

*Institutional Form and Regulatory Effectiveness: An Anglo-American
Comparison*



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Institutional Form and Regulatory Effectiveness: An Anglo-American Comparison

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1.0 Summary

In the following paper, the regulation of the electrical markets in the United Kingdom and the state of Oregon are addressed. More specifically, the Office of Gas and Electrical Markets (OFGEM) and the Oregon Public Utilities Commission (OPUC) serve as the foci for this project. Through the combination of empirical data and public administration theory, this analysis attempts to measure the relationship between the institutional form of these regulatory institutions and their regulatory effectiveness. In order to do so, this analysis first determines what is meant by 'institutional form'. The assumptions behind this are based upon theory provided by Robert Baldwin and Martin Cave. Then, based on the objectives recognized by the regulators, the regulatory effectiveness has been measured through the use of a series of performance indicators. For the objectives that lacked performance indicators, this analysis took the initiative to apply indicators that would assist in the measurement of effectiveness.

Before moving into the findings related to form and effectiveness, this paper defines the practical relevance of an investigation into regulation and why the regulators in question were chosen. Also, some useful definitions are defined and a brief description of why regulation is necessary in electrical markets is given. By addressing these issues, we can understand the importance of regulation in electrical markets.

Through data collection, academic research and some electronic contact with the regulators and other organizations, it was found that OPUC characterizes the institutional form that will lead to regulatory effectiveness, according to Baldwin and Cave. Not only is OPUC relatively strong in each of the five institutional elements, they also show a good balance across them. In contrast to the theory, it was found that OFGEM has been more effective over the last six years. Meanwhile, OPUC has been rather ineffective over the same timeframe. While this contradicts the original hypothesis of this project, it does shed light on what institutional form means to effectiveness and raises several new questions in regards to what drives the effectiveness of the regulatory bodies who govern electrical markets.

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2.0 Acknowledgments

The following work comes from research and work from my study in the Masters in International Public Management and Policy (IMP) program at Erasmus Universiteit Rotterdam in 2004-05.

The subject for this paper did not grow as much from my general interest in the regulation of utilities but more from my curiosity in the balancing act government agencies must perform in order to be effective as possible. Also, my motivation was also increased by the lack of empirical data related to the effectiveness of regulatory bodies.

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It would be appropriate to first recognize the person who made this Rotterdam endeavor, let alone this paper, possible in the first place. Without the guidance and trust that Jo Jeter has provided me, this year would still be a part of my imagination. In regards to this assignment, I am indebted to the individuals at the regulatory and watchdog agencies that provided me with the invaluable information and guidance that made my findings possible. I would like to express a sincere thank you to Laura Williams who, on her own time, assisted me in developing contacts throughout the Oregon utility industry.

Finally, I cannot give enough praise to the IMP Team who has assisted me through this entire year. Because of them, Rotterdam has become home. I would especially like to thank Professor Christopher Pollitt, whose guidance was key to the successful completion of this project.

3.0 Introduction

Throughout Europe and the United States, there has been a form of governance that has been ever present in the field of electrical utilities. This element is regulation. The variations in both methodology and ideology in regards to the regulation of utilities has varied greatly, especially when trans-Atlantic comparisons are made. On the other hand, there are many similarities between the two continents that are quite striking. Outside of the practical applications of regulation, the academic studies of regulation have a long history in the United States, but in Europe and the United Kingdom the analysis of regulation is relatively new (Doern and Wilks 1997). In either case, a comparison between regulators on either side of the Atlantic will help develop a better understanding of the regulation of electrical markets.

In the eye of the public, regulation has become one of the most debated policy issues in both the US and UK. A key development in the field of regulation worth noting is the amount of public pressure that various agencies, ministries, and other bodies are being put under. This is not exclusive to regulation, as we have seen an increase in public pressure on almost all forms of governance. This scrutiny has perhaps reached its zenith in the last several decades as public organizations are being sent incompatible messages from both politicians and the public to increase efficiency but at the same time allow for public consultation and an increase in responsiveness (Pollitt 2003, p. 83-4). Naturally, this scrutiny is only amplified when a regulatory body has the responsibility to oversee a market function that has a direct impact on essentially every citizen's livelihood via electricity bills and potential fluctuations in daily electrical supply.

In the following paper, the regulation of electrical markets in the United Kingdom and the state of Oregon will be the focal point for analysis. More specifically, the Office of Gas and Electrical Markets (OFGEM) in the UK and the Oregon Public Utilities Commission (OPUC) in Oregon will serve as the research foci. In very general terms, the idea of comparing a US and UK regulator is an academically viable endeavor. There is a long list of comparative analyses in the field of regulation and de-regulation and

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several of these have already proved useful such as the lessons learned from the comparisons of the various regulatory mechanisms used in utility markets in both countries (Doern and Wilks 1997). In order to complete this analysis, both academic literature and professional resources will be applied in order to establish a well-rounded approach. The list of resources used is quite substantial and speaks to the depth and breadth of this analysis.

4.0 Central Research Question

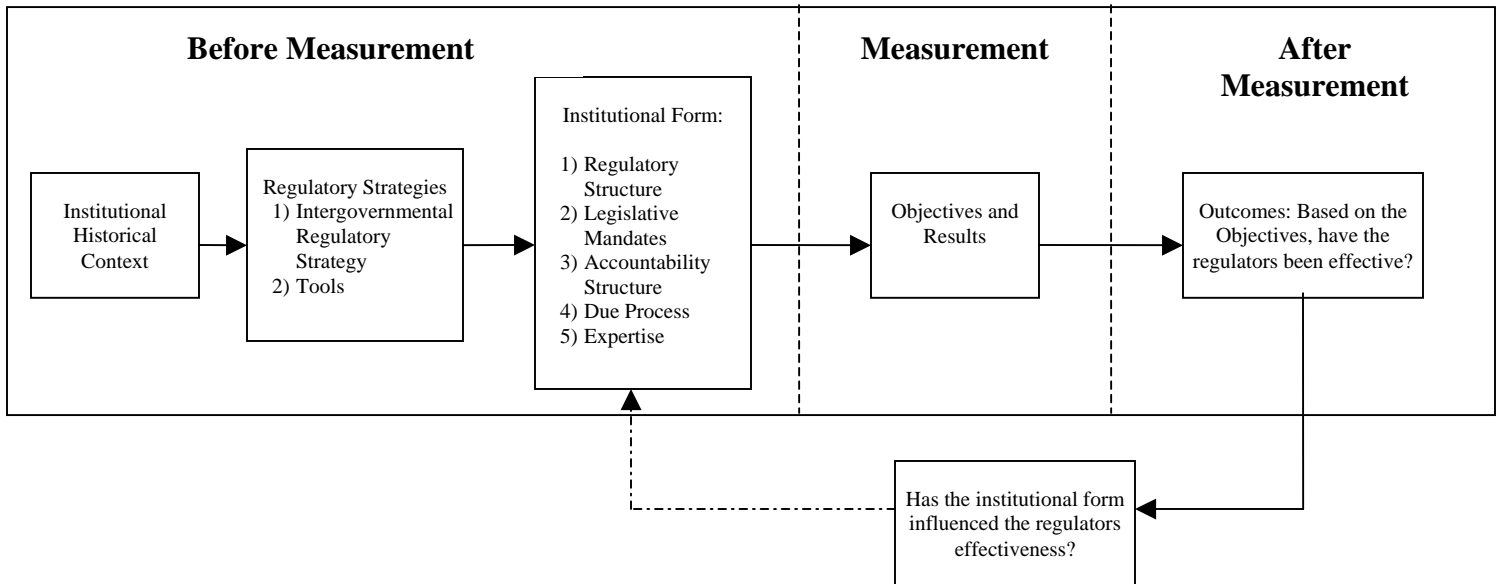
The following central research question will be the heart of this paper and the goal will be to not only develop a strong answer for it but also to make some recommendations that address the regulatory situations in Oregon and the UK. The central question is the following:

Is there a relationship between the institutional form taken by a regulatory body and its regulatory effectiveness?

In order to answer this question, the theoretical concepts established by Robert Baldwin and Martin Cave in their book *Understanding Regulation* will be used to provide a theoretical platform for the central research question to stand upon. In their theory, Baldwin and Cave define a list of factors that make up an institutional form and argue that in order for regulators to be considered effective, they must have a balance of these relevant institutional attributes. It is the opinion of this paper that the findings will support this—it is likely that the effectiveness of the regulators in question will have both direct and indirect links to the elements of institutional form. The application of their theory, as well as complementary theories described by several other academics, will be described briefly here and in more detail in the *Theoretical Approach and Literature Review* below.

We will break up the central research question into distinct halves. The first half, which will be referred to as the relevant aspects *before* the measurement of results, will establish the institutional form the regulators possess. Then the second half, which will be referred to as *after* measurement, will analyze the performance indicators and outcomes of the objectives and come to some conclusions as to whether the regulators have been effective or not. The advantage of breaking the central research question into distinct sections is that it will allow for a more clean comparison between form and effectiveness. Once these distinct sections have been described and analyzed, we will return to the central research question and draw some conclusions in regards to the relationship between institutional form and regulatory effectiveness. This approach is outlined in the following chart:

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To begin the development of the necessary aspects *before* measurement, the institutional history for each regulator will be summarized. This is important for two reasons. First, in the establishment of objectives and targets, regulators are constantly asked to adapt to ever changing political tactics and market developments (Jabko 2004). By analyzing the history of each regulator, we will gain a better understanding of how various developments have affected them over time. In both cases, the rationale behind the direction of the regulators has a direct connection to its historical adaptations. Also, by shedding light on the institutional history we can obtain a better understanding how and why the regulators have taken on the institutional form they currently possess. Second, in order to make viable comparisons between OPUC and OFGEM, we must be able to differentiate between and comment upon the historical developments that make the regulators either similar or different in their institutional form. For example, regulators within the United States traditionally have a more legalistic approach to regulatory procedures that is embedded in the historical balance of power between the judicial, legislative, and executive branches (Phillips 1993). Obviously, the differences in historical legalistic expectations are an example of institutional history that would have an effect on the institutional form of a regulatory body.

After establishing the institutional history, the strategies of the respective regulators will be determined. This is a logical segue from the historical context since, as mentioned above, the historical context tends to dictate the type of strategy the regulators utilize. For instance, the reliance on the market as a strategy for regulation in the United States has a much longer history than in the UK or Europe where until the last several decades, governments have tended to rely more on nationalization (Majone 1996). Once again, by understanding the various strategies of the regulatory bodies, we can gain a better understanding of why the regulators have taken on the institutional form they possess.

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Next, the main component of the *before* section will be established. This is institutional form. In order to address this, we must first understand what is encapsulated in this term. The following attributes of these regulatory bodies will be combined in order to define what constitutes their institutional form:

- The Structure of Regulatory Bodies (For example, a Directorate General or Commission)
- Legislative Mandates (which includes regulatory power)
- Accountability Structure
- Due Process
- Expertise

Once the institutional forms for OPUC and OFGEM have been identified, we can then begin to examine regulatory effectiveness. To do so, we must first establish the first elements of the *after* section, which are the objectives that come out of the given regulatory institutions. The first step in the identification of objectives will simply be to recognize what has been set for the regulators and the subsequent objectives they have set for themselves. So, this portion will be very straightforward. But, as we will see later on, many of the regulators' objectives are not clearly spelled out or easily measured. As a result, this paper will attempt to develop some performance indicators that address the objectives that have not been measured.

After the objectives and respective performance indicators have been defined, we can then move deeper into the *after* measurement segment. It is here where we will explore whether or not the regulators have been effective based on the outcomes they have achieved. This will be accomplished by analyzing each of the outcomes against the performance indicators that have been defined. At this point, the goal will be to look at effectiveness both in a finite and aggregate point of view. In other words, each individual outcome and performance indicator will be analyzed by itself, but the body of outcomes and indicators will also be taken into account in order to assess the overall regulatory effectiveness of OFGEM and OPUC.

Finally, once the above elements have been addressed, we will return to the central research question and draw some connections between institutional form and regulatory effectiveness. At this point, the initial hypothesis of this analysis is that there will be both direct connections and some more indirect relationships between regulatory form and effectiveness. More specifically, the regulators that possess the elements defined in the theoretical framework below will be more effective in their governance of electrical markets. Furthermore, while developing this hypothesis and establishing the theoretical framework, it became clearer as to what the important data points related to the regulatory outcomes might be. While this is addressed more thoroughly throughout this paper, it could be said here that much of the data collected was gathered in order to meet both the requirements established by the theory of Baldwin and Cave and the objectives that the regulators adhered to. Also, it may also be appropriate to make some connections to the institutional history and regulatory strategies that have been defined as

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well, but at this point, it is difficult to forecast any relationships and will be handled in the discussion of findings as such.

5.0 Background

5.1 Practical Relevance

There are several reasons for why these two regulatory bodies have been chosen. First, OFGEM and OPUC represent two organizations with similar functions. Both organizations are responsible for the regulation of the wholesale and retail electrical markets within their state or nation boundaries. Also, both regulator's prime functions are defined in their role to 'ensure that customers receive adequate services at fair and reasonable rates' (OPUC 2004) and 'to protect and advance the interests of consumers' (OFGEM 2005b). Moreover, both regulators loose much of their authority in interstate market issues. In the case of Oregon, the Federal Energy Regulatory Commission (FERC) assumes responsibility for any wholesale power market activity between the states in America. For the UK, the European Commission takes on some oversight functions in the inter-country trading of power and the promotion of open markets between nation states. In this sense, both forms of regulation in Oregon and the UK have a large amount of autonomy in making decisions that deal with intrastate market activity. On the other hand, both Oregon and the UK must answer to a higher authority in decisions that include other nations or states that are outside of their physical jurisdictions. Secondly, the mission and goals of OFGEM and OPUC are relatively similar. In both cases, the regulators stress the importance of 'promoting competition where possible' and 'regulation only where necessary' (OFGEM 2005b) as compared to using 'regulation and, where possible, competitive market forces to achieve [its] goal' (OPUC 2004). Both regulators go on to stress the importance of improving the markets in all its forms and making them work fairly and effectively (OFGEM 2005b, OPUC 2004).

Naturally, a comparison of a nation state to a state within a nation will have some discrepancies, but for present purposes these are relatively minor when compared to the similarities defined above. For example, to compare FERC, the national regulator in the United States to OFGEM would fall severely short due to the fact that FERC only deals with wholesale, interstate transactions and the licensing of hydroelectric projects on open waterways. Thus, a comparison between the function and missions of FERC and OFGEM would be left with huge gaps. This is not to say that OFGEM and OPUC are mirror images of each other. For instance, we will see that one of the biggest differences between OFGEM and OPUC are the actual levels of autonomy they possess. But, differences like this will be fundamental in understanding the connection between institutional forms and the effectiveness of the regulatory bodies.

