entirely different cost structure to that of the OOCs and therefore benefits disproportionately at the expense of consumers (Automobile Association, n.d.). However, in a separate statement, a former spokesperson for the AA has been quoted as saying that petrol price deregulation would put too many jobs at risk. As a result, the spokesperson concluded that deregulation was not worth the reduction in prices paid by motorists (Steyn, 2013). Therefore, it is not unreasonable to question the extent to which the inability of the AA to present a coherent view in favour of price deregulation has inhibited its influence on the decision making process.

While the transition to democracy and the 1998 White Paper on the Energy Policy of the Republic of South Africa created a critical juncture in the issue of liquid fuels industry regulation, the developments after these events demonstrate path-dependent processes. That is, due to the fact that deregulation was not pursued following these openings, the subsequent process of 're-regulation' sent the industry further along that path thereby making it, 'progressively more difficult to return to the initial point when multiple alternatives were still available' (Mahoney, 2000: 513). Therefore, applying the historical institutional approach to the case of industry regulation sheds light on the way in which the liquid fuels subsidy regime and state support to the liquid fuels industry in South Africa has continued despite major political change.

5.3. Termination of the Main Supply Agreement

Contrary to the previous case, the termination of the Main Supply Agreement (MSA) represented a major institutional change in the liquid fuels industry. The Main Supply Agreement (MSA) was the upliftment agreement between Sasol and the OOCs which stipulated that the OOCs uplift production from Sasol in order to satisfy their inland marketing requirements (Competition Tribunal, 2006: 11). The MSA was terminated in 2003, following Sasol's submission of its intention to terminate in 1998. The significance of this instance of institutional change relates to the fact that the MSA had been a core aspect of the liquid fuels regulatory framework since the establishment of Sasol. However, it is important to note that this institutional change was a result of Sasol's own actions, rather than action taken on the part of the South African government. That

this was the case highlights the emphasis that the historical institutional approach places on the role of agency in achieving institutional change.

While Sasol has claimed that its intentions in terminating the MSA were related to concerns over the anti-competitive nature of the agreement and the impending introduction of the new Competition Act in 1999, the Competition Tribunal has questioned Sasol's motives. Indeed, the report by the Competition Tribunal (2006: 45) states,

> From the perspective of competition law there can be no gainsaying the nature of the MSA. It constituted a market sharing and output limiting cartel between Sasol and the OOCs …The essential nature of the MSA is common cause – indeed Sasol has consistently maintained, *though not entirely convincing*, that its reason for terminating the agreement was because it was advised that it would fall foul of the Competition Act. [Emphasis added].

In highlighting ulterior motives on the part of Sasol in terminating the MSA, the Competition Tribunal noted that there were considerable changes taking place in the liquid fuels industry at the time. Accordingly, based on previous evidence, the Competition Tribunal (2006: 47) argued that Sasol's intentions were to preempt these changes to the company's advantage:

> The new South African government clearly intended to limit its role in the setting of fuel prices. It had already, to Sasol's express dissatisfaction, changed the basis for calculating the regulated wholesale and retail prices from IBLC to BFP[33]. It had stated its clear intention to de-regulate the retail market, also a measure resisted by Sasol …

Therefore, from this extract, as well as the extracts from Sasol documents discussed in the previous section, it seems evident that Sasol's intentions in this regard were to postpone market deregulation[34] by increasing its market power to put the company in a better position to actively lobby against deregulation. In addition, the Competition Tribunal argues that, due to diverging interests between the parties to the MSA, such a measure would have arraigned the OOCs in the

[33] Recall from the previous section that despite this change the regulated price remained higher than a true import parity price (Competition Tribunal, 2006: 26).

[34] Oberholster, Managing Director of Sasol at the time, also testified, 'Margins generally for the oil industry in a regulated environment tend to be higher than in a deregulated environment. So therefore if deregulation was to be postponed, it will be more profitable for Uhambo and for Sasol…' (Competition Tribunal, 2006: 54-55).

inland retail market against Sasol. As a result, the Tribunal argued, the company had an interest in reconstituting the liquid fuels market.

Furthermore, the Competition Tribunal notes that Sasol's terminating the MSA coincided with a second important market development. Namely, logistical constraints in the pipeline network for white products between the coastal and inland markets granted Sasol considerable market power in the inland market (Competition Tribunal, 2006: 47). Accordingly, Sasol acted preemptively in terminating the MSA so as to prevent the OOCs from increasing their share of sales in the inland market. Therefore, while the interests of Sasol and the state in ensuring the success of the synthetic fuels industry protected the MSA for decades, the changing political economy during this period altered the interests of the synthetic fuels producer. In this new environment, from Sasol's perspective, the current and future costs of the MSA outweighed the benefits[35]. Consequently, Sasol's new interests were in ensuring its control over the liquid fuels market by any means necessary. Table 5 below indicates the sale of petrol through service stations by market share while Table 6 indicates sale of petrol to commercial and industrial customers by market share.

Table 5: Sale of Petrol through Service Stations by Market Share (%) (circa 2005)

Province	BP	Caltex	TOTAL	Shell	Engen	Sasol	Total
Eastern Cape	17	18	16	18	28	3	100
Free State	11	21	8	24	24	12	100
Gauteng	17	15	12	16	29	11	100
KZN	19	19	12	23	26	1	100
Limpopo	10	18	21	15	24	12	100
Mpumalanga	9	14	24	13	28	12	100
North West	11	17	12	16	29	14	100
N Cape	13	36	6	20	21	4	100
W Cape	19	21	11	20	27	1	100

(Competition Tribunal, 2006: 70)

Table 6: Sale of Petrol to Commercial and Industrial Customers by Market Share (%) (circa 2005)

[35] It would be useful to know the true costs and benefits to Sasol as a result of the termination of the MSA so as to determine whether it was in fact beneficial to the company to terminate the MSA. However, no information in this regard was identified in the public domain and would necessitate information and data from Sasol to accurately estimate the net result.

Province	BP	Caltex	Total	Shell	Engen	Sasol	Total
Eastern Cape	12	5	37	18	20	8	100
Free State	11	8	24	17	25	14	100
Gauteng	20	3	25	7	24	21	100
KZN	18	4	36	9	29	3	100
Limpopo	6	5	45	12	19	12	100
Mpumalanga	18	5	36	15	19	8	100
North West	24	14	19	9	27	7	100
N Cape	38	5	21	19	12	6	100
W Cape	17	5	24	15	23	16	100

(Competition Tribunal, 2006: 71)

This instance of change was unique to the other instances covered in this chapter as the termination of the MSA represented a fundamental institutional change in the liquid fuels industry, not a mere instance of institutional inertia masquerading as institutional change. However, while the South African government established as policy its intention to deregulate the liquid fuels market, the removal of the MSA, which was a core aspect of the regulatory dispensation since Sasol's establishment, was undertaken by Sasol. This instance of institutional change is also interesting as it demonstrates the ease with which an institution may be removed when it is in the interest of certain actors. This institutional change, while removing a primary regulatory benefit enjoyed by Sasol, resulted in further benefits to the synthetic fuels producer as it consolidated Sasol's market power in the inland market. In line with historical institutional thinking, this case demonstrates the way in which institutional change may not solely be a result of an exogenous shock, but that agency also has an important role to play in producing institutional change.

5.4. The Proposed Windfall Tax on Sasol

The institution under investigation in this case is different from the other institutions mentioned in this chapter as it does not refer to a single regulatory element that can be traced throughout the history of the liquid fuels industry. Instead, this section is concerned with the broader institution of financial support extended to Sasol by the South African government. While this has existed in various forms throughout the history of the industry – previously, it was in the form of tariff protection – this case is concerned with the state's decision not to impose a windfall tax on Sasol. Similar to previous measures of support, the decision to not impose a windfall tax is also related

to the price the company receives for its products[36]. In applying historical institutionalism to understand the National Treasury's decision against imposing a windfall tax on the synthetic fuels producers, it is useful to consider the influence of the vested interests of relevant actors. Also important in this regard is the historically developed relationship between Sasol and the South African government. In doing so, this section argues that the failure to implement a windfall tax against Sasol provides further evidence of the way in which the liquid fuels subsidy regime and state support to the liquid fuels industry –and, the synthetic fuels industry in particular –have continued.