Without question, the nature of electrical market regulation in both the UK and Oregon, as well as in the remainder of Europe and the USA, is a constantly scrutinized, ever evolving policy issue. For example, in a 2005 annual report by the European Commission, it was stated that 'the issue of regulation [of member states] electrical

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markets] is now the most important obstacle to the development of more rigorous competition' (Commission of European Communities 2005). Throughout the United States, the debate over the effectiveness of regulators and the degree of what role regulation plays in the market continues to be a hot topic, especially after events like California energy crisis in 2000-01 and the northeast blackout in 2003. In terms of the role that regulation plays, short term price hikes led to the call for various forms of re-regulation and a range of other quick fixes, while market experts have promised that in the long run, a more deregulated market will ensure lower prices (Rigby 2000). Conversely, the advocates of deregulation continue to point to the potential savings for consumers and claim that the previous energy crises were chance events (Power Markets Week 1 Nov 2004, Transmission and Distribution World 2004).

One final note to point out is, given all the attention that regulation of electrical markets have received, it is surprising how little attention has been paid to any empirically grounded performance indicators. At this point in time, the only indicators that are readily available and oft analyzed have to do with changes in prices for industrial and retail users. Throughout the content analysis of the available professional literature, there was an apparent lack of discussion about empirical data related to reliability, safety and other relevant issues.

5.2 Definitions

Any student of regulation can attest to what a broad subject it truly is. In fact, one could extend the definition of regulation to include all forms of governance at every level of society (Doern and Wilks 1997). If we move closer to the application of regulation in terms of government organizations and private firms, regulation can be conceived as 'governmental legislation or agency rules, having force of law, issued for the purpose of altering or controlling the manner in which private and public enterprises conduct their operations' (Adams 1958, cited in Phillips 1993, p. 29). For the purposes of this paper, we will narrow the scope in order to focus on the key elements of the regulation as it applies to electrical markets.

When we move into the discussion around regulatory strategy, it is important to make a few distinctions. First, the term 'intergovernmental regulatory strategy' will be used to address the overarching strategy of regulation that the British and Oregon governments apply to all of their regulatory bodies. This is important to point out as it is the starting point for the regulators' defined roles and mode of operation. Next, taking a step down from the overarching government approach to regulation, the specific strategic 'tools' that the regulator utilizes in order to carry out its strategy will be addressed.

Another important assumption to make is the idea that regulation in some form above competition laws or market forces is assumed necessary when dealing with electrical markets. This idea has been frequently commented upon in terms of electrical markets and network utilities as a whole. It has been pointed out that traditional network utilities, especially when considering the specific technicalities of electrical markets, requires ever present, continuing regulation that is greater than just competition alone (Buigues,

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Guersent, and Pons 2001b). While some activists for competition may disagree that regulation is necessary after the long term establishment of an electrical generation and supply market, the UK provides us with an example where deregulation and competition has been promoted for over fifteen years, yet regulation greater than competition law is still vital (Vasconcelos 2001). Thus, we will see that the true question is not whether to regulate or deregulate, but instead it is a question of how to regulate (Slovic, Fischhoff, and Lichtenstein 1985). Hopefully, this paper will shed light on this question.

The next important aspect to address is the market functions that make up an electrical market. The three major components in this paper are generation, transmission, and distribution of electricity. Overall, the regulatory trend has been a systematic de-integration of these three functions in order to establish competition and separate the naturally monopolistic functions from those that are less so (Vasconcelos 2001, Helm and Jenkinson 2001, Green and Newberry 1998). The market starts with the generation of electricity, which can range from small diesel powered generators to megalithic hydroelectric dams. Once a power generating firm has built one of the various forms of generators and established a connection to the electrical transmission grid, they normally establish both long and short term contracts with distributors based on demand forecasts and market prices. This typically represents the most naturally competitive aspect of the electricity market, as was the case in the UK (Lillis 1997). This is due to the fact that potential generators can analyze the supply and demand of the market to judge how much electricity to produce or whether or not they will build some type of generator. In the three market functions defined here, generation has seen the most competition due to the increase in independent power firms (Phillips 1993, Littlechild 1998). This trend of increasing numbers of generators has been important in the move towards effective competition and allowing the market to set the price instead of a few large firms (Green and Newberry 1998). This does not mean that regulation will not be necessary now or even in the foreseeable future. Instead, we see that a sizeable portion of regulatory resources is spent on licensing new generators and establishing fair and open entry to the power grid. On the other hand, there is evidence that when regulators have been established, they have been given less authority over generation than over distribution or transmission, as shown by the 1989 Electricity Act in the UK (Green and Newberry 1998).

In regards to generation, one important definition to point out here in relation to the Oregon electrical market is the distinction between suppliers and aggregators. An energy supplier in Oregon, like many other places, is a firm that generates power and then sells it on the market. Aggregation, on the other hand, is by definition, 'combining retail electricity consumers into a buying group for the purchase of electricity and related services' (Oregon Legislative Assembly 2004, p.55). In other words, aggregators are firms that facilitate the consolidation of electricity billing and service for eligible retail customers who have multiple facilities. Since suppliers and aggregators provide distinctly different functions, OPUC treats them as separate entities. The only exception here is that when they attempt to measure the number of competitive options available for customers, they will often combine these two for purposes of reporting. The rationale

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behind this is to give an overall picture of the level of competition and customer flexibility available in the market.

The second element of the electricity market is transmission. Once generators have produced energy, transmission acts as the physical intermediary to deliver the generated electricity to either distributors or direct service industries such as steel and aluminum factories. The transmission medium is usually referred to as an electrical grid. An electrical grid is a prime example of a natural monopoly, thus we see that transmission is predominately handled by a single firm or government organization that is heavily regulated in terms of price and grid access (Phillips 1993). Obviously, the regulators of electrical markets play a large role in the regulation of transmission. In some cases, there has been a small increase in the number of firms that have bought portions of the electrical grid as with the case of firms like PacifiCorp in Oregon, but this has not taken away the need for regulation in this portion of the market.

The final element of the market that will be discussed is distribution. Once electricity has been put on the electrical grid to be transmitted, it arrives at a substation where it is converted from high voltage electricity to a lower voltage that can be used for industrial, commercial, or residential purposes. In other words, the substation acts as a distribution point. In most cases, the substation is owned by a distributor, which is usually a local utility company who has bought the power via a contract with the generator. But, the various types of distributors are many. Finally, the distributor sends the power to the final customer and handles billing and collection. Just like the electrical grid, distribution networks hold the physical characteristics of a natural local monopoly as well as the distributors in place having already made large infrastructure investments that would serve as a barrier to market entry (Helm and Jenkinson 1998). Therefore, regulators have generally been given ample authority in regard to the behavior of distributors.

Lastly, a definition of what is meant by effectiveness is essential, as it is a term with various interpretations. Given the public policy perspective of this paper, we will adhere to the idea that effectiveness is the measurement of outcomes against the stated objectives (Pollitt and Boukaert 2004). Thus, in order to address regulatory effectiveness, we must first grasp what the objectives of the regulatory functions are and then measure them against the outcomes that are achieved. So, performance indicators will be used to empirically analyze the objectives

5.3 Reasons for Regulation

Since we have assumed regulation to be necessary, it is important to establish the reasons for why this is. In general, the regulation of network utilities has been considered a necessary instrument in order to protect the public interest from the naturally monopolistic sectors of the electrical market and the imbalances of welfare they can produce. A natural monopoly occurs in a market where a good or service can be provided at a lower average total cost by one firm instead of several firms (Mankiw 2004, p. 316). The potential for competition is subdued since market entry is unappealing given barriers in that stand in the way that result from overwhelming economies of scale. In the

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transmission sector, a single firm can best serve consumers due to the inefficiencies that would result from duplicative networks (Parker 1999, Baldwin and Cave 1999). It makes little sense and will be more costly to society to have several sets of wires running in parallel to each other. Since it is most effective to have one firm in control of transmission, regulation is a necessary substitute for competitive forces (Baldwin and Cave 1999). If these competitive forces are not induced through regulation, the following market manipulations could potentially result:

- Cream Skimming
- Price and Supply Manipulation
-

First, if an electrical market is left unregulated, the odds of ‘cream skimming’, or the idea that electricity marketers will only serve the sectors of society that are deemed profitable, is very high, thus potentially excluding large portions of society (Baldwin and Cave 1999, p. 12-13). Although Baldwin and Cave do not use electricity as an example of this phenomenon, they do point out that ‘allocative efficiency attempts to maximize welfare but is not concerned with the distribution of that welfare amongst individuals or groups within society. Regulation may be used to redistribute wealth or to transfer resources to victims of misfortune’ (1999, p.14). While their term ‘victims of misfortune’ may be a bit severe, it does place emphasis on the point that in network utilities such as electrical markets, it is often inefficient, thus not in a firm’s best interest, to serve the outliers of society that may be unprofitable to deliver electricity to. Therefore, regulation is necessary to reallocate welfare to those who lay beyond the fringes of profitability. Buigues, Guersent, and Pons (2001) point out that given the public obligations of a network industry like that of electricity, even competitive network markets must be regulated, given the social complexities and expectations. From this definition, we could include all three sectors of the electrical market no matter how monopolistic they are. Phillips (1993) has pointed out that electrical utilities represent a network that must be induced via regulation to serve the public interest. In more practical terms, in some parts the United States and as well as the UK, the idea of equitable distribution has even been written into legislation. For example, the 2000 Utilities Act in the UK defines that the regulator will have the objective to assure service to those deemed less fortunate in society such as the elderly and impoverished.

A second reason for the regulation of electrical utilities under natural monopoly theory is the potential price and supply manipulation that can take place. Typically, firms in a monopolistic position will manipulate prices. This ability to manipulate prices represents the biggest difference between firms in a competitive market and those in a monopolistic position (Mankiw 2004). The result of monopolistic price manipulation is the product is sold above its marginal cost combine with a purposeful reduction in output, thus resulting in a reallocation of income from the consumer to the producing firm (Baldwin and Cave 1999). This leads to a price that is greater than marginal revenue and also greater than a large percentage of societies willingness to pay (Mankiw 2004, p. 322). Thus, the firm is induced to produce less than what is demanded by society, which results in deadweight losses.

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6.0 Theoretical Approach and Literature Review

This paper will rely heavily upon the theory defined by Robert Baldwin and Martin Cave in their book *Understanding Regulation* (1999) to develop an awareness of the relationship between institutional form and regulatory effectiveness. Their theory will serve as the theoretical centerpiece, but a series of other academic sources will be used to further develop the arguments and thoughts produced in this paper. The other sources will be mentioned here and then applied later in the discussion of findings. While there are a number of theories on regulation, the concepts of Baldwin and Cave have been chosen for the following two reasons. First and foremost, Baldwin and Cave are highly regarded academic experts in this field. Secondly, they attempt to make direct, theoretical connections to what aspects of institutional form are essential for regulators to be effective. While other academic literature discusses the particular elements of institutional form or what effectiveness may look like, the two are rarely tied together. Finally, Baldwin and Cave approach regulation from a multidisciplinary perspective that avoids looking at regulation from one specific academic field. In other words, they address regulation from a multidisciplinary point of view taking into account several of the necessary perspectives of regulation such as the economic, legal, and political points of view. On the other hand, one negative aspect of the theory provided by Baldwin and Cave is that they do not account for the trajectories of the markets prior to regulation or major changes in the market that is being regulated. But, it has been pointed out that dissimilarities such as contrasts in liberalization and competition provide a valuable point of comparison (Steiner 2000).

For instance, Stigler (1971) applies an economics theory to show that politicians and business interests are solely interested in utility maximization, or more specifically, that they try to capture regulatory bodies to induce preferable decisions that reallocate income from society to them. As Majone (1996, p. 35) points out, Stigler's theory, along with most economic theories of regulation, assumes that regulators are passive entities that simply turn political and private interests into policy. As we will see later on, regulators operate in an environment that is much more complex, both in the external pressures that extend beyond politicians and big business as well as internal attributes such the regulatory agencies mandates and methods of due process. Majone goes on to successfully incorporate institutional factors and the balancing act regulators must perform between political pressures, other agencies, the media, and public interest groups. But, he ends by making connections to political control and problems with delegation and avoids the relationships between the make up of the regulatory institution and its effectiveness. Horn (1995) also makes distinctions between the various forms that agencies can take and other factors, such as the level of independence they possess, but makes no connections to regulatory effectiveness.

Returning to the theory in *Understanding Regulation*, Baldwin and Cave establish the most relevant components of institutional form as it relates to regulatory bodies. These components are the:

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- Structure of regulatory body
- Legislative mandates that established the regulator
- Accountability structure
- Degree and type of due process they utilize
- Level of expertise they possess

They also include regulatory strategies as an important element for understanding regulation, but this will be considered separate from institutional form since regulatory strategies tend to be developed at an overarching state or national level. Thus, strategies are still an important precursor because they include the choices that come before the establishment of institutional form. Also, Baldwin and Cave included efficiency as an element of institutional form, but given the public policy perspective of this paper, it is assumed here that efficiency is a result of and not a defining element of institutional form. Returning to the relevant institutional factors, the driving force in Baldwin and Cave's theory is that in order for regulators to be effective, they must have a well-balanced institutional form. In other words, they must not have any shortcomings in any of the fundamental institutional aspects. Lastly, one aspect that is not included by Baldwin and Cave is the institutional historical context of the regulator. In order to fully understand the actions of the regulator, it is nearly impossible to exclude an understanding of their history. This is due to the fact that, like regulatory strategies, the historical perspective of regulators precludes any decisions that they make in the present.

To establish the background for their theory, or the precursor to institutional form in this analysis, Baldwin and Cave define the various forms of regulatory strategies. In their view, selecting the right type of strategy is crucial, and whatever strategy is chosen, it 'will be difficult to justify—no matter how well it seems to be performing—if critics can argue that a different strategy would more effectively achieve relevant objectives' (Baldwin and Cave 1999, p. 34). They list the following strategies as possible methods by which regulators can enforce their policies (1999, p. 34-62):

- Command and Control
- Self Regulation
- Incentives
- Market Harnessing Controls (Competition Laws, Franchising, Contracting, Tradable Permits)
- Disclosure
- Direct Action
- Rights and Liabilities Laws
- Public Compensation/Social Insurance

It should not be expected that a regulator will subscribe to one exclusive form of regulatory strategy. In fact, it is assumed that the majority of regulatory bodies will use a combination of strategies in order to best fit the contextual circumstances (Baldwin and Cave, 1999). Several other academics have also commented on the choice of regulatory strategies. Gunningham and Grabosky (1998) also emphasized that regulators who use a

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combination of strategies possess a more flexible ability to meet their objectives. In other words, when regulatory bodies are established, the regulatory strategy should not be limited and instead should adapt itself to the goals of the regulated market. So, based on these theoretical assertions, this analysis will take the stance that regulators who employ a balanced mix of regulatory strategies will be more effective than those who are limited by a limited number of strategies.

Once the historical context and strategies have been defined, we can move into the establishment of institutional form. The first element here is to define the structure of the regulatory body. It is important to understand this component of institutional form, as the nature of the regulator can greatly determine the achievement of objectives (Baldwin and Cave 1999, p. 64-75). The different regulatory structures defined by Baldwin and Cave are as follows:

- Self-Regulators
- Local Authorities
- Parliament
- Courts and Tribunals
- Central Government Departments
- Regulatory Agencies
- Directors General

It is worth pointing out that institutional form and the regulatory structure are often considered synonymous terms. On the other hand, to base institutional form solely on regulatory structure would leave us with a surface level understanding. While an awareness of structure is vital to comprehending the regulators in question, as Baldwin and Cave show, the complementary aspects of institutional form are just as important as the structure itself. This is backed up by Horn, who says the way regulatory body functions (i.e. whether it is a court or a commission) do not determine the 'unique organizational form' (1995, p. 41). What these arguments suggest is that if regulatory structure were to be treated as the sole element of institutional form, this study would be short sighted because it would leave out several essential elements.