In May 2006, then Minister of Finance Trevor A. Manuel announced that a task team would be appointed to investigate whether the synthetic fuels industry was generating windfall profits. Additionally, the team was tasked with determining whether a windfall tax should be implemented to ameliorate any excessive profits. The decision in this regard was informed by changes in the international market for crude oil as it was believed that there had been a possible structural increase in the price of Brent crude oil[37].

The Task Team's report began by reviewing the development of the liquid fuels industry in South Africa, particularly noting the regulatory and financial incentives extended by the state to the synthetic fuels producers (Rustomjee et al, 2007). With regards to the potential generation of excessive profits on the part of these producers, the Task Team made a number of important findings. The first finding was that during times of high oil prices, there is a structural propensity for the synthetic fuels producers to generate excessive economic profits. The report notes that this was a result of the differing cost structures between the synthetic fuels producers and the OOCs. Also important in this regard was the basis on which the price of petroleum was determined (Rustomjee et al, 2007: 13). As a consequence of these concerns, the Task Team concluded that a windfall tax should be imposed on the existing synthetic fuels producers. Additionally, the Task Team recommended additional reforms to the regulatory regime, including an overhaul of the

[36] The connection between tariff protection and the issue of the windfall profits generated by Sasol relates to the fact that, when the tariff protection system was in use, there was an element that stipulated that above a certain price, Sasol would pay money back in to the Equalisation Fund. In addressing the issue of windfall profits, the idea is that the company had generated too much profit during times of high oil prices and should have to pay some share of that profit back, similar to the tariff protection mechanism.

[37] Between 2003 and the third quarter of 2005, the price of crude oil had increased from an average price of US$29/barrel to a high of US$60/barrel (National Treasury, 2007: 1).

import parity price. More specifically, the report noted that the formula according to which the BFP was determined should be reassessed so as to be more reflective of a 'true import parity' price as it was believed to be too high (Rustomjee et al, 2007: 18).

Furthermore, the Task Team raised the concern that regulatory reforms could not adequately address the excessive profits generated as a result of certain revenue and cost elements in the value chain. One key concern in this regard was the propensity for inland producers, primarily Sasol and Natref, to generate windfall profits as a result of logistical constraints related to inadequate transport infrastructure[38]. Consequently, the Task Team recommended that a tax should be imposed on the volume of petrol that OOCs were obliged to purchase from Sasol due to logistical constraints on transporting fuel to the inland market, called the 'must have volumes' (Rustomjee et al, 2007: 19). Finally, the Task Team recommended an investigation into whether Sasol was required to repay the subsidies received by the company during the Pim Goldby subsidy regime.

In the National Treasury's response to the Task Team's findings, the Treasury noted three strategic interests and concerns that were taken into account when considering the recommendations put forward by the Task Team. These included, firstly, the negative impact on investment caused by a new tax. That is, the response notes that maintaining regulatory and fiscal certainty for the energy companies operating in South Africa is important and that any changes to this environment may discourage investment. Secondly, the response raised concerns relating to constraints on the supply of electricity and liquid fuels faced by the country at the time[39]. Finally, Treasury also noted concerns over adherence to higher environmental standards[40] (National Treasury, 2007: 3).

In the conclusion to the response, Treasury stated that it agreed with the Task Team that excessive profits had been generated in South Africa's synthetic fuel industry. However, Treasury noted that it was unable to be determined whether these windfalls had been generated as a result of a permanent change in the international price of Brent crude oil. Accordingly, the report concluded that it would not be appropriate to impose a windfall tax on the synthetic fuel producers – primarily Sasol. Importantly, Treasury highlighted that it is a matter of national interest that synthetic fuels

[38] Recall from the previous section that logistical constraints granted Sasol considerable market power in the inland market.
[39] This concern appears to relate to the need to avoid exacerbating these constraints by imposing a tax.
[40] This appears to refer to the need to avoid imposing additional costs that would detract from investments in technology to pursue higher environmental standards.

producers, namely Sasol, continue to invest in synthetic fuel technology. Further, National Treasury emphasised that, in the interest of energy security, any public interventions should 'focus on facilitating the expansion of liquid fuel supply capacity' (National Treasury, 2007: 4).

Recall from the previous chapter that these interests are similar to those put forward by Treasury to excuse Sasol from the company's obligation to repay subsidies received during the Pim Goldby era. That is, Sasol was released from this obligation '*provided it continued to develop the petrochemicals sector*' [emphasis added] (National Treasury, 2007: 3). Indeed, this interest is clearly reiterated in National Treasury's response opposing the imposition of a windfall tax, stating, '…we hold Sasol to its commitment to significantly expand its synthetic fuel production capacity in support of the national interest in terms of fuel security and macroeconomic stability' (National Treasury, 2007: 4). However, while Treasury highlights Sasol's proposal to build a new coal to liquid (CTL) plant (Project Mafutha) as evidence of the company's efforts in expanding the synthetic fuels industry, it is important to note that this project was suspended in 2010 and has not had any progress since (Njobeni, 2012). That this is the case is interesting as it is similar to the case of the South African government continuing to offer tariff protection to Sasol in 1996, provided the company created 50,000 sustainable jobs. Recall that the company similarly failed to meet this obligation. These persistent narratives around Sasol as key to investment in the industry and employment, which continue despite Sasol's failure to meet stipulated agreements, provide evidence of the way in which discourse may contribute to institutional path dependency.

Treasury also responded to the Task Team's recommendation that a tax be imposed on Sasol's 'must have volumes' of liquid fuels supplied to the inland market. Treasury stated that government had decided not to consider a tax on these volumes, but would explore a tax on refined products in order to provide financing for the new Multi-Product Pipeline (National Treasury, 2007: 5). No evidence was found to indicate whether or not this happened. Additionally, as mentioned previously, Treasury noted that Sasol was released from its obligation to repay the subsidies generated during the Pim Goldby subsidy regime. Finally, the National Treasury's response failed to acknowledge the Task Team's recommendation that the BFP be reformed (National Treasury, 2007).

What is interesting about this case is that there appears to be two parallel formal orders at play. In the first, the National Treasury ordered the establishment of a task team to investigate potential

windfall profits in the synthetic fuels industry, thereby paying lip service to an issue under scrutiny at the time. In the second order, however, the National Treasury decided not to impose a tax, despite the finding that excessive profits had been generated and that there were further issues in the regulatory regime. The implication of this outcome is that, while seemingly giving the issue its due regard, the National Treasury ultimately maintained the status quo by choosing to financially support Sasol by not imposing any taxes on the company. This case is also interesting as it provides further insight into the nature of the relationship between the state and Sasol and the way in which Sasol's interests appear to be prioritised by the state. Drawing on historical institutional concepts, this discussion of the National Treasury's decision against imposing a windfall tax on Sasol demonstrates the way in which the liquid fuels subsidy regime and state support to the liquid fuels industry has continued following the transition to democracy.

5.5. Transition from the OP26 to the Tenth Schedule to the Income Tax Act

Prior to 2006, the OP26 was the tax regime applicable to oil and gas companies undertaking exploration and upstream production in South Africa. While the expiration of the OP26 and subsequent transition to the Income Tax Act in 2006 represented a major change to an institution which had been in place for four decades, further analysis of the contents of the two regimes reveals more institutional inertia than is readily apparent. Indeed, although the Tenth Schedule to the Income Tax Act is more transparent than the OP26, this tax regime retains the core elements of its predecessor. Similar to the aforementioned cases, the historical institutional approach assists in understanding this instance of institutional inertia as it sheds light on the endurance of the liquid fuels subsidy regime and state support to the liquid fuels industry following the transition to democracy.

The introduction of the Tenth Schedule to the Income Tax Act in 2006 was informed by a number of considerations. Firstly, as the OP26 was due to expire in 2007, the South African Revenue Services (SARS) needed to design a new tax regime. This was particularly important as it was aware that the oil and gas companies were postponing further investment due to the uncertainty caused by the end of the OP26 and content of the new fiscal provisions (National Treasury, 2006: 16). The second influential factor was the democratic state's desire to introduce more transparency to the industry, which had previously been veiled in secrecy. However, rather than creating a new tax regime entirely, the Explanatory Memorandum notes that the aim of introducing the Tenth

Schedule was to 'formalise key aspects of the OP26 into explicit law' (National Treasury, 2006: 16). The reason for this is largely due to vested interests as the Explanatory Memorandum notes that, 'few active companies in the area would remain interested if the key features of the OP26 regime are not renewed' (National Treasury, 2006: 16).

This demonstrates the way in which adaptive expectations lead to path dependency, as the content of Tenth Schedule was informed by the state's expectations about the actions of the active oil and gas companies in the country. In this regard, the decision to maintain the favourable provisions of the OP26 reflects institutional sunk costs. This is because the comments reflect that there was a perception among National Treasury that the cost of removing the provisions in pursuit of another policy path was too high as some active companies may disinvest in the absence of these provisions.

Accordingly, the Tenth Schedule retained the OP26 provisions related to the full deduction of operating and capital expenses. The new tax regime also retained the aspect which specified that custom duties are not applied to imported equipment and machinery for mining operations (Futter, 2010: 94). However, while retaining many of the core aspects of the OP26, it has been argued that some aspects of the Tenth Schedule are in fact more favourable than the previous tax regime[41]. For instance, while capital expenditure enjoys a full deduction under both regimes, capital expenditure under the Tenth Schedule benefits from additional tax deductions. Indeed, expenditure related to exploration enjoy a 200% deduction, while capital expenditure related to production activities enjoys a 150% super deduction[42]. Additionally, Futter (2010: 22) notes that 28% cap on the corporate income tax rate under the Tenth Schedule is more favourable than that provided for under the OP26 regime. That this is the case is significant as the new tax regime both retained and expanded the tax subsidies enjoyed by the liquid fuel producers, thereby maintaining and reinforcing the liquid fuels subsidy regime.

On the face of it, the termination of the OP26 appeared to represent a considerable institutional change as this was the tax regime that had been in place over many decades. Its termination was also significant due to the fact that it also changed the system of secrecy built into the liquid fuels

[41] Alternatively, some of the aspects are also less favourable.
[42] The implication of these provisions is that the deduction of losses and expenditures are limited to the year in which they are incurred (Futter, 2010: 70).

industry as more transparency was introduced by the new Tenth Schedule to the Income Tax Act. However, further investigation of the content of the two regimes reveals that the most favourable aspects of the OP26 were retained in the new tax regime and that additional favourable provisions were also added. While it is important to acknowledge that the initial incentives existed due to the 'high-risk, high-cost' nature of the industry, what is important here is the expectations created by the incentives. That this is the case points to the endurance of institutions as incentives create state-industry dynamics which are not easily removed. It also provides support to the historical institutionalist argument that any institutional revisions which occur are often channeled and constrained by previous institutional choices and arrangements (Pierson, 2004: 288). Accordingly, despite the creation of the Tenth Schedule Income Tax Act in 2006, the content of the new regime points more towards vested interests and perceptions of sunk costs contributing to institutional inertia, as the liquid fuels subsidy regime and state support to the liquid fuels industry continued.

5.6. Conclusion

A number of changes took place in the liquid fuels industry following the transition to democracy. However, these changes were largely incremental in nature and retained the core foundation of the former institutions. That this is the case is interesting not only because the transition from apartheid created an opening for major political change throughout the state, but also because the government's stated policy and rhetoric often pointed towards more fundamental change. Instead, the cases of the endurance of industry regulation, the decision not to impose a windfall tax on the synthetic fuels producers and the transition to the Tenth Schedule point to institutional inertia. The only large institutional change within the liquid fuels industry was the termination of the Main Supply Agreement (MSA), which was induced by Sasol, rather than the South African state. One important finding that emerged from some of these instances was the way in which Sasol's interests appear to trump the interests of other industry actors. The historical institutional approach assists in understanding and explaining these instances of institutional inertia and change for the way in which is applies the concepts of sunk costs, path dependency, critical junctures as well as the influence of vested interests. In doing so, the approach sheds light on the reasons for which the liquid fuels subsidy regime and state support to the liquid fuels industry has continued despite major political change.

VI. Subsidies to the Liquid Fuels Industry: Who Benefits and How?

In order to adequately address the endurance of the liquid fuels subsidy regime in the post-apartheid era, it is necessary to identify the actors who continue to enjoy subsidies as well as the various ways in which liquid fuels production is subsidised. The previous chapters largely focused on the content of policies and regulations providing subsidies and other measures of support to liquid fuels producers, and aimed to understand and explain the factors that have contributed to the endurance of these support measures. Conversely, this chapter aims to quantify the various measures of support that are witnessed in the present in order to provide evidence of the endurance of the liquid fuels subsidy regime. Given South Africa's history of petrol price regulation, an appropriate definition of subsidy should be able to capture direct subsidies as well as the more indirect subsidies, particularly those related to market price support. In line with this definition, direct transfers are the first subsidy category under consideration. Many of the beneficiaries of these subsidies are state owned companies receiving direct payments from the state or from other entities acting on behalf of the state. Tax expenditures resulting in subsidies to liquid fuels producers as a result of government revenue foregone are also discussed. Finally, market price transfers from consumers to producers, primarily Sasol, are considered. Highlighting these subsidies to liquid fuels producers and applying the historical institutional approach to understand these subsidies, this chapter argues that the liquid fuels subsidy regime and state support to the liquid fuels industry have continued despite major political change.

6.1. Subsidy Definition

Before delving into the types of subsidies observed in South Africa's liquid fuels industry, it is useful to briefly review the definition of a subsidy that was first provided in Chapter Two. As noted in Chapter Two, countries adopt a number of different approaches to subsidising the fossil fuels industry. Accordingly, it is important to define subsidies to the liquid fuels industry in a way that adequately captures the varied ways in which the synthetic fuels producers and OOCs have received financial support from both the South African government and consumers. Consequently, this study begins by adopting the definition of subsidy set out by the WTO's Agreement on Subsidies and Countervailing Measures (ASCM), with an additional subsidy type as specified by the Organisation for Economic Cooperation and Development. This approach has support in the international literature on subsidies as it has previously been adopted by other organisations studying subsidies, such as the Global Subsidies Initiative. Furthermore, this approach is sensitive

to the historical ways in which South Africa has subsidised liquid fuels producers and is able to capture the ways in which these types of support continue.

The WTO's Agreement on Subsidies and Countervailing Measures (ASCM) provides the foundation for defining a subsidy. It is the most widely accepted definition of a subsidy, having been agreed to by the WTO's member states. According to the Agreement, subsidisation confers a benefit to some entity and involves 'a financial contribution by a government or any public body within the territory of a Member…or price support[43] in the sense of Article XVI of GATT 1994' (WTO, 1994: 229). The types of subsidies captured by this definition which are witnessed in the South African liquid fuels industry can be found in Table 7 below.

However, as the ASCM does not include market price support (MPS), the present study expands the definition of a subsidy to include this measure[44]. MPS creates transfers between consumers and producers as a result of fuel price regulation. The inclusion of this measure was deemed to be necessary as the regulation of petroleum prices in South Africa has historically benefited the synthetic fuel producers and OOCs at the expense of motorists.

Such an approach to defining subsidies has support in the subsidies literature, and has been used by international organisations concerned with measuring subsidies to various industry, such as the Global Subsidies Initiative (GSI) (GSI, 2010b). Therefore, Table 7Table 7 below captures subsidies types which fall under the ASCM definition (columns one and two from the left), as well as the OECD's market price support (column three from the left).