The structure of regulatory bodies has been analyzed by a number of academics. As Selznick (1985) points out, the purpose and strategies of regulation have not changed that much over time-- it is the modes in which regulation has been addressed that has been evolving. Horn (1995) takes a more narrow, American style approach to the establishment of regulatory structures in that he defines three types of regulators (courts, independent boards, or commissions) and says the choice is based upon a balance of transaction costs that legislators must deal with. Through a comparison between American and European forms of regulations, Christensen and Yesilkagit (2005) point out that institutional structures tend to follow the historical context of the nation at hand. To sum these concepts, it can be said that regulatory structures follow national or state trends and these do not change much over time. Therefore, it is assumed that the impact of regulatory structure on effectiveness will remain constant.

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The first element of institutional form beyond structure in Baldwin and Cave's theory is legislative mandates. They suggest that clear and direct legislative authority is important for not only giving the regulator clear guidance as to what is expected, but it also allows both the regulator and general public to understand what the objectives are and measure the regulator upon these (Baldwin and Cave 1999). This factor has also been commented by several other academics that have also placed importance on clear legislative authority. From an American perspective, Phillips (1993) has shown just how vague legislative mandates tend to be, and, while they do allow for a regulatory body to adapt to the market and make their own interpretations based on their expertise, it can make the job of the regulator very complicated when expectations are unclear, especially when they are being pulled in various directions. From the British perspective, Helm and Jenkinson (1998) point out that one of the biggest obstacles in the implementation of privatization in the UK gas and electrical markets has been that the mandates and objectives have never been clear. Vass (2001) also offers some lessons to be learned from the UK regulatory experience. One of his main points is that the objectives for the regulator have to be unambiguous in order to focus on the most important agenda, but he also points out that there must be at least some flexibility for the regulator to adapt to the market circumstances. From these perspectives, we can presume that if the objectives are clearly defined within the legislative mandates, it is more likely that the regulator will be effective.

With that said, it is important to understand why mandates would be made vague. One thing that is clear is, in practice, the spheres of influence and control between politicians and bureaucrats are anything but separate (Pierre 1995). So, it is important to point out why politicians often make mandates ambiguous. First, Horn (1995) takes the approach that lawmakers make legislative mandates vague and ambiguous in order to minimize legislative decision-making costs. In other words, politicians try to distance themselves from decisions that could go awry, even at the expense of not receiving credit for well-conceived programs (Horn 1995). Along these same lines, politicians will also try to distance themselves from the tradeoffs amongst stakeholder groups in order to avoid the appearance that they are favoring or not addressing any particular group. By remaining vague, they can satisfy conflicting stakeholders and maintain coalitions under the same legislation. These concepts are in concert with the ideas proposed by Fiorina (1982) who said politicians not only try to avoid the time and energy necessary to develop well defined legislation but also avoid responsibility for any failed results or disapproving stakeholder groups.

The next central factor for Baldwin and Cave is accountability. They immediately point out that 'regulatory accountability is particularly important when clear legislative mandates are hard to identify and when the divergent interests of various groups of consumers and producers have to be balanced' (1999, p. 286). Clearly, this speaks not only to the importance of accountability networks but also to the balance between accountability and the other relevant factors. Also, within the factor of accountability, there can be a limit to the amount of control a regulator is under. If the regulator's decisions are under too much scrutiny and control, they can lose their validity in the public eye (Baldwin and Cave 1999). So, the balance of too much or too little

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accountability is vital. As Lodge (2004) points out, the general public has been quick to criticize any regulatory bodies that are deemed unaccountable. Green and Newberry (1998), using the privatization of the UK gas and electric markets as their example, state that since it was assumed the market would be immediately competitive, the accountability networks were not clearly established, thus resulting in a lack of validity for the regulator. In terms of the regulator being accountable to too many bodies, Caplow (1985) states that usually when the number of bodies with oversight is increased, the regulators legitimacy becomes more of a question in the public perception. For this analysis, it is thus assumed that regulators will be more effective if the accountability structure has the following characteristics. First, the lines of accountability must not be overly complex. In other words, if the regulator has too many layers of oversight, their objectives may become blurred. Second, the lines of accountability must be clear. If the regulator does not know to whom they must answer to, the likelihood of effectively meeting their objectives will be hindered.

The next central piece to understanding institutional form is due process. With this factor, Baldwin and Cave (1999) make the argument that regulators will be more effective in terms of meeting several objectives and gaining public approval if their procedures are open, transparent, and fair. Once again, tradeoffs must be made with this and other factors. For example, if a regulator makes the process as transparent as possible and allows for public feedback, this could slow down the various regulatory activities, thus making them look inefficient. Baldwin and Cave also point out that different actors in the chain of accountability will have different ideas of what form the due process should take. As mentioned before, Lodge (2004) pointed out those regulatory bodies that lack accountability will be criticized; he also stated that they will become less trusted by the public if they are not transparent in their decision making. While it may seem that due process only effects public perception and not effectiveness, this is not the case. In fact, public (or customer) perception is often considered an objective itself. For example, OFGEM uses customer surveys on an annual basis as a performance measure. So, this analysis will assume that regulators characterized by open and fair forms of due process will be more effective.

The fourth central factor established by Baldwin and Cave is expertise. In order for regulators to maintain their credibility, they must maintain a highly skilled and knowledgeable workforce. According to Baldwin and Cave (1999), regulators can gain the support of the general public based on their expertise in the given field and this expertise can take the place of 'offering to give reasons or justifications' (p. 80). As they later point out, it is difficult to prove that a regulator possesses the necessary expertise, thus making it hard to convince the public that they do in fact have it. Phillips (1993) has also commented on the necessity for expertise and has put in terms of regulatory effectiveness. In his assessment, he basically stated that without the ability to attract and maintain a workforce with the necessary expertise in all of the relevant skill sets, regulators will compromise their efficiency and effectiveness, thus potentially leading to unnecessary rate increases and poorer service. Thus, in comparing the two regulators in question, those who not only lack expertise but also cannot maintain it over time will most likely be less effective.

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Finally, in presenting these factors, Baldwin and Cave place the greatest emphasis on the balance between the relevant factors. In their words (1999, p.245):

‘What matters is the collective justificatory power of the arguments that can be made under the five headings. Strong claims across the board point to regulation that deserves support, generally weak claims indicate a low capacity to justify. How though, can trade offs between claims be dealt with? How, can it be said whether a weakening of rights of participation in return for improvement in satisfying the statutory mandate is a good or a bad thing? The answer is that, at the end of the day, the weight that individuals place on each legitimating argument will reflect their personal political philosophies and, in the absence of all persons agreeing on the nature of an ideal world, we will differ on matters of weighting. What we do seem to agree on, however, is the benchmarks themselves. Any perusal of debates on regulation will reveal their exclusive usage.’

So, according to Baldwin and Cave if we measure and analyze each of the relevant factors, there should be a connection between the identified elements of institutional form and the effectiveness the regulatory body in terms of objective achievement. It must be assumed that trade offs will have to be made and that no regulator can possess the ideal situation in all factors of institutional form. Also, regulators who want to be effective are given what they have to work with. Most, if not all, of the institutional attributes are decided by political forces. In the end, those regulators who have a proper balance within their form will be the most effective.

7.0 Research Design and Methods

Staying in line with the structure of the research questions, the designs and research procedures will be addressed within the categories of *before* and *after* measurements. Overall, this paper will utilize an organizational case study design. Obviously, OPUC and OFGEM will be the cases in question. This paper will analyze both qualitative and quantitative data, so a flexible case study design is appropriate to allow any developments that arise during the research process (Robson 2002). Also, case studies usually incorporate both qualitative and quantitative measurements (Robson 2002), so this style of project will allow for the incorporation of both types of data. In the *before* section, a more normative, qualitative approach will be used. In contrast, the *after* section will utilize more empirical, quantitative data in order to assess regulatory effectiveness.

7.1 Before Measurement: Historical Context, Regulatory Strategies, and Institutional Form

In order to establish the elements of the *before* section, the approach has been unobtrusive research and information collection. The information has come from a wide range of sources. For secondary information, academic literature and professional

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periodicals have been used to address each aspect in the *before* section. The first step taken here was to gather academic literature about utilities regulation in the UK and the United States from the last ten years to develop a theoretical construct. This initial search was extensive and drew from literature in the Erasmus University and Indiana University libraries. The literature was pulled using keyword and author searches. An effort was made to use a balance of North American and European literature with a focus on the arguments related to effectiveness and the structure of utility regulators. It was also important at this point to develop a thorough historical context of regulators and jurisdictions in question.

For the professional journals and magazines, a selective sample of energy related sources from the last five years has been used. In this case, individual word searches were used in the Lexis Nexis research search engine using the following words: electricity, regulator(y), objectives, performance indicators, and measurement. Examples of periodicals that were found include *Power Markets Week* and *Retail Energy*. For the academic literature, various articles and books were used to develop the theoretical perspective of this paper.

For primary sources of information, the initial search was taken from content maintained on the regulators websites. Also, other public information sources such as the United Kingdom's Office of Public Sector Information legislative database and the United States Department of Energy websites were used. As mentioned before, this was an unobtrusive form of data collection, so no direct contact was initially made with the regulators in regards to any *before* measurement data needs. When the analysis was in progress, the regulators were contacted via email to address any aspects were necessary but not available to the public.

Then, the primary and secondary information has been combined in order to develop a well-rounded historical context and a full understanding of the regulatory strategies and institutional form. It is important to point out that this section will be more normative in its approach and will rely heavily upon more qualitative data.

7.2 After Measurement: Outcomes, Performance Indicators and Effectiveness

In order to assess the *after* measurement portion of the central research question, the following methodology was used to establish the relevant performance indicators. It should be pointed out that, while the establishment of performance indicators obviously comes before their measurement, they represent the empirical components that allow us to critically assess the *after* measurement section and whether or not the respective outcomes have been successful. So, the overall methodology for *after* measurement will be described within the establishment of the performance indicators, which will be broken up into two sets.

The first set is based directly on the objectives already publicly established by the OPUC and OFGEM. In other words, this paper will first address whether or not the regulators have achieved the outcomes they have established for themselves and announced to the public. In some cases, the regulators have already established very specific performance

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indicators of their own. For example, the OPUC attempts to measure its promotion of competition by tracking the ‘total number of electricity service suppliers certified and aggregators registered by the OPUC’ (‘Part II: Key Measure Analysis for Progress’ 2004). For these indicators, data will be collected and directly compared against these indicators. Thus, the research method for the first set of performance indicators will be unobtrusive to the regulators and will be directly gathered verbatim from their documents. Also, in order to facilitate the comparative analysis between OPUC and OFGEM, the performance indicators for each regulator will be applied to the other where possible. Of course, there will be some cases where some adjustments will be needed to be made in order to make this cross comparison more relevant. For example, in order to establish nominal price comparisons, the difference in inflation measurements (Consumer Price Index in Oregon and the Retail Price Index in the UK) must be taken into account. For other cases, a cross comparison will not be possible at all. For instance, OPUC makes a comparison in prices to the rest of the United States. In the case of OFGEM, this comparison is not possible since it is already regulating an entire country.

For several other objectives, the regulators have yet to announce clearly established performance indicators or have simply not established them at all. In this case, a series of performance indicators will be constructed and applied in an attempt measure the effectiveness of the regulators based on the interpretation of their objectives. This application will be based on a content analysis that has been established on a range of media sources such as professional journals and magazines. Also, all available information presented on behalf of the regulators will be analyzed and incorporated. The goal of this content analysis will be to establish some performance indicators that are aligned with accepted industry standards. In order to conduct the content analysis to establish some relevant performance indicators, the following strategies have been applied. These are very similar to the research method applied to the *before* section. First, for the professional journals and magazines, a selective sample of the energy related sources from the last five years was used. In this case, individual word searches were used in Lexis Nexis using the following words: electricity, regulator(y), objectives, performance indicators, and measurement. All of these words were used in various combinations to gather as many relevant articles as possible. Second, from the information that is obtainable from the regulators, the strategy will be to examine every document available. In this case, themes will be used as the recording unit instead of individual words.

Once the performance indicators were established, the collection of empirical data was set into motion in order to analyze the outcomes and effectiveness of the regulators. The first round of data collection was pulled from the various regulatory and government websites. The data was consolidated in charts where any discrepancies or missing data points could be assessed. It has been previously assumed that all the necessary data might not be available in order to fully assess the regulators. So, once the missing data had been identified, the regulators were contacted via email in order to gain access where possible.

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8.0 Research Findings: Before Measurement

In order to present the research findings, the *before* measurement aspects will be presented first. These are institutional historical context, regulatory strategies, and institutional form. Then, the *after* measurement findings will be presented. This will include the measurement itself, the establishment of performance indicators, and the outcomes related to the defined objectives. Under each section, the findings for both OFGEM and OPUC will be presented along with a short comparison of the two.

8.1 Institutional Historical Context

To understand the regulation of electricity in the UK and Oregon, it is important to understand how the industry has evolved. Like other institutions, regulatory bodies develop ideological and historical dispositions that affect their current and future decision making (Doern and Wilks 1997). For the purposes of this paper, the majority of emphasis on the historical context will be on last twenty years of regulatory evolution. For the UK, this is a logical starting point due to the fact that the current state of regulation has been most defined with commencement of the privatizations of network utilities in 1984 and then with the privatization of electricity occurring in 1990-91 (Parker 1999). For Oregon, the last twenty years provides a valuable perspective due to the fact that much of the evolution of electricity regulation has occurred since around the middle of the 1980s.

8.1.1 OPUC

The regulation of utilities in Oregon has a long history. In 1907, following the direction of New York and Wisconsin, legislators in Oregon introduced regulatory statutes for the governance of railroads (Hammel, Jr. 1968). Then in 1911 during the 26th regular session, Oregon legislators extended the power of the Railroad Commission to cover the gas, electric, and telephone utilities (Bliler 1975). In the first half of the century, the significance of regulators in governance at the state level greatly increased due to the apprehension surrounding the legitimacy and reliance upon large private corporations.

Regulation at the state level remained largely unchanged until the 1960s. It was during this decade that state regulators ran into jurisdiction problems due to the development of long distance transmission capacity as well as expansive nationwide natural gas networks (Hammel, Jr 1968). Thus, the Federal Power Commission (FPC) assumed control over all interstate transactions, but only at the wholesale level. In other words, all governance related to the generation, transmission, and distribution at the retail level and any intrastate wholesale market activity was left to state regulation.

The 70s were defined as being a period of upheaval in the utility markets due to skyrocketing interest rates, increased environmentalism, and the various energy crises. Thus, citizens became much more concerned about both environmental policy and price structures (Phillips 1993). This was a huge transition in the regulatory environment in the United States. Like no other time in history, regulators were now being asked to balance the complex demands of a bevy of stakeholders and were trying to make decisions that

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met the minimum requirements for all parties involved. At both the state and federal level, regulatory authority was increased. Another section was inserted into the Public Utility Act of 1935, which expanded the role of FPC to include rate approval of the federal power marketers (Phillips 1993), but their regulatory powers basically remained at the interstate wholesale level. Then, in 1977 the FPC was placed under the authority of the Department of Energy and was renamed the Federal Energy Regulatory Commission (FERC), which was an indication of a reorganization as a result of the public discourse with the regulated industry and the mishaps related to the above crises (Noll 1985).