This definition therefore offers a complete view of the ways in which liquid fuel production has been, and continues to be, subsidised by the South African state and liquid fuels consumers. The definition set out in the ASCM captures direct transfers as well as the more implicit or indirect subsidies arising out of tax expenditures. The addition of the OECD's measure of market price support is also able to account for the more indirect ways in which liquid fuels consumers subsidise liquid fuels producers as a result of the regulated price of petroleum. In doing so, this approach demonstrates the way in which the liquid fuels subsidy regime and state support to the liquid fuels industry have continued to present.

[43] This refers to any price support that decreases the number of imports into a member territory or increases the number of exports (World Trade Organisation, 2016).
[44] This is similar to the International Energy Agency's definition of subsidy, as measured by the price-gap approach.

Table 7: An Illustrative List of Subsidies to Liquid Fuels Production in South Africa

Direct transfer or potential direct transfer of funds	Government revenue foregone	Income or price support, or relief from normal costs or procedures
Direct payments	Tax expenditure: reduced tax rates, exemptions, rebates	Above-market rate prices for producers via government regulations or import barriers
Grants	Accelerated depreciation allowances	
Guarantees for loans, security or credit		
Government spending on research and development		
Loans provided at rates or under conditions below those that would prevail in a normal market		

(Adopted from Global Subsidies Initiative, 2010b: 4-5)

6.2. Direct Transfers

The first approach to subsidising liquid fuel production is by use of direct transfers, which refers to direct budgetary outlays for the purpose of fossil fuel energy production (Koplow, 2015: 4). As these figures are accounted for in the national budget, these are the most 'visible' form of policy transfers (OECD Secretariat, 2015: 27). In accounting for direct transfers, both the WTO and the OECD note the importance of measuring direct transfers from the government fiscus, as well as transfers originating from other public entities. Through identifying these subsidies, this section argues that the use of direct transfers to liquid fuel production has maintained the liquid fuels subsidies regime and been a key aspect of state support to the liquid fuels industry.

PetroSA, South Africa's state-owned oil and gas company, has benefited from government subsidies in the form of government grants for personnel training on projects (PetroSA, 2013: 123). While the particular projects benefiting from grants are unspecified, it is assumed that these financial benefits accrue to fossil fuel production given the fact that PetroSA's core business activities are related to the exploration, production and marketing of oil and gas products (PetroSA, 2013: 7). Support in this regard spanned five years, with total subsidies to PetroSA amounting to R20.2 million between 2009 and 2013 (2012 rands) (PetroSA, 2010: 134; PetroSA, 2012: 121; PetroSA, 2013: 123).

This financial support from the South African government to PetroSA should be understood based on a number of key considerations. Firstly, from a historical institutional perspective it is important to consider the history of state subsidisation first enjoyed by Soekor and Mossgas, from which the company was formed. Accordingly, the state's practice of extending financial and other benefits to PetroSA is an extension of the institution of subsidisation first enjoyed by the company's predecessors. Also important in this regard is the relationship established between the state and PetroSA as the company continues to be a state-owned enterprise. Finally, support to PetroSA should also be considered in the context of the state's emphasis on the synthetic fuels industry more broadly, which has historically benefited from extensive support from the South African government, as evidenced in Chapters Four and Five.

When accounting for direct transfers, it is important to measure all financing offered through public institutions. This fact is particularly important in the context of South Africa, where a number of agencies are responsible for overseeing energy and environment-related activities. For example, the Central Energy Fund (CEF) used R418.7 million in expenditure between 2010/2011 and 2014/2015 for the promotion of natural gas and oil exploration and production (2012 rands) (National Treasury, 2014: 688; National Treasury, 2015: 476). A further R117 million in expenditure was estimated for the 2015/2016 financial year (National Treasury, 2016a: 476). Additionally, in 2013, CEF allocated R217 million to the South African National Energy Development Institute (SANEDI) to be used over the medium-term. However, it appears that only R164.4 million of this amount was used, with R67 million appropriated in 2013/2014 and R97.4 million in 2014/2015. These financial transfers were for the purposes of funding SANEDI's operations, as well as for undertaking research and development concerned with hydraulic fracturing and carbon capture projects (National Treasury, 2015: 474).

The fact that CEF is both a beneficiary and a distributor of subsidies should be considered in the context of the institution's history. The State Oil Fund, which was later renamed CEF, was established to assist with the capital costs associated with the construction of Sasol 2 and 3 and provided low interest rate loans to the company in this regard (Marquard, 2006: 269, 298). Accordingly, CEF has historically been a key aspect of the liquid fuels subsidy regime and an institution through which the South African state has extended support to the liquid fuels regime.

Subsidies to fossil fuel production in South Africa can also be identified in the transport step of the value chain. The Hydrocarbon Policy subprogramme is concerned with ensuring secure supply of energy and enhancing access to hydrocarbon resources. Under this subprogramme, a total of R4 843 million in subsidies were transferred to Transnet between financial years 2010/2011 and 2012/2013 (2012 rands). The financing was collected through an additional levy on the fuel price and the transfers were used to support the commissioning of the new multi-products pipeline[45]. The aim of this pipeline was to minimise constraints faced in supplying liquid fuels from Durban to the inland markets of Gauteng, and resulted in average annual transfers of R1 614 million over the three year period (National Treasury, 2014: 673). The aforementioned subsidies have been captured in Table 8 below.

Table 8: Direct Transfers to the Liquid Fuels Industry in South Africa

Subsidy	Type of subsidy	2009 estimate (Rm)	2010 estimate (Rm)	2011 estimate (Rm)	2012 estimate (Rm)	2013 estimate (Rm)	2014 estimate (Rm)	2015 estimate (Rm)	Total estimate (Rm)
PetroSA	Government funding	5.37	3.79	3.71	3.09	4.24	-	-	20.20
CEF	Government Funding	-	97.92	64.84	75.50	78.87	101.54	116.98	535.65
SANEDI	Government funding	-	-	-	-	66.98	97.41	-	164.39
Transnet Pipeline	Government funding	-	1,614.33	1,614.33	1,614.33	-	-	-	4,843.00
Total		5.37	1,716.04	1682.88	1,692.92	150.09	198.95	116.98	5,563.23

A number of actors can be seen to have benefited from direct transfers from the South African government. The primary beneficiaries of these types of subsidies include PetroSA, the Central Energy Fund, SANEDI and Transnet. These transfers should not be considered as once off occurrences, however. Instead, they should be understood in the context of a longer history of state support to the production of liquid fuels. Such an approach provides for an understanding of the

[45] The construction of this pipeline was informed by a need to add transport capacity to the constrained logistics network. This was in part informed by the fact that Petronet, which preceded Transnet, reached an agreement with Sasol to convert the crude oil and Durban-Witwatersrand pipelines to transport methane rich gas in 1995. The implication of this decision was that only Sasol's products could be transported in the newly converted pipeline, thereby producing the logistical constraints referred to in the previous chapter (Competition Tribunal, 2006: 142).

maintenance of the liquid fuels subsidy regime and state support to the liquid fuels industry in the post-apartheid era.

6.3. Government Revenue Foregone

Fossil fuel producers can also be subsidised by use of tax expenditures, which are deviations from a benchmark tax that reduce the amount of revenue collected from producers. Notably, the GSI has found that producer subsidies are most often in the form of government revenue foregone (GSI, 2010a). However, these are more indirect forms of subsidies and are not as easily measured. In the context of South Africa, these subsidies occur as a result of the provisions of the Tenth Schedule, which allows for super deductions on oil and gas exploration and production activities. Government revenue is also foregone as a result of the super deduction allowances on research and development activities. It is important to note that the institutions themselves are not subsidies, but rather they confer subsidies for those producers that access them so as to reduce tax liability. Similar to the previous sections, this section argues that these subsidies provide yet further evidence of the maintenance of the liquid fuels subsidy regime following the transition to democracy.

Similar to direct budgetary spending, tax expenditure measures effectively reduce the cost of producing fossil fuels below that which would prevail under a standard tax treatment. However, unlike budgetary spending, tax expenditures are seldom determined within the budgetary framework and do not require legislative approval annually. As a result, tax expenditures are not often subject to the same scrutiny and spending discipline experienced by budgetary transfers (Kojima & Koplow, 2015: 27).

In calculating the value of subsidies resulting from tax expenditures, it is important to establish a counterfactual against which to measure the value of the subsidy. According to the international subsidies literature, the ex post assessment, which estimates government revenue foregone, is the most common approach used to estimate subsidies from tax expenditures (Kojima and Koplow, 2005: 27). On this, Bruce (1990: 13) explains, “the value of a tax expenditure is calculated as the value foregone as a result of a special tax preference using the existing tax rate structure”. That is, it is the difference between the tax paid under the preferential provision and the tax that would have been paid under a standard tax treatment, taking into account each producer accessing the preferential tax provisions.

While estimates of the value of these subsidies were not able to be undertaken due to lack of data, it is important to identify the tax expenditures in South Africa that result in subsidies to liquid fuels producers. In the liquid fuels sector, expenditure related to research and development benefits from a tax deduction in the amount of 150% of the research and development-related investment. Additionally, the Tenth Schedule to the Income Tax Act specifies that capital expenditure related to liquid fuels exploration activities also enjoys tax deductions, equal to 200% of the exploration-related investment. Alternatively, capital expenditure related to post-exploration activities, such as in processing and separation, attracts a tax deduction equal to 150% of the investment (Ernst and Young, 2015: 549). Garg and Kitson (2015: 3) also noted these tax expenditures as conferring subsidies to oil and gas producers, and estimated the value of government revenue foregone as a result of the 200% super deduction on exploration activities to be up to R3.0 billion in 2013. These deductions are indicated in Table 9 below.

Table 9: Government Revenue Foregone

Subsidy type	2009 estimate (Rm)	2010 estimate (Rm)	2011 estimate (Rm)	2012 estimate (Rm)	2013 estimate (Rm)	2014 estimate (Rm)	2015 estimate (Rm)	Total estimate (Rm)
Tax break (Exploration)	-	-	-	-	-	-	-	-
Tax break (Production)	-	-	-	-	-	-	-	-
Tax Break (R&D)	-	-	-	-	-	-	-	-

Tax expenditures in South Africa result in subsidies to liquid fuels producers as a result of government revenue foregone. As these foregone revenues are not reflected in the fiscus and the data necessary to calculate their value are not published, the value of these subsidies is not easily measured. Furthermore, as the deductions related to exploration and production activities are built into the Tenth Schedule, the tax regime which succeeded the OP 26, these favourable tax treatments provide evidence of institutional inertia in the tax regime applicable to the liquid fuels sector. That this is the case reflects the maintenance of the liquid fuels subsidy regime and state support to the liquid fuels industry despite the radical political change represented by the end of apartheid.

6.4. Market Price Transfers

The final approach to subsidising the production of liquid fuels is as a result of market price transfers. Market price transfers arise due *to policy interventions*, such as price regulation, and create transfers between consumers and producers (OECD Secretariat, 2010: 19). In the context of South Africa, such transfers occur as a result of the regulated price of petroleum. Indeed, the previous two chapters have discussed the ways in which the two pricing structures which have been used to determine the petrol price in South Africa are higher than true import parity prices (Competition Tribunal, 2006: 26). Accordingly, capturing this type of support is important as it provides evidence of the endurance of the liquid fuels subsidy regime and state support to the liquid fuels producers.

While the supracompetitive value of the BFP, which as previously noted is above a true IPP (Rustomjee et al, 2007: 97), results in price transfers to all of the liquid fuels producers in South Africa, this section argues that Sasol has benefited disproportionately as a result of the regulated price. This is particularly important in the context of the long history of price support received by Sasol, including the tariff protection referred to in the previous chapters.

The first reason for arguing that Sasol benefits from the IPP disproportionately is related to the fact that Sasol accepts an import parity price despite the fact that its inputs and products are domestically produced[46], and therefore not linked to fluctuations in the international price of crude oil. That this is the case provides evidence of the difficulty of removing entrenched institutions, particularly when actors have an interest in maintaining these institutions, as the previous chapter demonstrated Sasol's actions aimed at maintaining price regulation.

The second reason for arguing that Sasol benefits from the regulated price disproportionately relates to the reduction in its cost base relative to the price of oil. When Sasol was first established, it was determined that the company would accept an import parity price so as to *ensure its financial success* (Sparks, 2016: 1; Cronin, 2013). However, Sasol continues to accept this price, despite the fact that the company's costs have since decreased considerably. Recall that this concern was referred to in the previous chapter as BP pointed out that the primary issue with the BFP relates to the difference in cost structures between inland and coastal refiners (Rustomjee et al, 2007: 69).

[46] Although it should be noted that, as the BFP is the regulated market price, this will be the price charged by all market players.

Related to this, the Competition Tribunal has also described the 'highly competitive oil-from-coal feedstock' and how this has assisted in bringing down Sasol's costs relative to the OOCs and to the price of oil (Competition Tribunal, 2006: 43).

While the exact cost per barrel is treated as proprietary knowledge, it is estimated that Sasol's current cost of producing a barrel of oil from coal is approximately $40 (Cronin, 2013). This cost base should be considered in the context of the price of oil today. The cost of oil per barrel has increased to over $100 per barrel in the past decade, although it is currently priced at approximately $47 per barrel (Bloomberg, 2016). This brief discussion aims to highlight that there is a propensity for Sasol to generate excessive economic profits during times of high oil prices due to the fact that the company accepts an import parity price.

Consequently, it is important to attempt to measure the value of the subsidy Sasol receives as a result of market price transfers[47]. Market price transfers are found by multiplying the value of the market price differential, or the difference between the domestic and border prices, by the amount of production. This is indicated in the formula below.

Market price transfers = (domestic price – border price) x production volume

In the context of South Africa, the domestic price is the BFP, which has been calculated as an average price for 2012, not including levies collected by government. Regulated margins have also been removed from the BFP price, as the point is not to argue that producers should not receive a return at all, but that there is a point beyond which the level of returns is not appropriate (which in this case arises due to price regulation). These values were taken from the Department of Energy's petrol price archive (DOE, 2016). For the border price, the OECD notes that, for a net importer, the border price is the value of cost (FOB) plus insurance plus freight (CIF) (OECD Secretariat, 2010: 24). This data was also obtained from a Department of Energy source ((Mkhize & Maake, 2012).

Accordingly, the value of the subsidy to Sasol resulting from market price transfers was estimated at approximately R1.5 billion, as indicated in Table 10 below. The detailed data are given in Appendix Two.

[47] The only year for which this value was estimated was 2012 due to data availability.

Table 10: Sasol Market Price Transfers

Subsidy	Type of Subsidy	2012 estimate (Rb)	Total estimate (Rb)
Sasol	Market price transfer	1.5	1.5

Reform of the regulated price of liquid fuels is not currently a priority on the policy agenda (Burton, Lott and Rennkamp, in press), which is in part informed by the persistent narrative that Sasol is key to South Africa's energy security, thereby indicating discursive path dependency (Engen Ltd, Sasol Ltd and Petronas International Corporation, 2005: 1767). It is also informed by the fact that Sasol is viewed as strategically important to South Africa's economy with regards to security of liquid fuels supply, investment in the industry, tax, local job creation and value added in terms of domestic beneficiation of coal into higher value products (Burton, Lott and Rennkamp, in press; Rustomjee et al, 2007). Furthermore, deregulation has been delayed as there is a perception that reform would threaten new BEE entrants across the liquid fuels value chain (Engen Ltd, Sasol Ltd and Petronas International Corporation, 2005: 1777).