It was in the 80s until present day when the OPUC saw its most significant changes in both objectives and institutional form. In Oregon, there were also a series of structural changes during this decade. In 1986 state referendum, OPUC was amended from a one-person commission to a three-person commission ('History, Duties, Functions' 2003). The parameters for the commissioners were thus amended and included new guidance on term lengths, eligibility, and method of appointment¹. Under this new structure, the three commissioners were considered equal and appointed an executive to oversee the daily operations of the commission (HB 3615 Interim Task Force 2001). In 1987, with the additional commissioners appointed by the governor of Oregon, the commission in its new organizational form was put into motion and began actively to regulate utilities markets (OPUC 2005).

In 1992, order 888 from FERC was a landmark move towards the promotion of competitive markets (Helm and Jenkinson 1998). Although it only affected the interstate wholesale market (thus outside of OPUC's jurisdiction) it did set the political tone for a move towards more competitiveness in utility markets. Then in 1995, the regulatory functions related to railroads and highways was moved out of OPUC and into the Oregon Department of Transportation and for the first time in approximately 80 years, thus making OPUC's focus primarily on the regulation of network utilities of electricity, gas, and telecommunications.

Within Oregon, 1999 was marked by two of the most influential legislative mandates regarding the regulation of utilities. The first legislative amendment was State Bill 1149, which was the first clear move towards a restructured market that promoted competition in electricity. Implementation for this bill was scheduled for 2001 and the final result would be choice between various services and providers for Oregon customers (HB 3615 Interim Task Force 2001). The second major amendment was House Bill 3615 in 1999, which changed the way OPUC conducted its regulatory function and the objectives it would work from. This bill required that the Governor appoint a OPUC chairperson and gave the chairperson autonomy in the internal operations of the commission. As part of this bill, it was also required that an interim task force chosen by the Governor investigate the institutional form of OPUC and recommend any changes they deemed necessary. The task force concluded that, given the complexities of utility regulation, OPUC was functioning well, its structure was in alignment with its mission, and suggested that only a few procedural changes be made (HB 3615 Interim Task Force 2001).

¹ See ORS 756, amendment 1985 c.834 § 2-8 for specific details

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In 2001, the market restructuring mandated by SB1149 was set to take place. At this time, the market was made more competitive via restructuring. Both large commercial and industrial customers could now choose from which power generator they would buy their power, but smaller customers as well as residential markets would remain the same for the time being. After a slowed implementation due to concerns of other electrical markets such as California, OPUC implemented a legislative mandated market restructuring and deregulation scheme. At the point of implementation, the Task Force that was investigating OPUC announced that given the complexities involved in switching from a regulated to competitive market, the evolution may take much longer than expected (HB 3615 Interim Task Force 2001).

As Oregon has implemented its new market structure over the last five years, most of the recent attention has been associated with the lack of customer switching as a result of the new market parameters that were intended to increase customer choice and competition. In fact, only a few months after the market restructuring in 2002, the OPUC was already under pressure to look at new ways to attract customers to the variety of competitive options that were made available (Retail Energy 17 May 2002, Retail Energy 13 Dec 2002). Meanwhile, other industrial and commercial customers complained that there still were not enough competitive options and that the OPUC's rules continued to be a regulatory roadblock in making the market more attractive to competition ('With No Competition in Oregon...' 2003). While many observers of regulation have pointed out that market restructuring, especially in fields that involve natural network monopolies, can sometimes take at least ten years to develop (Helm and Jenkinson 1998), it is clear here that the public and political pressures placed the onus on the OPUC to make immediate changes if the market did not become competitive right away.

8.1.2 OFGEM

In the UK, the earliest major development of government oversight in regards to electricity prior to World War II was the establishment of the Electricity Generation Board who was tasked with the construction and coordination of a national transmission grid as well setting national electricity standards (Lillis 1997). This tendency towards nationalization continued after World War II, as proved by the fact that every aspect of the electrical market was owned and operated by the British government. This governmental control grew with the Electricity Act of 1957 and the establishment of the Central Electricity Generating Board, which controlled all aspects of the generation and transmission (Lillis 1997). This also established the twelve regional area electricity boards that were responsible for the final distribution of electricity to customers. Up until the 1980s, the main theme in the governance of electrical markets was the differing political viewpoints of the two main parties in the UK. In the 1970s, the political debate was dominated by the Labour party, who turned the issue of electricity into a macroeconomic issue and used electricity prices as a means for controlling inflation and as a reactionary tool to currency and oil crises (Lillis 1997).

In the 1980s, the major theme in regards to regulation and the electrical industry itself was privatization. In fact, in this time period the UK and New Zealand, and Chile (to a

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lesser-known extent), became the champions of privatization and have provided an example for other countries to examine and apply (Cowan 2001). Prior to the 1980s, the concept of privatization of utilities was rarely discussed, except to raise money (McLean 2004). It was during this decade that the UK began to abandon public ownership of utilities, thus changing the role of regulation. The 1983 general election marked the point in which privatization of utilities became both a public and political issue (McLean 2004). Soon thereafter, the Thatcher administration made good on its pledge with the promotion and passage of the Electricity Act of 1983. The main focus of this bill was to promote the growth of independent electricity generators, which had been proscribed prior to this act, and also force the CEGB to purchase power from the newly created generators (Lillis 1997). But, given the barriers to market entry at this time, the 1983 bill was more symbolic than practical. Elsewhere in the other utilities industry, the Thatcher administration proved its commitment to moving away from government ownership with the privatization of British Telecom in 1984. This also marked the founding of the Director General style regulation of utilities in the UK with the formation of the regulatory organization known as the Office of Telecommunications (Parker 1999).

It was not until 1987 that the concept of privatization of the electricity field began to materialize, a year after the natural gas industry had been privatized combined with the establishment of the Office of Gas Supply. In the White Paper issued during that year, it was recommended that the CEGB be dissolved into three generating companies, the establishment of a single transmission company who would be responsible for the promotion of competition, and the privatization of the twelve distribution boards take place (Green and Newberry 1998, Baldwin and Cave 1999). This policy development was the initiation of the separation of generation and sales from transmission, thus freeing activities with potential for competition from the market sector that is more naturally monopolistic (Helm and Jenkinson 1998). This move towards a more open and competitive market was further accelerated by the introduction of the Single European Act in 1987, which set out to establish the open market between European member states.

In 1989, perhaps the most important legislation pertaining to electrical markets and the establishment of regulation was passed. The 1989 Electricity Act signaled the move from debate to reality in regards to the privatization of the UK electrical market. It was in this act that the independent regulatory body, the Office of Electricity Regulation (OFFER) was given oversight over the soon to be privatized electricity market, and the Director General of Electricity Supply, the individual with direct oversight of OFFER were established (Green and Newberry 1998). At this point in time, the role of the director and OFFER was dominated by the concepts of competition, consumer activism, and the maintenance of privatization. The electrical and gas industries were the only utilities to have the promotion of competition as a primary objective while the other utilities had it as a secondary objective (Parker 1999).

The electrical market became more competitive over the next decade leading up to 1997. In that year, a Labour government was put into power for the first time in 18 years. This is important to the electricity industry because of Labour's continuation and even strengthening of the prior Conservative administrations' regulation and privatization

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policies (Vass 2001). Most importantly, the policies of competition and regulation by an independent regulator remained in place. The election was also important due to the pledge by the new Labour government to make changes in regards to the alleged windfall profits that privatized utilities were earning (Vasconcelos 2001). Two years later, another major development was made in the regulatory field. During this year, OFFER was combined with OFGAS, the regulatory body of the privatized natural gas market. The two regulators were combined under the title of OFGEM, or the Office of Gas and Electrical Markets. The reason for this was the similar attributes between OFFER and OFGAS (Tovey 2004) and the ever increasing connections between the gas and electric companies (Johal 2002). Also, the perceived efficiencies that could potentially be gained by this consolidation led to their combination.

In the UK, the concerns surrounding the balance of regulatory legitimacy and the unquestioned reverence for privatization remained central issues. Since the Labour Party assumed control in 1997, the powers in both enforcement and scope of OFGEM have been taken over by various players in the British bureaucracy such as the Department of Trade and Industry (Bower 2003). These moves have been met by opposition by some consumer groups who felt that an undisturbed OFGEM was an independent body that was primarily focused on customer issues. But the negative press OFGEM received on issues such as being an 'ever growing bureaucracy' (EU Energy 2003) and pointed statements like 'the regulation of the electricity and gas markets, which have become regulatory playgrounds' (Henney 2003) have led to the systemic reduction of OFGEM's role in electricity regulation.

Then, the Utilities Act of 2000 became the second piece of landmark legislation applicable to the regulation of electricity market in the UK. This act, established the Gas and Electrical Markets Authority, which essentially replaced the role of director general for OFGEM as a board of commissioners to oversee and set the direction for the regulator. The electrical market regulatory powers of OFGEM remained the same as spelled out in the Electricity Act of 1989 and the Competition Act of 1998, but it was now under the authority of the Gas and Electricity Markets Authority (Energy Economist 2003b). The Utilities Act of 2000 also created the consumer watchdog known as Energywatch, which acts as an independent consumer organization who advocates customer rights amongst the regulator and utility companies.

Since its establishment until now, OFGEM has been a lightning rod for criticism. For example, In 2003, over a decade since the electricity markets were privatized, energy minister Brian Wilson placed the burden of the lack of benefits of competition not going to those who were actively switching on OFGEM (Energy Economist 2003). During that same year, Callum McCarthy, the director general of OFGEM was virtually forced to resign. On the way out, he actively tried to dispel the common public perceptions that OFGEM was ineffective in achieving its goals. In a speech to the Institute of Electrical Engineers, he pointed out that all industrial and commercial customers were seeing reductions in costs, the pricing strategies utilized by OFGEM were not ruining the market, unlike many of his critics had implied, and that it was a matter of letting the market establish itself a bit more before residential customers began to see the overall

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benefits of competition (EU Energy 2003). Since then, OFGEM has been stripped of many of its regulatory enforcement powers and these have been moved across several government bodies.

8.1.3 Comparison

First, it is clear that the issue of regulation has been a highly political issue throughout the lives of both OFGEM and OPUC. Because of this, both regulators have frequently been modified through amendments in legislation. This is recently evidenced by the restructuring that took place in the Oregon electrical market in 2001-02 and by the changes in OFGEM's structure and authority in the 2000 Utilities Act. This is a trend that is likely to continue as politicians will look to manipulate the form of the regulators to meet their needs.

Also, it appears that the promotion of competition has been a consistent theme for both regulators since the 1980s. The UK started this push much earlier than Oregon did, but this could be due to the fact that it took more time for the promotion of privatization to work down to the state level from the Reagan administration in the United States. In either case, it could be said that OFGEM has more experience in dealing with privatization thus giving it an advantage in dealing with the challenges presented by the competitive market today.

8.2 Intergovernmental Regulatory Strategy

8.2.1 OPUC

Before going into the intergovernmental regulatory strategies of Oregon, it is important to understand that almost all of the characteristics of Oregon regulation can be traced back to that of the United States as a whole. So, much of the regulatory strategies mentioned here have been adopted from the federal government or from other states. Thus, there are three main themes to the intergovernmental regulatory strategy of Oregon:

- Independent Regulatory Commission
- Legalism
- Market Reliance
- Rate of Return Regulation

The most prevalent characteristic of United States regulatory strategy is the use of independent regulatory commissions. The use of this type of commission is intended to separate regulators from political forces. Given that most regulators have their commissioners appointed and budgets approved by the executive and legislative branches of their respective government this concept may be a bit idealistic (Phillips 1993), but the fact remains that in most cases the only way to challenge a regulatory decisions is through the judicial appeals process. For OPUC, this overarching strategy allows for a great deal of autonomy in its decision making, other than the potential for judicial review. This leads us to the next intergovernmental regulatory strategy, which is a high amount of

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legalism in United States regulation. In most cases, the courts are directly involved in the regulation of utilities via judicial review (Buigues, Guersent, and Pons 2001). Even if judicial review is excluded, there is still a highly legalistic feel in their public hearing processes and the like (Phillips 1993). This legalistic environment has great impacts on OPUC, especially in regards to the ever present potential of judicial review.

Another intergovernmental regulatory strategy in America is the reliance upon the market. The concept of minimal government interference as a form of economic regulation instead of relying on nationalization has been the trend throughout the history of the United States (Jabko 2004, Majone 1996). While this strategy has been ever present, it does not mean that regulation has not played an important role. In the case of OPUC, the move to more reliance upon the market and competition has been steady, but the need for regulation has not ceased.

The last overarching strategy to mention here is the use of rate of return regulation in the United States. The details of this form of regulation will be more clearly defined under the tools section below, but it is important to include here given the widespread use and acceptance of it at both the federal and state level. While the use of rate of return regulation in the United States has been highly scrutinized (Baldwin and Cave 1996, Phillips 1993), its use is still extremely prevalent. For OPUC, the use of this price cap has been assumed in all forms of utility regulation and is still in use today.

8.2.2 OFGEM

In the UK, the intergovernmental regulatory strategy is most represented by the following themes. While all of these have an overarching impact on OFGEM, there are some variations that have occurred since the privatization of the electrical market in 1989. The overall strategies are as follows:

- Privatization
- Single Industry per Regulator
- Incentive Based Regulation
- Ministerial Oversight

As mentioned in the historical context above, the focus on privatization is found throughout regulatory governance in the UK. All of the other major utilities, including telecommunications, gas, and water had all been privatized prior to the electrical market in the 1980s. The overarching rationale behind this was that prices could be reduced and efficiency improved if the utilities were privatized with a state regulatory body to oversee the market (Parker 1999). The impact on the regulation of electrical markets has been an ever present importance place on the maintenance of the principles related to privatization and competition. This is echoed in the objectives of OFGEM.

With the move towards privatization, two other strategies utilized in the UK have been the use of director general style of governance and the single industry focus of each regulator. The rationale behind the use of single industry regulators was that they would

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be able to develop and maintain an expertise and thus be able to react quickly to changes in the market (Parker 1999). The underlying principle for using a director general was to establish a level of independence from ministerial control for the regulator. Since the privatization in 1989, the regulation of electricity has diverged from both of these national strategies. In 2000, gas and electricity became the first utilities to be combined under the same regulator due to the similarities between the two markets. As part of that move, the autonomy of the director general was abolished, and the regulation by a commission board was established (Vass 2001).

Another regulatory strategy that has been used across the UK has been the use of incentive based regulation, otherwise known as price cap regulation. Since this is also a tool, it will be covered in greater detail below while the strategic aspects will be covered. This method of price control has been the standard mechanism used in the UK since the privatization of the utilities in the 1980s. During that time, Professor Stephen Littlechild was tasked with developing a method of price control, and he argued that incentive based regulation was better at generating incentives for efficiency and avoided problems associated with regulatory capture when compared to rate of return regulation (Cowan 2001). This method is still in use by all the utility regulators today.