Market price transfers are the final subsidies to liquid fuel production identified in South Africa. These subsidies arise as a result of the regulated price of petroleum in South Africa, which produces transfers from consumers to producers. Sasol is perceived to be the primary beneficiary of this subsidy due to its reduced cost base compared to the other oil companies in South Africa. An additional, related reason for focusing on Sasol is due to the fact that the company produces its output domestically, yet accepts an import parity price. An estimate was only undertaken for 2012 due to data constraints for other years. This estimate of market price transfers to Sasol came to approximately R1.5 billion in 2012. This subsidy is significant not only due to its magnitude, but also due to its endurance as this regulated price has been extended to Sasol since 1954. That this is the case provides evidence of the endurance of South Africa's liquid fuels subsidy regime and state support to the liquid fuels producers despite the country's transition to democracy.

6.5. Conclusion

South Africa's liquid fuels industry therefore benefits from a number of direct and indirect subsidies. Using the ASCM definition of subsidy as the foundation while also accounting for what the OECD identifies as market price support is practically useful as it allows for a better understanding of the many ways in which the production of liquid fuels is subsidised. These

subsidies can be broadly separated into three categories: those arising as a result of direct transfers, government revenue foregone and market price transfers. While some of the subsidies are directed towards specific actors, other subsidies benefit producers more broadly. Historical institutionalism is useful in understanding these subsidies as many of these financial support measures have their origins in a broader history of state support, either to the specific actors or to the collection of actors. Consequently, the liquid fuels production subsidies identified between 2009 and 2015 demonstrate the endurance of South Africa's liquid fuels subsidy regime and state support to their liquid fuel industry, despite the major political change represented by the transition to democracy.

VII. Findings and Discussion

The research question underpinning the study concerned the factors contributing to the maintenance of South Africa's liquid fuels subsidy regime and state support to the liquid fuel industry despite the major political change represented by the transition to democracy. Chapter Three of the study reviewed the development of the liquid fuels industry and highlighted the financial and regulatory methods of support to South Africa's liquid fuels producers. Applying the historical institutional theoretical approach, Chapters Three and Four highlighted the ways in which these measures of support became entrenched over time. Particularly important in this regard were the effects of institutional lock in, path dependency, perceptions of sunk costs and vested interests which were driving forces maintaining these institutions. Finally, Chapter Five revealed the direct and indirect subsidies to liquid fuels production in the present. As discussed in the introduction, these subsidies and the institutional arrangements underpinning them should be considered in the context of the G20's commitment to phase out harmful fossil fuel subsidies. However, many governments are unaware of the extent of fossil fuel subsidies in their countries (Whitley, 2013: 7). Through responding to the research question, this study has ultimately shed light on the ways in which liquid fuels are subsidised in South Africa as well as the institutional barriers undermining the prospect for subsidy reform.

In order to adequately address the research question, the first section of the analysis began by understanding the development of South Africa's liquid fuels industry. Through analysing the development of actors as well as policies and regulations, this section found that the industry developed with considerable support from the South African state. Notably, the section found that the synthetic fuels producers were the primary beneficiaries of state support, although the liquid

fuels industry more broadly also benefited in a number of ways. This support was extended through two key approaches: financial support and regulatory or policy-oriented support.

Financial support to the liquid fuels producers generally and the synthetic fuels producers specifically existed in various forms. Looking at financial support to liquid fuels producers generally, this section noted the ways in which the regulated price of petroleum was higher than a true import parity price. This was the case for the In Bond Landed Cost in use from the 1950s to the early 2000s. Evidence also indicates that this continues to be the case for the Basic Fuel Price (BFP) which was implemented in 2003. The implication of this is that the regulated price of fuel has resulted in transfers, or subsidies, from consumers to producers. The OP26, formerly the tax regime applicable to the liquid fuels industry, also benefited liquid fuels producers more broadly as a result of government revenue foregone. Many of these favourable provisions were subsequently retained and expanded in the Tenth Schedule to the Income Tax Act which replaced the OP26 in 2006. Looking at financial support to the synthetic fuels producers specifically, the section uncovered the various systems of tariff protection extended to the South African Torbanite Mining and Refining Company, Sasol and later Mossgas. Also important in this regard were the various low-interest loans extended to Sasol as well as the state's cancellation of debt to Soekor and Mossgas.

In addition to financial support, this section found instances of regulatory support to the liquid fuels producers. As a regulated price, the price of petroleum paid to producers by consumers falls into this category as well. Also important were the Main Supply Agreements (MSA) which stipulated that the other oil companies (OOCs) uplift 100 percent of Sasol's production at an import parity price. This regulation had the effect of 'skewing the market' in favour of the synthetic fuels producer (International Energy Agency, 2006: 1). Furthermore, Mossgas and PetroSA later benefited from similar regulatory arrangements. Therefore, while the liquid fuels producers benefited from a number of financial and regulatory support measures from the South African state, the evidence indicated a particular preference given to the domestic synthetic fuels producers. Accordingly, one question that came out of the research is why Sasol's interests in particular appear to trump the interests of the other oil companies active in the industry. An answer to this question was not adequately identified, making this an important question for future research.

Applying the historical institutional approach to the empirical evidence, Chapters Four and Five also found the way in which this system of support became entrenched over time. This process was evident in a number of ways. Firstly, as institutions such as the MSA were extended to new production plants and new actors, the institution became more entrenched and advanced the industry further along the path of state support. Secondly, the political economy environment of the industry made the institutions of support resistant to change. This was evidenced by the maintenance of industry regulation as well as the transition from the OP26 to the Tenth Schedule of the Income Tax Act. Indeed, these sections uncovered the ways in which the actors' interests consolidated around the institutions of support that they sought to maintain. The above events provided evidence of the ways in which learning effects, coordination effects and adaptive expectations produced institutional path dependency, advancing the state further along the path of support to the liquid fuels industry in gender, and the synthetic fuels industry in particular. Furthermore, drawing on the dominant narratives around survival and security during the apartheid regime, and, later, energy security and support to BEE entrants, the study demonstrated the way in which path dependency entails a discursive aspect, which contributed to the resilience of many of these institutions.

What is more, these institutions remained resistant to change following the critical juncture represented by the country's regime change. That is, even though many of these institutions underwent minor alterations, the fundamental aspects of the institutions were retained. This is in line with historical institutional thinking on the ways in which vested interests and path dependent processes are mechanisms of institutional inertia.

Therefore, the research findings indicate that there are deeper institutional dynamics maintaining the liquid fuels subsidy regime and state support to the liquid fuels industry in South Africa. These institutional dynamics are traced to the early development of South Africa's liquid fuels industry and have remained resistant to change, even after the critical juncture represented by the end of apartheid and subsequent transition to democracy. Using the historical institutional approach, these chapters shed light on the institutional factors underpinning the liquid fuels subsidy regime. In doing so, the chapters reveal the institutional barriers undermining the prospect for subsidy reform. Additionally, the method for reaching these findings is also significant. This is due to the fact that the literature reveals that the historical institutional approach has not often been used to study

subsidies in developing countries. Furthermore, where the approach has been used to study fossil fuel subsidies, these studies have aimed to understand consumption subsidies, not production subsidies. Therefore the study advances the theoretical approach through applying it to a 'new' challenge in a developing country.

The final section of the analysis, Chapter Six, provided evidence of the maintenance of the liquid fuels subsidy regime and state support to the liquid fuels industry in the present. Namely, the chapter found that the liquid fuels producers continue to receive production subsidies from the state. The section identified three main categories of support to liquid fuels producers: direct subsidies, government revenue foregone and market price support. In terms of direct transfers, the section identified R5, 563.23 million in transfers between 2009 and 2015, as indicated in Table 11 below. This resulted in average annual transfers of R794.75 million during this period. As state-owned companies, PetroSA and CEF, have historically established relationships with the state and have benefited from state subsidies in the past.

The benefit of these subsidies is that they tend to be more 'visible' and therefore are 'easy' early targets for subsidy reform. It should be noted, however, that the figures presented in this study may not represent a complete list of direct subsidies to liquid fuels producers. This is due to the overall lack of transparency surrounding government budgets and fossil fuel subsidies. In particular, these subsidies are listed in a variety of different government and company documents and can therefore be difficult to identify. Accordingly, an additional contribution of this study is that it compiles a single list of subsidies to be reviewed.