The final UK regulatory strategy theme is the influence that ministries have upon regulators. While one of the main reasons for the use of director generals was to establish regulatory independence, regulators like OFGEM are ultimately accountable to the respective Secretary of State who have certain powers over the decisions made by the regulatory bodies (Parker 1999). This ministerial oversight has been reinforced in legislation related to regulation. For OFGEM, this not only affects the accountability structure they abide by but also the weight their regulatory decisions carry.

8.2.3 Comparison

The most significant similarity between the intergovernmental regulatory strategies of the US and the UK is their reliance upon the market and privatization. While the US has a much longer history of this strategy (Majone 1996), the UK has advanced rapidly since the 1980s. In fact, when we compare OFGEM and OPUC, the UK has surpassed Oregon in its progress in the development of a more market based regulatory strategy.

On the other hand, there are several differences between the UK and the US. The first and probably most important difference is that the UK tends to rely on ministerial oversight while the US relies on judicial review as a method of keeping regulatory bodies in check. The effect this has on the regulators is most felt in their independence. In the UK, regulatory decisions are met with more ministerial discretion before they are made final and in some cases, the decisions are immediately referred to the respective ministry. In the US, decisions are only referred to the courts if an affected citizen requests a judicial review. Second, regulators at the state level tend to oversee several different types of utilities while in the UK they tend to be more specialized. While this is not the case for OFGEM, one would assume that they could maintain their expertise better since OPUC has to balance their workload between the regulation of four different types of

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utilities. Lastly, the two countries use to different methods of price capping. While this is a highly debated topic, given the scope of this paper, it is hard to assess the effects of this upon regulatory effectiveness.

8.3 Regulatory Tools

8.3.1 OPUC

There are various tools that OPUC has in order to regulate the Oregon electricity market. All of these are defined in legislative mandates. They are as follows:

- Rate of Return Price Regulation
- Fees
- Contracts
- Investigations and Judicial Hearings

The first step for OPUC in regulating the electrical market is through the contract approval and oversight process. In order to generate or distribute electricity in Oregon, a firm is required to establish a contract that includes the allocation of the served territory and customers (Oregon Legislative Assembly 2004, p. 85). This legal contract must be approved by OPUC who then announces a 30-day filing period, whereupon any affected customer may ask for a hearing procedure regarding the legality of the contract. Any amendments must go through an approval process by the OPUC and once again put up for public review.

In order to fund the OPUC, all electrical utilities are required to pay an annual fee. The total amount of the payment is calculated by multiplying a set fee by the number of delivered kilowatt-hours (Oregon Legislative Assembly 2004, p. 11). If a utility does not pay the established fee, the OPUC can employ its investigatory and hearing practices in order to ensure that the utility pays its fee and if necessary, impose an additional penalty. The investigatory and hearing practices are described below.

To regulate prices in the Oregon electrical market, OPUC employs rate of return price regulation. It is required by legislative mandate that each utility must file a rate schedule with the OPUC. This proposed schedule must show all rates and other charges and is open to public review. In the review, it is up to the utility to prove that their proposed schedule is 'in the interests of utility customers and the public generally and results in rates that are just and reasonable and may include provisions establishing a reasonable range for rate of return on investment' (Oregon Legislative Assembly 2004, p. 33). At any time, the OPUC can suspend the rate schedule of any utility due to an investigation or hearing.

If at any time, a citizen or interest group feels that a firm has violated a contract, they may request the OPUC to conduct an investigation. The OPUC can also initiate its own investigation as well if it feels that a contract has been violated. If the OPUC investigation is concluded and finds that the contract has been violated, the regulator can file a declaratory ruling that is a binding decision. It is up to the regulator to decide what

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the penalties and consequences of the ruling will be. If the initiator of the original complaint or the impacted utility are not satisfied with the ruling, they may file a lawsuit in the county circuit court of the county where the violation took place. If either party is not satisfied with the equity of the court ruling, they can appeal to the Court of Appeals (Oregon Legislative Assembly 2004, p. 87). In the latter cases, it is left up to the court to decide what the penalties or ramifications of the contract breach should be.

8.3.2 OFGEM

For regulatory tools, OFGEM uses the following:

- Incentive Based Regulation
- Fines and Penalties
- Licenses and Fees
- Arbitration

The first tool that OFGEM can apply is issuance of licenses to utilities and potential market entrants. A license represents an agreement between the utility and the Secretary of State and director of OFGEM. It is stated in legislation that the license holder must abide by any direction of the Director and Secretary of State as defined within the license, but the Director and Secretary have final discretion in which parts of the license are enforced or not (United Kingdom Parliament 1989, United Kingdom Parliament 2000). Upon the application for a license, the respective utility is subject to an issuance fee and is required to pay this within a period of time specified by the Director or Secretary. Once a license is granted, it is then the responsibility of the license holder to coordinate their generation or distribution practices with the nation wide plan in order to maintain an efficient system of electrical supply (Electricity Act 1989).

With incentive based regulation, OFGEM focuses upon and measures the resulting outputs of the regulated firms as well as customer service. In order to achieve price control targets as well as investment goals, OFGEM feels that incentive based regulation is the best regulatory method to achieve this. For example, OFGEM released a report at the beginning of 2005 reporting on the quality of service for UK distribution, with the measurement based on power cuts to customers and the top performers receiving a 1% revenue increase (Energy Economist 1 Jan 2005). Included in this are also disincentives in the form of fines.

Probably the most important function of OFGEM is its ability to set prices as defined by regulatory legislation. The regulatory tool that is meant to incentive customers to be efficient and investment oriented is RPI-X, which is a form of price cap regulation. Kevin Lillis, a regulation expert from the United States Department of Energy provides a concise definition of how RPI-X works in theory:

‘The RPI in RPI-X regulation represents the change in the retail price index in the United Kingdom and is a measurement similar to the Consumer Price Index (CPI) in the United States. X is generally considered to be a productivity factor,

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which could be positive if the industry is expected to operate more efficiently in the future, or negative if efficiency declines are expected.³⁴The productivity factor, X, is based upon past performance and projected analysis of future productivity gains.’ (1997, p. 11)

In the UK, RPI-X price regulation has been applied only to transmission and distribution. Since generation is considered to be a naturally competitive market, price setting has not been applied to this sector. Instead, market forces have been used to establish fair and competitive prices.

One of OFGEM’s most powerful tools is its ability to levy fines and penalties against firms who do not follow regulatory policies. This was established in 1999 and was announced in the Queen’s speech in November of that year (‘Utility bill will give regulators sharper teeth’ 1999). Fines are levied predominately when a firm has or is likely to breach a contract. In those cases, OFGEM abides by the following course of actions. First, OFGEM identifies whether or not the firm is or is apt to violate the license and then issues a provisional order that describes the series of procedures required by the firm in order to comply with the license. If OFGEM is not satisfied with the actions of the relevant firm within a specified time period, the regulator will notify the firm in question and issue a final order, which must contain actions that are perceived to threaten the license, any required actions the firm must pursue, and the timeline the firm must rectify its actions. Under either provisional or final orders, the firm must relinquish to OFGEM any requested information and documentation that could be obtained through a civil or criminal court proceeding. OFGEM reserves the right to withdraw any provisional or final order as it sees fit. Also, the firm is given the opportunity to appeal any order or final decision up to forty-two days after any ruling.

Lastly, in any disputes between suppliers and parties requiring electricity, OFGEM may either settle the dispute itself or send it to an appropriate arbitrator. This discretion is defined in the 1989 Electricity Act and is left up to OFGEM to decide. Also, OFGEM may decide that the dispute at hand falls under the jurisdiction of the MMC or DTI. In that case, the regulator may delegate the dispute and all relevant information to one of those bodies. Finally, OFGEM may require any supplier to continue to supply electricity until the dispute is resolved.

8.3.3 Comparison

The main similarity between OPUC and OFGEM is the mandatory licensing and subsequent fees that utilities must abide to in order to participate in the electrical market. This acts as a control function that the regulators can use to maintain market balance and continuity. These contracts or licenses are also the legal documents that stipulate what utilities can and cannot do and the sanctions if there is a breach.

The two biggest differences between the tools used are the type of rate regulation and the amount of reliance upon the judicial system. OFGEM employs incentive based regulation while OPUC uses rate of return regulation. In either case, the use of these methods is

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more related to the intergovernmental regulatory strategies in that in the United States and United Kingdom, these respective methods are used in every type of utility regulation. The same could be said for the reliance upon the judicial system for the resolution of disputes. In the United States, the use of the legal system in solving regulatory issues is much greater than in the United Kingdom. This is evidenced here. While OPUC uses the state courts to resolve any contested matters, OFGEM will send any disputes to arbitration instead.

9.0 Research Findings: Institutional Form

9.1 Regulatory Structure

9.1.1 OPUC

The regulatory structure of OPUC could best be described as a regulatory agency headed by an independent commission. Currently, it consists of a three-member commissioner board and subsequent support staff. The agency is kept separate from any central state government departments and the only political ties are to the Governor of Oregon and the Oregon Legislative Assembly. The selection of commission members as well as the appointment of the chairperson is conducted by the Governor in accordance with section 4, Article III of the Oregon Constitution (Oregon Legislative Assembly 2004, p.5). In order to avoid political bias, the commission cannot consist entirely of members who are registered under one political party. Once appointed, commissioners serve a four-year term but can be removed at any time by the Governor for any reason. This executive power is absolute and cannot be challenged in court (Oregon Legislative Assembly 2004, p.5).

9.1.2 OFGEM

If there was one regulatory structure that best fits OFGEM, it could be defined as a regulatory agency headed by a commission, but it would not be reasonable to call them independent. The Gas and Electrical Markets Authority (GEMA) is the governing body that sets the objectives and makes all final regulatory decisions in relation to the market, as defined by the 2000 Utilities Act. While it is considered OFGEM's main oversight body, OFGEM's managing directors assume five out of the twelve GEMA seats while seven external market experts assume the other positions. While the question of whether OFGEM's independence or not will be handled later, it should be briefly stated here that given amount of discretion the ministries have in changing or nullifying OFGEM's decisions, it cannot be considered a truly independent regulator.

As defined by the 1989 Electricity Act, the Secretary of State of the Department of Trade and Industry appoints the director general of OFGEM for an appointment of five years, but the Secretary can remove the Director General at any time. Since the 2000 Utilities Act, the name of the OFGEM's director general has been changed to chief executive. The Secretary also appoints all the member seats on the commission.

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9.1.3 Comparison

The regulatory structure of OPUC is more straightforward and follows the style of an American independent regulatory commission. OFGEM, on the other hand, is similar in that it operates like a commission, but it has two major differences. First, the commission for OFGEM consists of a majority of external market experts and a minority of internal OFGEM officials. Secondly, the level of independence for commission decisions at OFGEM is much weaker than at OPUC.

9.2 Legislative Mandates

9.2.1 OPUC

While it could be said that the OPUC legislative mandates are clearly defined, the legislation related to objectives is extremely vague. The 'Blue Book', which contains all the legislative mandates related to regulation of public utilities in Oregon, is over 300 pages long. But, very little of this is devoted to specific regulatory objectives. Instead, the mandates are focused on clarity about the tools and procedures of OPUC. For example, in regards to the oversight OPUC has over utilities, the mandates clearly defined exactly what the OPUC has control over, which reads as follows (Oregon Legislative Assembly 2004, p.30):

- Proposed payment of salaries of executive officers;
- Donations;
- Political contributions and political advertising;
- Expenditures for pensions or for a trust to provide pensions for employees and officers;
- Other expenditures and major contracts for the sale or purchase of equipment; and
- Any payment or contemplated payment to any person or corporation having an affiliated interest for service, advice, auditing, associating, sponsoring, engineering, managing, operating, financing, legal, and other services

What is lacking from the OPUC mandates is specific guidance related directly to objectives. The mandate requires that the commission establish a regulation plan that takes several interests into account such as the interests of utility customers as well as reliability and safety, but it does not say what the objectives should look like or how they should be defined or measured.

9.2.2 OFGEM

The legislative mandates that establish the functions and powers in relation to the regulation of electricity of OFGEM are established in the following bills:

- Electricity Act of 1989
- Utilities Act of 2000 (amends several parts of the Electricity Act of 1989)

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As pointed out by Prosser (1989) and Burton (1997), the major legislation related to regulation established in 1989 was significantly lacking in guidance related to regulatory objectives. In the Electricity Act of 1989, it is unclear as to who has overriding authority in electrical markets as the Secretary of State and Director General of regulation are often listed as mutually exclusive positions. On the other hand, what is clear is that the Secretary of State has been given extremely broad authority and discretion in any rulings that are brought against firms or individuals by the regulator.

The introduction of the Utilities Act in 2000 led to much more clarity regarding the objectives and expectations of the regulator. Once again, it was unclear as to what the divisions of responsibility between OFGEM and the Secretary are, but the overarching objectives set in the legislative mandate for both parties are outlined as follows (United Kingdom Parliament 2000, p. 9-10):

- Protect the interests of consumers in relation to electricity conveyed by distribution systems
- Promoting effective competition between persons engaged in, or in commercial activities connected with, the generation, transmission, distribution or supply of electricity.
- The need to secure that all reasonable demands for electricity are met; and
- The need to secure that license holders are able to finance the activities which are the subject of obligations imposed by or under this Part or the Utilities Act 2000
- To promote efficiency and economy on the part of persons authorised by licences or exemptions to transmit, distribute or supply electricity and the efficient use of electricity conveyed by distribution systems
- To protect the public from dangers arising from the generation, transmission, distribution or supply of electricity
- To secure a diverse and viable long-term energy supply, and shall, in carrying out those functions, have regard to the effect on the environment of activities connected with the generation, transmission, distribution or supply of electricity.

9.2.3 Comparison

The OPUC has more clearly defined mandates in regards to functions, oversight, and duties, but is extremely vague when it comes to the establishment of regulatory objectives. OFGEM's were extremely vague during its first eleven years under the 1989 Electricity Act, but the objectives became much clearer after the conception of the 2000 Utilities Act. In either case, the expectations are not exactly clear as to what is expected from the regulators other than some very general objectives statements, but OFGEM's overarching objectives are more clearly defined when the regulators are compared.

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9.3 Accountability Structure

9.3.1 OPUC

The accountability structure as defined by legislation for OPUC is clearly defined and uncomplicated. As a result, OPUC has a high level of independence in its regulatory and decision making authority. The groups that make up OPUC's accountability structure are:

- Governmental:
 - o Oregon Governor's Office
 - o Oregon Legislative Assembly
 - o Oregon Judicial System
 - o Federal Energy Regulatory Commission
 - o United States Secretary of Transportation
 - o Occupational Health and Safety Administration
- Non-Governmental:
 - o Consumer Assistance Organizations

The governmental stakeholders who have the most influence over the OPUC are the Oregon Governor's Office and the Oregon Legislative Assembly. While the governor cannot overrule or amend any of OPUC's decisions, he/she holds the authority to appoint new commissioners as well as the chairperson. The governor may also remove a commissioner at any time for any reason they see fit. The Oregon Legislative Assembly can exert influence over the OPUC by amending the legislative mandates that define the powers, duties, and provisions of the OPUC. The Legislative Assembly can require the OPUC to provide guidance or reports in relation to the regulation of electrical markets, but the Assembly's influence does not extend to the direct ratification of any of the OPUC's past decisions. The only governmental body that can directly ratify an OPUC decision is the Oregon judicial system. Any party can challenge the legitimacy of OPUC rulings through the state court system, and the court will rule on whether the regulatory decision is in concert with the state legislation. For example, if a party feels that they have been negatively affected by a regulatory decision, they are within their legal bounds to file suit in the Marion County circuit court. If the court finds that OPUC has acted outside of its legislative mandates, it can amend or nullify the OPUC decision.

The governmental bodies that have influence over the OPUC, but less than the state bodies mentioned above, are all at the federal level. The Federal Energy Regulatory Commission (FERC) has direct influence over the regulatory powers of OPUC, but this authority is limited to the interstate movement and sales of wholesale power. In other words, all intrastate transactions, both wholesale and retail, are outside of FERC's jurisdiction. The United States Secretary of Transportation, on the other hand, can influence OPUC actions related to both inter and intrastate decisions, but this is limited to hazardous materials transportation including pipelines (Oregon Legislative Assembly 2004, p.28). Lastly, the Occupational Health and Safety Administration (OSHA) can directly affect the OPUC through the National Electrical Safety Code. This authority

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allows OSHA to make rulings on anything related to the health and safety of workers in the Oregon utility industry.

The non-governmental organizations that make up OPUC's accountability structure are customer assistance organizations. The Citizen's Utility Board of Oregon (CUB) is the most focused on electricity customers. They are also the only consumer assistance organization in this field that is funded by electricity ratepayers. Their mission is to look out for the interests of Oregon utility customers in terms of prices as well as issues related to the environment and poverty. They were founded by a state referendum in 1984 that was initiated by the Oregon State Public Interest Group (Stachon 2004). The three remaining consumer assistance organizations are:

- Don't Waste Oregon
- Utility Reform Project
- Low Income Consumers Union

All three of these organizations rely upon private donations and are staffed by less than five people who work on a voluntary basis. Due to these constraints, their impact on regulatory policy is much less than the Citizen's Utility Board.

9.3.2 OFGEM

While OFGEM's accountability structure is not extremely complex, it becomes more complicated due to the low level of independence in decision-making OFGEM possesses. Of the organizations listed, several can overrule or modify their decisions. The groups make up OFGEM's accountability structure are:

- Governmental:
 - o Secretary of State, Department of Trade and Industry
 - o Monopolies and Mergers Commission
 - o United Kingdom Parliament
 - o European Commission
- Non-Governmental:
 - o Energywatch

Probably the most influential governmental body in OFGEM's accountability structure is the Secretary of State of the ministerial Department of Trade and Industry. Throughout the 1989 Electricity Act and 2000 Utilities Act, the most important regulatory powers are either left up to joint decisions between OFGEM and the Secretary or made by the Secretary with mandated consultation to OFGEM. As defined in legislation, the Secretary is influential in defining the objectives and priorities for OFGEM as well what type of functions the regulator should pursue. OFGEM is also required to provide the Secretary with any regulatory or market information they request. Lastly, one of the most influential powers the Secretary has is his/her ability to appoint all of the members on the Gas and Electrical Markets Authority. The only time the Secretary must consult the chairman of OFGEM is for the selection of the non-executive members. As previous

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instances have shown, the powers held by OFGEM and DTI have become blurred. For example, in 2001 when energy companies were not satisfied an OFGEM standard license proposal, the companies circumvented OFGEM's role by consulting the DTI for the license approval (Power UK 18 April 2001). And, the legislation does not help in understanding the distinct division of functions between OFGEM and DTI. In the 'Consumer Protection' of the 1989 Electricity Act, each function begins with the precursor, 'the Director [of OFGEM] (so as to be exercisable concurrently with the Director [of DTI])' (United Kingdom Parliament 1989, p.34).

The other ministerial department that has influence over the discretion of OFGEM is the Monopoly and Mergers Commission (MMC). Whenever there are questions in the market related to competitiveness and market manipulation, OFGEM request support or a ruling from the MMC (Lillis 1997). Also, the DTI may supersede OFGEM authority in any cases related to the buying and selling of electrical assets to foreign companies. For example, in 1995 when the American company Southern Electric tried to purchase Midlands Electricity, the minister of DTI intervened and sent the case to the MMC (Lillis 1997). As established by the 1989 Electricity Act, OFGEM can modify any supplier licenses to be subject to MMC investigation as long as it relates to the pursuance of licenses, possible operations that may go against the public interest, or whether or not the license could be remedied or modified to avoid the public harm (United Kingdom Parliament 1989, p. 9).

An emerging factor in the accountability structure of OFGEM is coming from the European Commission. In 2003, the EU produced an electricity directive that established the necessary elements for creating a single European market. EU regulatory policy has profound impacts on the electrical market in the UK such as the harmonization with other European countries markets and changes to the current UK tariff policies (OFGEM 2005). As the relatively new European electricity policy emerges, the UK now has the opportunity to help shape EU policy. In fact, executives at OFGEM have promoted the increased involvement from both the regulatory function and the private firms to increase their involvement on the EU scene (EU Energy 2005).

In regards to consumer watchdog organizations, Energywatch acts on behalf of the citizens of the UK. Energywatch was established in the 2000 Utilities Act and is accountable to the Secretary of the Department of Trade and Industry and the National Consumer Council. Energywatch acts as a watchdog of both OFGEM and the UK utility companies. When Energywatch files a complaint, OFGEM is obliged to investigate it within 90 days. A recent example shows that Energywatch filed a complaint with OFGEM regarding 'incompetence over billing' that was brought to Energywatch's attention by 40,000 customer complaints (International Oil Daily 7 April 2005).

9.3.3 Comparison

There are several differences between the accountability structures of OPUC and OFGEM. Given the number of organizations in OPUC's accountability structure, it appears that OPUC's accountability hierarchy would be more complex. On the contrary,

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it seems that the lines of accountability for OPUC are more uncomplicated. In the UK, the ministerial departments implement government policy as directed by the UK parliament. Therefore, the secretaries of the departments are bound to stay involved in the regulatory and decision-making process. From an outside perspective, this chain of command makes it difficult to see who is exactly accountable to whom. In comparison, the OPUC is accountable to the Governor of Oregon and is independent from any other state government agencies.

A second major difference in the respective accountability structures is the influence of the watchdog and consumer organizations. In the UK, OFGEM is required by legislation to investigate any formal complaints that are issued by Energywatch. In Oregon, the consumer assistance organizations take on a more lobbying-style function by presenting expert testimony at public meetings and rate cases.

9.4 Due Process

9.4.1 OPUC

OPUC has an extremely high level of due process as demonstrated by its mandated public openness. There are three ways in which the OPUC must make its decisions and regulatory actions open for public review. These are:

- Public Records Archives
- Public Reports
- Public Meetings

In maintaining its record archives, OPUC must follow the policy established for state-wide government recordkeeping. The Secretary of State assumes the position of the State Archivist who thus governs all rules related to public records. For example, OPUC is required to post public meeting minutes and agendas for the last five years on its website. As for the release of new public reports, the Oregon Legislative Assembly has set the policy to encourage public agencies like OPUC to notify the public of its actions and decisions (Oregon Legislative Assembly 2004, p. 200). This mandated release of information is essential to the openness of OPUC and allows the public to scrutinize and challenge any action taken by the regulator.

The most significant method for the public to gain access to the OPUC is through public meetings. Within its legislative mandates, the OPUC is required to make all of its meetings open to the public. All the meetings must be announced within a reasonable amount of time given so that interested persons may attend (Oregon Legislative Assembly 2004, p. 232). In accordance with the public records mandates, any and all meeting documentation must be published and remain available for at least five years. Public meetings are also the forum in which regulatory investigations take place. In these investigatory hearings, the party in question is given time to make an oral argument before the commission renders any final orders and all hearings are open to the public (Oregon Legislative Assembly 2004, p.14-15). Besides attending any hearing, anyone

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from the public can petition to take part in the hearing. It is then up to the commission to determine whether or not the appearance will add value to the proceeding and will then either approve or deny the citizens request (Oregon Legislative Assembly 2004, p. 15). Following the courts decision, any affected party may 'prosecute a suit against the commission to modify, vacate or set aside such finding of fact, conclusions of law and order' (Oregon Legislative Assembly 2004, p.17). In other words, any party that is not satisfied with the outcome of a public hearing can attempt to appeal the ruling that was made.

9.4.2 OFGEM

The level of due process is high at OFGEM. This is exemplified by OFGEM's compliance with the 2000 Freedom of Information Act (FOIA) and its own commitment to public involvement.

In accordance with FOIA, OFGEM must follow the legislative guidelines that mandate every government organization to develop a publication plan and put out as much information as possible. In its publication plan, OFGEM provides the following (OFGEM 2002, p. 2):

- The classes of information [OFGEM] intends to publish;
- How this information is published or intended to be published; and
- Where charges are made for information

Not only does OFGEM provide information about their own procedures and regulations, but they also require all licensed utilities to provide a list of detailed information as well. This information ranges from license modifications to financial penalties placed on the company.

In maintaining its commitment to remaining open to public involvement, OFGEM invites all citizens and interest groups to comment upon the proposed corporate strategy plan before it is finalized. Upon the receipt of any comments, OFGEM will attempt to incorporate the suggested modifications or explain why any suggested changes were not included (OFGEM 2005, p.1). In OFGEM's strategic plan, they state that in the course of performing their functions and meeting their objectives, they will 'have regard to the principles under which regulatory activities should be transparent, accountable, and proportionate, consistent, and targeted only at cases in which action is needed' and goes on to say 'companies will gain a new opportunity to appeal to a greater range of decisions. This reinforces the need for OFGEM to ensure that its decisions are robust and that it follows due process in an open and transparent matter' (OFGEM 2005, p.10)

9.4.3 Comparison

Both regulators exemplify high amounts of due process within their institutional form. While the modes utilized by OPUC and OFGEM to allow public involvement are somewhat different, the end result is two highly transparent agencies. The only instance

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that the agencies seemed to be closed was in the search for detailed data related to its objectives and results, but upon request, almost all of the requested information was provided. Another similarity between the two regulators is their responsibilities related to due process have been defined in legislative mandates. These are provided in both the legislation that is specific to the regulator as well as legislation that is in place for all government agencies.

9.5 Expertise

9.5.1 OPUC

OPUC maintains a high level of in-house expertise. This was verified by the 2001 House Bill 3615 Interim Task Force review that stated, ‘we found that most interested parties agreed that the staff is competent and has provided professional and rigorous analysis’ (p.3). Although it has legislative guidance in place to use part-time contracts and establish non-paid advisory committees to fulfill its objectives (Oregon Legislative Assembly 2004, p.6), it was discovered through contact with OPUC that they rarely use any contract support. They do seek legal support from the Oregon Office of the Attorney General in cases where OPUC attorneys lack the necessary expertise. This relationship has been written into the OPUC’s legislative mandates and states that ‘the Attorney General shall furnish to the commission such attorneys as the commission finds necessary’ (Oregon Legislative Assembly 2004, p.7).

At this moment, the commission has identified that the following occupations make up its expert level positions. It is the responsibility of the chairperson to decide what positions are necessary in order to meet the regulatory objectives. According to OPUC, they are able to maintain the following workforce:

- Attorneys: 5
- Economists: 26
- Engineers: 12
- Accountants: 14

9.5.2 OFGEM

While three attempts were made to gather information related to the expertise of OFGEM, the regulator was unfortunately unable to provide any information. So, this aspect of OFGEM’s institutional form will have to be omitted from this analysis.

9.5.3 Comparison

As previously mentioned, no data was available for OFGEM, so it is rather difficult to make any comparison here. With that said, it is still important to point out that OPUC does represent a regulator with a high level of expertise. Based on the academic research conducted during this project, this came as a surprise since most of the literature on

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regulators speaks to the difficulties that public organizations have in recruiting and maintaining a highly skilled workforce (Phillips 1993, Baldwin and Cave 1996).

10.0 Research Findings: Objectives, Performance Indicators, and Outcomes

In order empirically to analyze effectiveness and establish the *after* measurement section, the mission and stated objectives must first be identified. In some cases, performance indicators have already been established for the objectives. In other cases, performance indicators have not been clearly defined. In order to measure regulatory effectiveness, new performance indicators were determined. This assignment of performance indicators was based on the trends found throughout the research process and are representative of the electricity industries common standards. Thus, the new performance indicators established here are based on the ideas developed from this analysis. After the objectives and performance indicators have been identified, the outcomes for each regulator can be assessed. It should also be stated that the focus of this section is on regulatory effectiveness. While several other factors, for example the pressure of a watchdog organization or the improved business practices of a particular utility, will be secondary to the focus on the regulators at hand.

10.1 Objectives and Performance Indicators

10.1.1 OPUC

For the OPUC, the mission is to, ‘ensure that consumers get safe and reliable utility service at reasonable and stable rates. The Commission relies on regulation and, where possible, competitive market forces to achieve this goal. To that end, the agency also promotes the development of competitive markets affecting utility service’ (OPUC 2005). From the mission, the following objectives are defined (OPUC 2005):

- ‘Adopt regulatory policies that encourage utilities and customers to meet energy needs at the lowest possible cost and risk. *Electric and gas utilities are acquiring new resources to meet growing demands. Many different supply-side and demand-side resources, with different costs and risks, can be used to meet these needs. The Commission's regulation should ensure that utilities acquire the best mix of resources for their customers and use those resources efficiently.*’
- ‘Improve retail and wholesale electricity markets. *The customer load served through direct access under Oregon's electricity restructuring law (SB 1149) is increasing, but there may still be barriers to the development of a competitive retail market. The Commission will work to ensure that no supplier has an unfair advantage and that no undue cost shifts to other customers occur. All customers, whether they are served through direct access or by their local utility, can benefit from improvements in the operation of the transmission system.*’

For these objectives, the OPUC has clearly identified performance indicators, although at this point in time, results are only available through 2002 while targets are projected out

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through 2005. The performance indicators that are directly related to regulation of the Oregon electrical market are (OPUC 2005):

- 'Average price of electricity for residential users from Oregon Investor-Owned Utilities as a percent of the national average price'
- 'Personal injuries related to electric operations (per 100,000 utility customers)'
- 'Total number of electricity service suppliers certified and aggregators registered by the OPUC'

For OPUC, their performance indicators do allow for the measurement of some of their objectives. For the remaining objectives, these performance indicators fall short. In relation to the promotion of competitive retail markets, OPUC has established a measurement by tracking the total service suppliers certified and aggregators registered. What this attempts to show is that if the market is truly made competitive, the number of suppliers and aggregators should increase over time. Where this performance indicator is lacking is in the fact that there is not a relevant baseline to measure success. In other words, how will the OPUC and the electrical customers of Oregon know if the given number of suppliers is a high or low amount? So, for the purposes of this paper, we will assume that any increase in suppliers and aggregators over time is a sign of regulatory effectiveness in promoting competition. Still, the measure of OPUC's effectiveness on competition needs an additional indicator to really measure the impacts of the regulator. In order to do this, a performance indicator that is both relevant to OPUC and OFGEM is the amount of customer switching that takes place. In short, the measurement of customer switching is the total number of eligible customers who switch their energy provider and can be captured as a percentage or in the aggregate. In theory, this number should increase as more competitive market options become available to customers. Throughout the investigation of the two regulators, the promotion of customer switching has appeared frequently in both the regulators literature as well as in academic and practical literature. For instance, in its regulation of the telecommunications market, OPUC uses customer switching as one of their main performance indicators.