Table 11: Direct Transfers to the Liquid Fuels Industry

Subsidy	Type of subsidy	2009 estimate (Rm)	2010 estimate (Rm)	2011 estimate (Rm)	2012 estimate (Rm)	2013 estimate (Rm)	2014 estimate (Rm)	2015 estimate (Rm)	Total estimate (Rm)
PetroSA	Government funding	5.37	3.79	3.71	3.09	4.24	-	-	20.20
CEF	Government Funding	-	97.92	64.84	75.50	78.87	101.54	116.98	535.65
SANEDI	Government funding	-	-	-	-	66.98	97.41	-	164.39
Transnet Pipeline	Government funding	-	1,614.33	1,614.33	1,614.33	-	-	-	4,843
Total		5.37	1716.04	1682.88	1692.92	150.09	198.95	116.98	5563.23

While the section was not able to provide estimates of subsidies resulting from government revenue foregone, the tax provisions resulting in subsidies to liquid fuels production were noted. However, the GSI has found that producer subsidies are most often in the form of government revenue foregone (GSI, 2010a: 2). Therefore, further research is required so as to estimate the value of subsidies to liquid fuel production in South Africa as a result of these tax expenditures. Producing estimates of the value of these subsidies would shed light on the magnitude of these subsidies and highlight the important areas for fossil fuel subsidy reform. It should be noted, however, that the importance of listing the tax provisions resulting in subsidies should not be underestimated. As the study has revealed, there is considerable lack of clarity around what exactly constitutes a subsidy. Consequently, listing tax provisions and describing the way in which they result in government revenue foregone is significant as it enhances clarity around the question of subsidies and the ways in which they are conferred.

Finally, in terms of market price transfers to Sasol, the section found that Sasol benefited from approximately R1.5 billion in transfers in 2012. This estimate was calculated in terms of the OECD's method of calculating market price transfers. However, it should be noted that the accuracy of this figure is influenced by the petrol-diesel split of production from Sasol's Secunda plant. The assumption for this estimate was taken from a 1999 study and was assumed to not have undergone any significant changes since this time (Lloyd, Rukato & Swanepoel, 1999: 6). The significance of this estimate, however, is it is the first attempt to use the OECD's method to estimate market price transfers in South Africa. Additionally, the size of the estimate points to the magnitude of the issue and the extent to which consumers are subsidising Sasol.

When identifying and estimating the value of these subsidies, it is important to keep in mind that research from the GSI reveals that few governments are aware of the full extent of fossil fuel subsidies they have granted (Whitley, 2013: 7). This is largely due to the fact that many forms of fossil fuel support have never been quantified. The issue is further exacerbated by the lack of budget transparency in many developing countries (Jones & Steenblik, 2010; de Mooij et al, 2012). The research findings on subsidies in the present are therefore significant in that they enhance empirical insight into South Africa's liquid fuels subsidy regime and provide a list of subsidies to

be reviewed for reform. This is particularly important given South Africa's pledge to phase out fossil fuel subsidies.

These findings should also be considered in the context of the state's efforts to expand renewable energy generation in the country. As previously discussed, liquid fuels production benefited from R5, 563.23 million in direct transfers between 2009 and 2015, an unquantified amount of tax subsidies, and R1.5 billion in market price transfers. While liquid fuels do not often compete directly with renewable energy, it is important to consider them in the context of low carbon transitions in general. Reducing excessive profits generated by companies such as Sasol would discourage misinvestment in coal to liquid and gas to liquid technologies. Such an action may also impact on allocative efficiency and improve welfare.

Furthermore, these liquid fuels subsidies are in addition to the subsidies extended to fossil fuel production in the coal and electricity sectors, as can be found in Burton, Lott and Rennkamp (in press). In contrast, only one subsidy to renewable energy generation was identified and is associated with the Department of Trade and Industry policy incentives. National Treasury provides contingent liabilities to Eskom in order to guarantee the power purchase agreements between Eskom and renewable energy independent power producers. These contingent liabilities amount to R200 billion and are considered subsidies as they are 'potential direct spending' (National Treasury, 2016b: 94; WTO, 1994: 229). That is, although they are not an immediate cost to government, in the event that Eskom is not financially able to purchase power from these producers, government must purchase the power on the behalf of the company. Subsidies to liquid fuels and other fossil fuels exceed those which are extended to renewable energy and studies indicate that these differences distort cost comparisons between energy sources (Lazard, 2016). This may ultimately undermine the state's efforts to promote a low carbon transition by making fossil fuels appear cheaper than they would otherwise be. At the very least, other lower carbon energy supply options, such as in transport or industry, may appear higher cost. Future research is therefore necessary in order to identify any further subsidies to renewable energy and estimate the impact that subsidies have on the prices of fossil fuels and renewable energy in order to ensure more informed energy planning.

The study was also novel in that it aimed to link the matter of historical and present financial and regulatory support to the liquid fuels industry in South Africa to the international fossil fuel

subsidies debate. Applying the ASCM and OECD PSE definitions of subsidies to the historical empirical evidence, the study identified the ways in which the diverse collection of regulations and financial assistance resulted in subsidies to the liquid fuels producers. As has been demonstrated throughout the study, there have been numerous instances of subsidisation, even if they have not often been identified or discussed as such. In highlighting the multitude of ways in which the state has provided, and continues to provide, subsidies to the liquid fuels industry, the study may open a dialogue around the more implicit, less understood aspects of support to fossil fuels.

Through the above, the present study has addressed the persistence of liquid fuel production subsidies in South Africa, a topic which has received little attention or analysis in South Africa. However, one element of this persistence which should be addressed in future research is the muted policy debate about the reform of South Africa's fossil fuel production subsidies.

The study has addressed the issue of the liquid fuels subsidy regime and state support to the liquid fuels industry in South Africa. Chapter Four analysed the historical development of the liquid fuels industry and established the ways in which financial and regulatory support measures were extended to the liquid fuels and synthetic fuels producers. Chapters Four and Five used the historical institutional approach to highlight the factors and processes that have sustained these institutions over time. Finally, Chapter Six revealed the ways in which liquid fuels production is subsidised in the present by identifying the main categories of direct transfers, government revenue foregone as well as market price transfers. In doing so, the study advanced the theoretical approach through applying it to a specific challenge and context that it has not previously been applied to. Additionally, the study provided a list of subsidies to be reviewed for reform, as well as the institutional barriers that may challenge any attempts at subsidy reform. These subsidies, and other subsidies to fossil fuel production, should be considered in the context of the state's efforts to expand renewable energy generation in South Africa and further research is necessary in order to determine how liquid fuel production subsidies may undermine these efforts. These chapters therefore reveal the factors informing the maintenance of the liquid fuels subsidy regime and state support to the liquid fuels industry following South Africa's transition to democracy.

VIII. Conclusion

The research question investigates why the liquid fuels subsidies regime and state support to the liquid fuels industry have not changed despite South Africa's transition to democracy. In order to

address this research question, the study began by tracing the development of the liquid fuels industry in South Africa with a view to understanding the ways in which the state provided financial and regulatory support to the liquid fuels producers. The study found that in each stage of the industry's development the state extended various measures of financial and regulatory support to the liquid fuels producers, with a specific focus on the synthetic fuels producers. Where relevant, the study shed light on the ways in which these measures of support have amounted to subsidies to their beneficiaries. In order to understand and explain how these institutions became entrenched or evolved over time, the study applied the historical institutional approach to the empirical evidence. In doing so, the study revealed that although many institutions underwent minor alterations over time, the broader institutions often remained in place. Furthermore, new, complementary institutions were often added to the institutional arrangement, which had the effect of reinforcing the collective. This was even the case following the critical juncture represented by the country's transition to a democratic regime. The analysis revealed that path dependent processes, vested interests, perceptions of sunk costs and institutional lock in were important drivers impacting on the maintenance of these institutions.