For the objective and mission related to reliability, OPUC does not publish a clearly stated performance indicator or relevant baseline. After inquiring with their office, it was learned that they use System Average Interruption Frequency Index (SAIFI), which is a measure of the average number of times a customer loses power, and System Average Interruption Duration Index (SAIDI), which is a measure of the average amount of time power is lost. This type of indicator is a commonly used measure in throughout the United States. The definitions of SAIDI and SAIFI and the relevant data from 1999-2003 was received from the OPUC and used to assess the effectiveness in maintaining reliability. Given that this performance indicator is an industry standard and measures both duration and frequency, it is assumed that using SAIDI and SAIFI is sufficient and no additional performance indicators are necessary for reliability.

Next, for the mission and objectives related to safety and risk, OPUC has a performance indicator in place related to personal injuries related to electrical operations. The intent for this indicator is to show that the regulator has been successful in promoting safe practices amongst customers and utility companies and thus the level of accidents should

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remain at a low level. But, like the supplier/aggregator performance indicator OPUC uses to measure competition, this lacks a threshold for what is an acceptable rate of safety. In other words, there is no baseline as to what is an adequate rate of injury or death. Given the lack of an industry baseline, this performance indicator will be assessed based on the rate of change over time. While another performance indicator would be desirable for the measurement of effectiveness in safety, no other potential performance indicators were made apparent.

The last primary objective that is clearly identified by OPUC is related to energy prices. In order to measure their effectiveness, they use average price of electricity for residential users as compared to the national average. Given that regional and state comparisons in the United States are a politically relevant issue, it makes sense that the OPUC would want to use this comparative measure. But from an analytical point of view, this data point does not lend itself to measuring the effectiveness of the regulator since the baseline is the change in the United States prices and this has no connection to how well OPUC regulates the Oregon electrical market. Since this is the performance indicator that OPUC uses, it will be addressed but given the importance OPUC objectives place on customer prices, it is necessary to develop two more performance indicators. In order to do so, this analysis will investigate changes in price in both nominal and real terms. First, the nominal change in residential, commercial, and industrial prices over time will be analyzed. Next, the change in real prices will be addressed using the Consumer Price Index (CPI) as a point of reference. By comparing the change in CPI to the nominal change in electricity prices in the three customer categories, we can gain a better grasp of the change in electricity prices, holding inflation constant. With the addition of two additional performance indicators, we now have three performance indicators to address the objective of price.

10.1.2 OFGEM

For OFGEM, the objectives and any performance indicators have been harder to find. In fact, in their 2003-04 annual report, there is not one single mention of the words objectives, mission, performance indicators, or goals. Instead, the annual report focuses on the general achievements the regulator has accomplished during the prior year. They do provide a role statement on their homepage, which is assumed to be their mission. It states 'its role is to protect and advance the interests of consumers by promoting competition where possible, and through regulation only where necessary. Applying this principle has resulted in great benefits for all gas and electricity customers. To build on these benefits, OFGEM's work focuses on the following areas (OFGEM 2005b):

- Making gas and electricity markets work effectively
- Regulating monopoly businesses intelligently
- Securing Britain's gas and electricity supplies
- Meeting its increased social and environmental responsibilities

Although there were no publicly listed objectives for OFGEM this year, by looking back at the annual report for 2003-04, we can at least start to identify what objectives might be

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based on the achievements they listed. What this does not capture is any objectives that were not achieved. So, this list is merely a start:

- Conduct and Complete Customer Surveys (results not posted)
- Environmental Measures such as issuing renewable licenses
- Investigations related to maintaining a fair and open market
- Establishment of price controls
- Achievements in Customer Switching

There were also a large number of other listed achievements listed in the annual report. Unfortunately, only the list above spoke directly towards the effects of OFGEM's actions on the electrical market. Instead, most list achievements had to do with reporting and other administrative functions. So, to assess the mission and objectives of OFGEM, several performance indicators will have to be developed. Since performance indicators that are applied to OFGEM exist but are most likely not have results readily published, it is assumed that there may be some problems associated with data collection.

Returning to objective identification, it is interesting in the Utilities Act of 2000 that it appears the overarching regulatory objectives defined in legislation were more readily available than in OFGEM's annual report and were more specific to what was expected of the regulator. Once again, they are as follows:

(United Kingdom Parliament, p. 9-10):

- Protect the interests of consumers in relation to electricity conveyed by distribution systems
- Promoting effective competition between persons engaged in, or in commercial activities connected with, the generation, transmission, distribution or supply of electricity.
- The need to secure that all reasonable demands for electricity are met; and
- The need to secure that license holders are able to finance the activities which are the subject of obligations imposed by or under this Part or the Utilities Act 2000
- To promote efficiency and economy on the part of persons authorised by licences or exemptions to transmit, distribute or supply electricity and the efficient use of electricity conveyed by distribution systems
- To protect the public from dangers arising from the generation, transmission, distribution or supply of electricity
- To secure a diverse and viable long-term energy supply, and shall, in carrying out those functions, have regard to the effect on the environment of activities connected with the generation, transmission, distribution or supply of electricity.

To address OFGEM's objectives related to competition, the following performance indicators will be used. First, given the emphasis that OFGEM places on the amount of customer switching, the percentage of eligible customers who have participated in 'switching' will be analyzed. As mentioned above, it is assumed that a market that shows high levels of switching is highly competitive. Unfortunately, there are no industry benchmarks for the level of customer switching, so the change in total switching

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will be analyzed over time. Second, a performance indicator that looks at the total number of market participants over time will be used. This measure is being borrowed from the OPUC and applied to OFGEM, which gives an even comparison when contrasting the two regulators. But, since data is available for all four types of market participants in the UK, we will address all four. Since the privatization of the electrical markets in 1989, one of the most important issues in the UK electrical market has been the establishment of options for customers and competition through increased market entry by new suppliers. This performance indicator will identify whether or not OFGEM has been effective in achieving this objective.

In order to measure the objective of reliability, OFGEM uses two performance indicators. These indicators were not readily published, so they had to be requested from OFGEM. The first indicator used is Customer Interruptions, which is the average number of times per 100 customers that power is interrupted annually. The second indicator is Customer Minutes Lost, which is the average amount of time that power is lost per 100 customers per year. While these types of indicators are typical in the electrical industry and provide two solid measures of reliability, there were no industry-approved baselines for what was an acceptable level of outage duration and frequency. Instead, these performance indicators will be assessed over time.

For safety, OFGEM has a clearly defined safety objective in its legislative mandates but has no performance indicators in place. Since this is the case, the OPUC performance indicator that measured the number of injuries and deaths related to electrical operations was applied to OFGEM. Unfortunately, no data of this sort has been tracked by OFGEM, so this performance indicator could not be constructed. Furthermore, when OFGEM was contacted and asked whether they had any other forms of measuring safety, they did not have any relevant data. So, this objective will have to be left out of the analysis of OFGEM.

The next relevant objective for OFGEM is social accountability. This objective is based upon developments in customer satisfaction and environmental protection. It is measured in the following ways. Each year, OFGEM conducts customer surveys to assess whether or not the needs of the customer are being met. Prior to this analysis, it appeared that the survey results would be instrumental in determining OFGEM's effectiveness in social accountability. Unfortunately, the survey questions were very inconsistent from year to year, so it is nearly impossible to develop any trends. Since the customer survey indicator was lacking, a performance indicator that looks at the total number of complaints received by the consumer watchdog was put into place. It is assumed that if OFGEM is effectively regulating the market, the number of complaints will decrease over time. The data for customer complaints was made available by Energywatch, the electrical market watchdog, and is broken up into three categories:

- Electricity Customer Account and Billing Complaints- Per Thousand Customers
- Electricity Transfer Complaints- Per Thousand Transfers
- Electricity Direct Selling Complaints- Per Thousand Transfers

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Of the three complaint categories, the two dealing with transfers and selling are directly related to a competitive market environment. While account and billing complaints do reflect customer satisfaction, they could present in a non-competitive market or one with little regulatory involvement. In other words, account and billing complaints most likely have little to do with regulatory effectiveness in comparison with the other data points. So, while accounts and billing complaints will be included, more emphasis will be placed on the transfer and selling measurements. Also, it is important to note that unlike the rest of the data contained in this project, all complaint data is handled on a quarterly instead of annual basis.

Another important objective related to OFGEM's social accountability is its environmental responsibility. Since April 2002, OFGEM has been given the responsibility to oversee the government's Renewables Obligation program. To measure this, OFGEM tracks the total amount of energy that is produced by renewable forms of generation. The target for this performance indicator is has been set at 3% of all generation come from renewable generation by 2002-2003 and at least 5.5% by 2004-2005 (OFGEM 2005c).

Lastly, one of the most relevant objectives of OFGEM has to do with the establishment of prices. This is also the most political issue for OFGEM, as all customers will see the direct results of price fluctuations. Since there were no performance indicators established by OFGEM for the objective of low electricity prices, the performance indicators that were established for OPUC will be used. Once again, these are the real and nominal change in prices in retail and industrial prices over time. In order to hold inflation constant, the UK's Retail Price Index (RPI) will be used. Since commercial prices are not tracked in the UK, only industrial and retail prices will be used to measure these performance indicators.

10.1.3 Comparison

There are several important findings when the two regulators are compared. Before describing these, it is important to point that this analysis does its best to make the performance indicator comparisons between OFGEM and OPUC as clear-cut as possible. For instance, if one of the regulators had a relevant indicator in place that was applicable to both cases, it was applied to both to make the comparison more fruitful. This analysis does not attempt to change is the objectives of the regulators. It takes the approach that if the regulator does not have a particular objective element in place, then it is out of the scope of this project. A good example of this is in the objective of social accountability. In it, OPUC does not address any social aspects unless it relates to safety, price, and reliability. So, putting social accountability performance indicators would add no value. Another introductory point that can be made about the objectives and performance indicators is that their availability is limited. Relatively speaking, OPUC tended to publish more of its objectives and indicators, but in either case, it often took a good deal of investigation to find them. It seems that there is not a great deal of importance placed on making these objectives open to the public.

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In terms of the objectives themselves, the following observations could be made. While the language for the objectives was different, the actual content and goals of the objectives were relatively similar. The only objective category where this was not the case was in social accountability. OPUC addressed this through its other objectives while OFGEM had well defined objectives regarding customer satisfaction and the environment. But, the other categories of competition, price, reliability, and safety were closely the same. This point is important because not only does it make the comparative analysis of these agencies less complicated, but it also reinforces the idea that what these agencies are trying to accomplish is consistent across international boundaries. In other words, it seems that even with all the differences in context, the regulators are attempting to be effective for the same reasons.

Another observation is that in both cases, the objectives far outnumber the performance indicators. On one hand, it has been argued that placing too much emphasis on a specific set of performance indicators can divert managerial focus away from important objectives that are not easily quantified and measured. In reality, an overt emphasis on a narrow set of objectives can lead to such phenomena as tunnel vision whereby management may overlook activities that are hard to quantify but important to the achievement of objectives (Smith 1995). Also, there are other aspects of performance indicators that can help effectiveness in the short term but negatively impact it in the long run. For example, performance indicators can impede innovation since regulators are averse to innovating outside of what is measured or these measurements can slowly deteriorate overall professional attitudes as regulators focus solely on issues that are measured (De Bruijn 2002). Conversely, in the two cases here, the identified objectives are diverse in that they cover several aspects of the regulatory function and hopefully avoid too narrow of a focus. Returning to the question of the number of performance indicators, it appears that the regulators, or the bodies that they are accountable to, are not as concerned with the effectiveness of the regulators as one might think. Since effectiveness has been defined as the measurement of outcomes against objectives, without proper performance indicators, we are left with nothing to assess what the outcomes mean. Second, if we assume that the regulators and the stakeholders in their accountability structure are concerned with effectiveness and yet there are not enough relevant performance indicators, we might assume that they are probably taking only a partial view of effectiveness.

10.2 Outcomes

In order to address outcomes, the following chart has been compiled. In it, each of the relevant objectives for OFGEM and OPUC has been stated within the five mission categories of competition, reliability, safety, social accountability, and prices. In the next column, the performance indicators for each of objective have been listed. Each indicator has been tagged in order to show if it is relevant for OPUC, OFGEM, or both. Finally, in the last column the outcomes for each performance indicator are listed. To represent each outcome, a brief summary of what has been accomplished is listed along with a determination as to whether the regulator has been effective or not. For a complete listing of all the outcome results, please see appendix A.

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Chart 10.2: Objectives, Performance Indicators, Outcomes

Relevant Mission/ Objective:	Performance Indicator (PI): <i>*: Relevant OPUC PI</i> <i>**.: Relevant OFGEM PI</i> <i>***: Relevant to both OPUC and OFGEM</i>	Outcomes: <i>Complete Data Tables in Appendix</i>
<p>Competition: ‘Its role is to protect and advance the interests of consumers by promoting competition where possible’ (OFGEM 2005b)</p> <p>‘The agency also promotes the development of competitive markets affecting utility service’ (OPUC 2005)</p>	<p>C1) Level of Household Net Switching (% of Total Households)***</p> <p>C2) Change in suppliers licensed and/or certified as a percentage of total number already certified (For OFGEM, all market participants have been included, which consists of distributors, generators, suppliers, and transmitters)***</p>	<p>OFGEM: C1) EFFECTIVE. Since introducing switching in 1999, 43% of all customers have taken advantage of switching.</p> <p>C2) EFFECTIVE. From 1999 to 2004, the total number of distributors, generators and suppliers has increased from 108 to 179, a 66% increase.</p> <p>OPUC: C1) Data has not been kept on customer switching, thus making this performance indicator not applicable</p> <p>C2) INEFFECTIVE. While data has only been kept for the last three years, the number of aggregators and suppliers has essentially stayed the same with a small increase from 11 to 12.</p>
<p>Reliability: ‘The need to secure that all reasonable demands for electricity are met’ (United Kingdom Parliament 2000)</p> <p>‘Ensure that consumers get safe and reliable utility service’ (OPUC 2005)</p>	<p>R1) Decrease in Customer Interruptions and Customer Minutes Lost** (for OFGEM)</p> <p>R2) Decrease in SAIDI and SAIFI* (for OPUC)</p>	<p>OFGEM: R1) EFFECTIVE. Since 1997, OFGEM has realized a 13.1% and 18.5% decrease in customer interruptions and customer minutes lost, respectively.</p> <p>OPUC: R2) SOMEWHAT EFFECTIVE. Since 1999, OPUC has realized a 5.9% and 14.3% decrease in SAIDI (Duration) and SAIFI (Frequency), respectively. On the other hand, both levels are up by more than 15% from 2001.</p>
<p>Safety: ‘Protect the public from dangers arising from the generation,</p>	<p>Sy1) Total injury and death related to electric operations*</p>	<p>OFGEM: Sy1) Not applicable, OFGEM defines safety as one of its objectives, but tracks no data on injuries, death, or any other</p>