It is also important to highlight that, in some cases, the continuity, alterations, or outright removal of institutions aligned with the interests of the main industry actors and were not necessarily induced by government policy. This is in line with the historical institutional view of institutions as, '…objects of ongoing skirmishes as actors try to achieve advantage by interpreting or redirecting institutions in pursuit of their goals, or by subverting or circumventing rules that clash with their interests' (Streeck and Thelen, 2005: 19). As the historical institutional approach has often been applied to explain phenomena in advanced economies, its application to a developing economy serves to advance the theory. This highlights an important contribution of the present study.

By investigating liquid fuels production subsidies in the present, the study also enhanced empirical insight into South Africa's liquid fuels subsidy regime. The study revealed a number of subsidies to the production of liquid fuels as a result of direct transfers, government revenue foregone as well as market price transfers. While the direct transfers are relatively 'visible', they are often listed in a number of different government documents and can be difficult to identify. Therefore, by compiling them into a single list, the present study has enhanced the transparency around the

subsidies and provided an easy-to-access and identify list of direct subsidies to be reviewed for reform. The study also identified the tax provisions resulting in government revenue foregone. While the study was not able to quantify the subsidies resulting from these tax provisions, Chapter VII noted these tax expenditures as areas for future research so as to identify the magnitude of these subsidies. In doing so, the study identified the more implicit ways in which liquid fuels production is subsidised in South Africa. Finally, the study estimated 2012 market price transfers to Sasol to be approximately R1.5 billion. The identification and estimation of this subsidy is important not only due to its magnitude but also due to the endurance of this institution. As stated in the previous chapter, however, the subsidies identified in this study may not represent a complete list of subsidies to liquid fuels production in South Africa, in part due to the lack of transparency around fossil fuels.

Ultimately, the study highlights the many ways in which liquid fuels production is subsidised in the present, as well as the institutional drivers underpinning this subsidy regime. In this regard, it sheds light on the institutional barriers undermining the prospect for subsidy reform. In doing so, the study provides insight into the maintenance of the liquid fuels subsidy regime and state support to the liquid fuels industry following South Africa's transition to democracy.

Appendix 1

EBE Faculty: Assessment of Ethics in Research Projects (Rev2)

Any person planning to undertake research in the Faculty of Engineering and the Built Environment at the University of Cape Town is required to complete this form before collecting or analysing data. When completed it should be submitted to the supervisor (where applicable) and from there to the Head of Department. If any of the questions below have been answered YES, and the applicant is NOT a fourth year student, the Head should forward this form for approval by the Faculty EIR committee: submit to Ms Zulpha Geyer (Zulpha.Geyer@uct.ac.za; Chem Eng Building, Ph 021 650 4791).
NB: A copy of this signed form must be included with the thesis/dissertation/report when it is submitted for examination

This form must only be completed once the most recent revision EBE EiR Handbook has been read.

Name of Principal Researcher/Student: Tawney Lott Department: Mechanical Engineering

Preferred email address of the applicant: tawneyslott@gmail.com

If a Student: Degree: Master of Philosophy Supervisor: Britta Rennkamp

If a Research Contract indicate source of funding/sponsorship:

Research Project Title: A Political Economy Analysis of Liquid Fuel Production Incentives in South Africa

Overview of ethics issues in your research project:

Question 1: Is there a possibility that your research could cause harm to a third party (i.e. a person not involved in your project)?	YES	NO X
Question 2: Is your research making use of human subjects as sources of data? If your answer is YES, please complete Addendum 2.	YES	NO X
Question 3: Does your research involve the participation of or provision of services to communities? If your answer is YES, please complete Addendum 3.	YES	NO X
Question 4: If your research is sponsored, is there any potential for conflicts of interest? If your answer is YES, please complete Addendum 4.	YES	NO X

If you have answered YES to any of the above questions, please append a copy of your research proposal, as well as any interview schedules or questionnaires (Addendum 1) and please complete further addenda as appropriate. Ensure that you refer to the EiR Handbook to assist you in completing the documentation requirements for this form.

I hereby undertake to carry out my research in such a way that

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

Signed by:

	Full name and signature	Date
Principal Researcher/Student:	Tawney Lott	29/01/2016

This application is approved by:

Supervisor (if applicable):	Britta Rennkamp	29/01/2016
HOD (or delegated nominee): *Final authority for all assessments with NO to all questions and for all undergraduate research.*	H.WINK LOT	25.11.2016
Chair : Faculty EIR Committee For applicants other than undergraduate students who have answered YES to any of the above questions.		

Appendix 2

Estimation of Market Prices Transfers to Sasol (2012)

It is first necessary to estimate the volume of petrol production from Sasol for the year in question (2012). We are primarily interested in petrol volume as the BFP applies to petrol, not diesel. The value of petrol production will be inserted into the equation below ("production volume").

To estimate volume of petrol produced by Sasol in 2012:

Assuming that

Total Sasol production (2012) = 3,574,000 tons

Then 2012 Sasol production (2012) = 3,242,278,261 kg

And ratio of volume of petrol: diesel = approximately 70:30 in m^3 (Lloyd, Rukato & Swanepoel, 1999: 109)

And density of petrol $\rho_p = 737\ kg/m^3$

density of diesel $\rho_d = 885\ kg/m^3$

Then total production mass, $M_t = M_{petrol} + M_{diesel}$

If M_{petrol} or $M_p = \rho_p V_p$ and M_{diesel} or $M_d = \rho_d V_d$

Then $M_t = \rho_p V_p + \rho_d V_d$

Substituting values into this equation gives,

$$3{,}242{,}278{,}261 = 737V_p + 885V_d$$

Therefore, for a given volume, 70% or 0.7 is petrol and 30% or 0.3 is diesel, so for 1 unit of volume:

$V_p = 0.7V$

$V_d = O.3V$, where V = total volume

Substituting these values gives:

$3{,}242{,}278{,}261 = 737\ (0.7V) + 885\ (0.3V)$

$3{,}242{,}278{,}261 = 515.9V + 265.5V$

$3{,}242{,}278{,}261 = 781.4V$ – (where 781.4V is a weighted average to account for Sasol's petrol: diesel production ratio)

Therefore, $V = 4{,}149{,}319.505\ m^3$ (total)

Therefore, $V_p = 4{,}149{,}319.505\ m^3$ (total) * 0.7 = $2{,}904{,}523.653\ m^3$

Converting M^3 to litres:

Volume petrol: 2,904,523.653 m^3 * 1000= **2,904,523,653** The table below indicates the average value of the cost, insurance and freight components of the BFP in 2012. This value is used as the OECD notes that for a net importer of a commodity the correct border price is the CIF price (OECD, 2016: 66).

BFP data (2012): Average cost, insurance, freight charges	
Cost (c/l)	587.146
Insurance (c/l)	0.913
Freight (c/l)	21.002
Avg CIF (c/l)	**609.061**

(Mkhize & Maake, 2012)

The table below indicates the BFP (c/l) price applied to petrol in 2012. The price for each month has been listed to indicate the figures included in determining the average price (minus government levies and regulated margins).

	BFP (c/l)
January	598.55
February	632.55
March	656.17
April	694.57
May	718.17
June	660.99
July	582.57
August	608.95
September	698.45
October	708.29
November	696.09
December	673.19
Avg BFP (c/l)	**660.7117**

(CEF, 2012)

The **bolded values** above are then inputted to the following equation:

Market price transfers = (domestic price [48]– border price[49]) x production volume

Therefore, 2012 market price transfers to Sasol =

((660.7117 c/l – 609.061 c/l)/100[50]) * 2,904,523,653 =R 1,500,206,798

[48] Where the domestic price is the average BFP.
[49] Where the border price for a net importer of the commodity of interest is the Cost, Insurance, Freight (CIF) price (OECD, 2016: 66).
[50] The difference between the domestic and border prices are divided by 100 to covert from cents to rands.

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