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<p>transmission, distribution or supply of electricity' ((United Kingdom Parliament 2000)</p> <p>'Ensure that consumers get safe and reliable utility service' (OPUC 2005)</p>		<p>related safety issues.</p> <p>OPUC: Sy1) SOMEWHAT EFFECTIVE. OPUC is somewhat effective in safety in that there have been no major increases over the last 5 years of measurement, but the resulting outcome is still higher than the established target.</p>
<p>Social Accountability: 'Meeting its increased social and environmental responsibilities' (OFGEM 2005b)</p>	<p>S1) Customer Survey Results**</p> <p>S2) Total number of customer complaints registered with Regulator and relevant watchdog**</p> <p>S3) Total Percentage of Energy Produced by Renewable Generation Sources**</p>	<p>OFGEM: S1) Not used. Annual surveys were not consistent from year to year, thus no annual comparisons could be made.</p> <p>S2) EFFECTIVE. The number of complaints has been reduced in relation to transfers and direct selling by 42% and 80% from the beginning of 2003 to 2005.</p> <p>S3) SOMEWHAT EFFECTIVE. OFGEM realized a 47% increase from 2002-2003 to 2004-2005 in the total amount of energy produced by renewable generation sources. As a result, this constituted 4.3% of the total energy produced, but this missed their 2004-2005 target of 5.5%.</p>

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<p>Prices: ‘Making gas and electricity markets work effectively’ (OFGEM 2005b)</p> <p>‘Adopt regulatory policies that encourage utilities and customers to meet energy needs at the lowest possible cost’ (OPUC 2005)</p>	<p>P1) Change in Prices for three customer groups***: a) Residential b) Commercial c) Industrial</p> <p>P2) Change in Prices relevant to pricing index (CPI for the OPUC and RPI for OFGEM)***: a) Residential b) Commercial c) Industrial</p> <p>P3) Average price of electricity for residential users from Oregon IOU's as a percent of the national avg. price.*</p>	<p>OFGEM: P1 & P2: EFFECTIVE. Since 1997, the UK has seen overall decreases in both residential and industrial electricity prices. Also, in only one year has an increase in residential electrical prices exceeded the increase in the RPI. Data for commercial electricity was not available.</p> <p>P3: Not Applicable.</p> <p>OPUC: P1 & P2: INEFFECTIVE. Since 1997, Oregon customers have seen an increase in both real and nominal prices for all three categories: residential, industrial and commercial.</p> <p>P3: SOMEWHAT INEFFECTIVE. The average price of electricity in Oregon relative to the national average has steadily increased since 1998 and has risen to 80.60%, which is 5.6% above its own target.</p>
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10.2.1 Outcomes: Competition

For the objective of competition, OPUC has been ineffective in promoting effective competition since 2001. This is based on the fact that in the performance indicator related to increasing the number of suppliers and aggregators, the Oregon electrical market has only seen one additional supplier added in the three year period since market restructuring. In 2002, there was an initial 45% increase in the number of suppliers and aggregators, but this dropped almost back to the original level by 2003. This trend would lead us to believe that the original barriers to market entry were removed but the market could not support additional suppliers and aggregators in the long run. The total number of suppliers and aggregators is captured below in Table 10.2a. The conclusion that OPUC was ineffective is also verified by OPUC’s own performance indicator target. For 2003 and 2004, the regulator announced a total supplier and aggregator target of 20 and 25, respectively (OPUC 2004). For 2003, they missed this target badly. Although data is not yet available for 2004, it could be assumed that the likelihood of this target being met is slim based on the trend thus far. It should also be pointed out that the performance indicator related to customer switching could not be included in this analysis since data has yet to be collected for this measure.

On the other hand, OFGEM has been highly effective as measured by the positive results in both performance indicators. For switching, the UK has realized a 43% increase in the

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total customer switching, which is an indication that customers have more competitive options available and the utilities are actively competing against each other. Thus, we can see the connection between this and the other competition performance indicator that counts the total number of licensed suppliers, generators, and distributors. The total number of market participants has increased by 66%, as shown in Table 10.2a below. This correlates well with the increase in customer switching, as the increase in available utilities has given customers more choices.

Table 10.2a: Total number of licensed electricity service suppliers (OPUC data includes aggregators)

	1999	2000	2001	2002	2003	2004
OPUC	--	--	11	16	12	--
OFGEM	108	127	150	157	166	179

10.2.2 Outcomes: Reliability

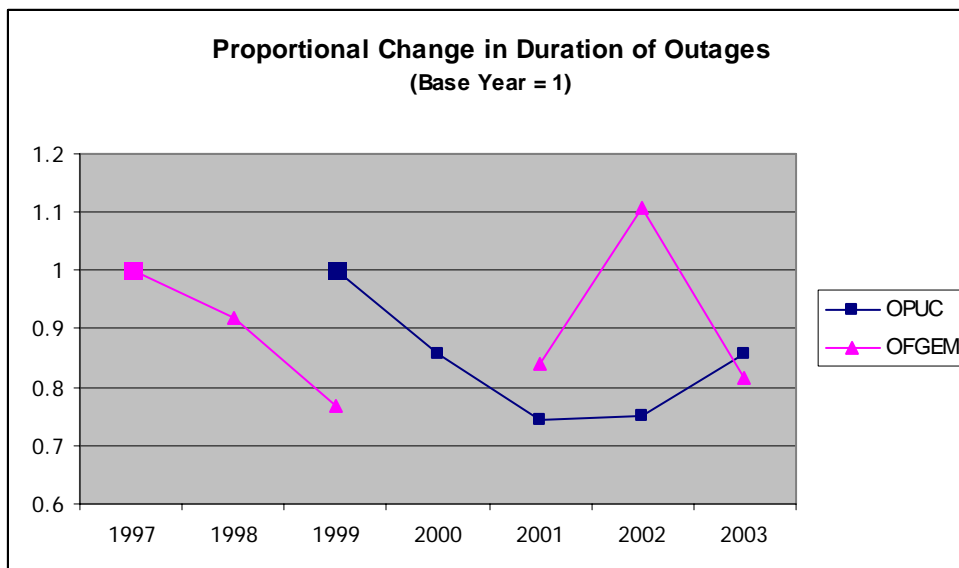
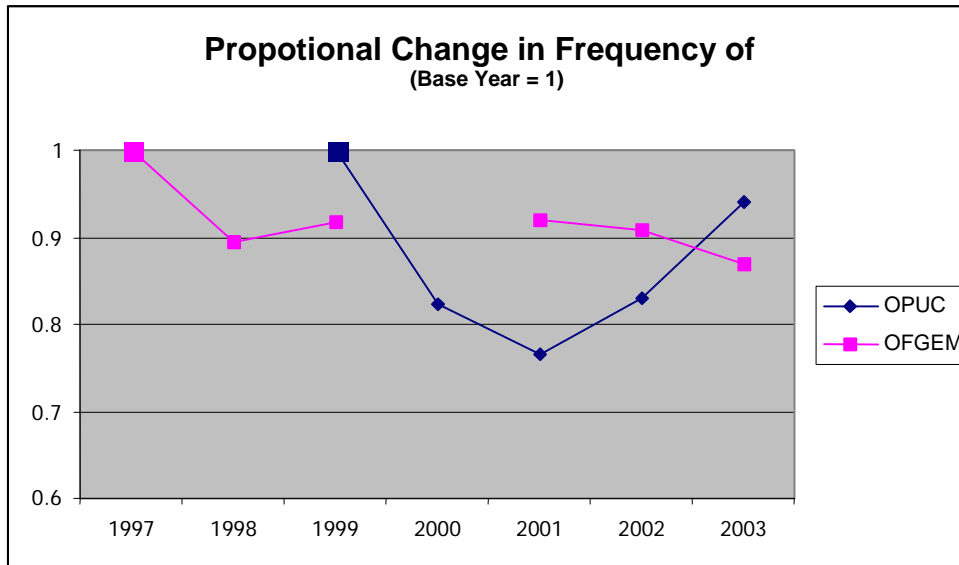
For reliability, OPUC has been somewhat effective in decreasing both the number (SAIFI) and duration (SAIDI) of outages in the Oregon electrical market. Although they have not established a performance indicator target, it is possible to derive a conclusion of outcomes based on the data available. Over a five-year period from 1999 to 2003, SAIDI has been decreased by 5.9% and SAIFI has been decreased by 14.3%. On the other hand, this success is contrasted by the fact that since market restructuring in 2001, both indicators increased by more than 15%. Thus, OPUC has been effective in the long term, but the results since restructuring have been negative.

Turning to OFGEM, we see that the British regulators has been effective in terms of reliability. In both of its performance indicators, it has seen a reduction in outages. From 1997 to 2003, the total times customers have been left without electricity dropped by 13.1% and the total amount of time customers have been without power decreased by 18.5%. Taking the data as a whole, the trend over this seven-year period was a steady decrease in both measures. The only discrepancy in this was a spike in total customer minutes lost in 2002, but it is assumed that this was the result of a chance event given the consistency in the other years.

In order to give a visual interpretation of the results related to reliability, the following graphs have been assembled. Since the regulators use different methods of calculating outage duration and frequency, the base year for each regulator has been assigned the value of 1.0. Thus, the subsequent years represent the change in outage frequency and duration:

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Charts 10.2a and 10.2b: Proportional Change in Frequency and Duration of Outages



10.2.3 Outcomes: Safety

The objective of safety and its subsequent outcomes represents an objective category where the OPUC has been somewhat effective through its promotion safe work practices and customer safety. On the positive side, this is evidenced by a 7.8% decrease in the total number of injuries and deaths from 1999 to 2002. On the other hand, for each of the years reported, OPUC has had injury and death rates higher than its established target. It could be said that OPUC has been effective in decreasing the number of accidents, but it has not been able to meet its own target levels.

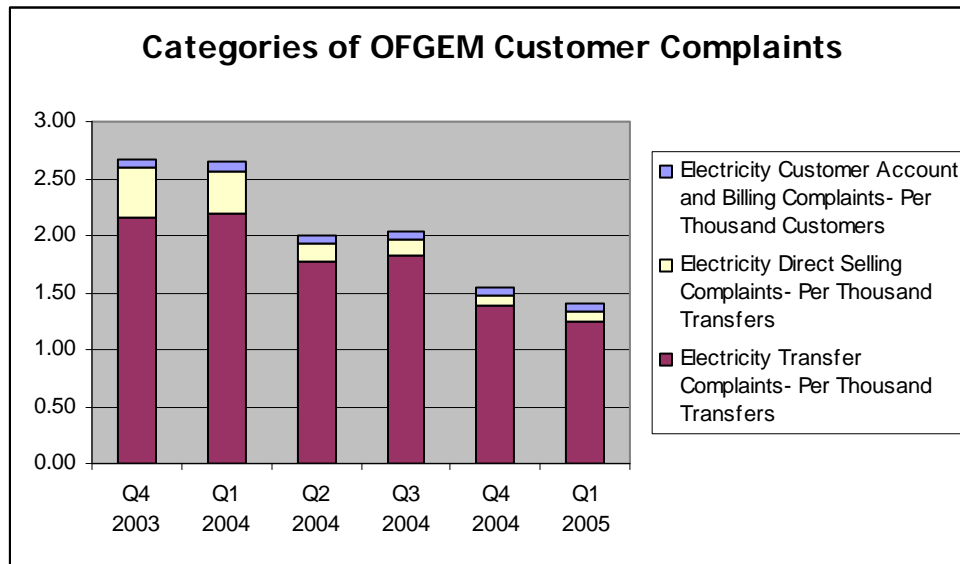
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As mentioned before, since OFGEM had no data available related to the objective and performance indicators of safety, this category has been excluded from this analysis.

10.2.4 Outcomes: Social Accountability

For social accountability, OFGEM has also been effective. The reductions in customer complaints from the first quarter of 2003 to the first quarter of 2005 are very high. The statistics for customer complaints are as follows:

Chart 10.2c: OFGEM Customer Complaints



The indicators related to transfers and selling are directly related to customer satisfaction with market competition. Both of these assess whether or not customers are content with how the utilities are handling their switch between competitors and the way companies are soliciting new business. Based on this data, OFGEM has been effective over the last two years in ensuring that customer concerns are being taken into account. With that said, it should also be pointed out that Energywatch and the utility companies that have changed their practices to increase customer satisfaction should assume some responsibility for the success achieved here as well.

In the other performance indicator related to social accountability, OFGEM was somewhat effective in achieving its targeted performance. Its goal was to have the UK's at least 3% and 5.5% of the UK's electricity needs met from renewable sources in 2002-2003 and 2004-2005, respectively. The following results were achieved in those years:

- 2003: 9,261,568 Mwh, 3.0% of the total energy produced
- 2005: 13,627,412 Mwh, 4.3% of the total energy produced

While OFGEM missed their target for 2004-2005, they did increase the total amount of renewable energy production by 47%. This increase could most likely be associated with

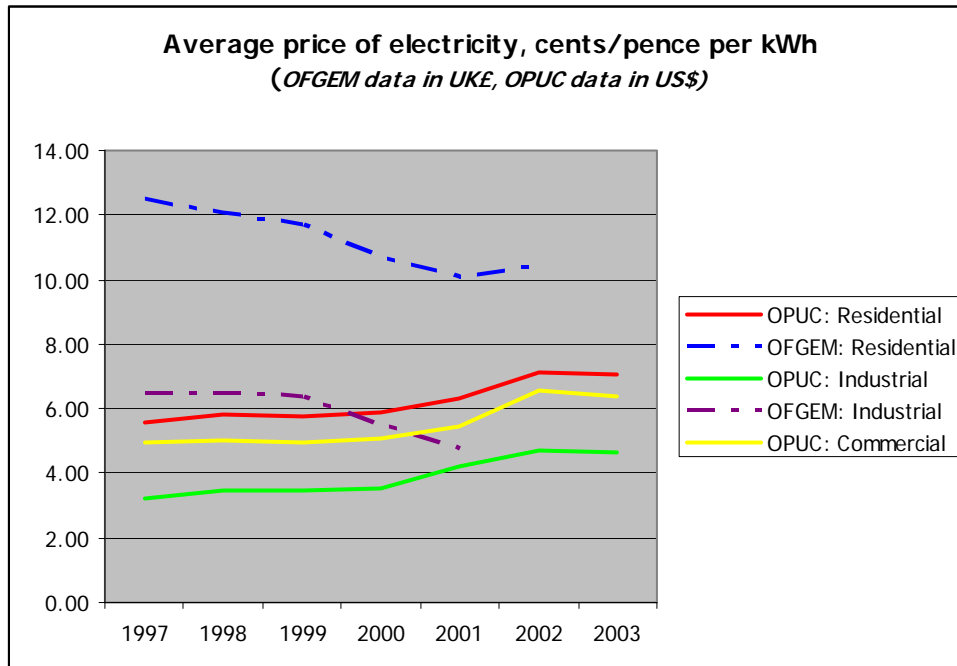
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OFGEM's license requirements with UK generators that obligate them to find renewable sources of energy or otherwise face financial sanctions.

10.2.5 Outcomes: Prices

The final objective category is electricity prices. Based on the resulting outcomes for the price performance indicators, it could be concluded that OPUC has been ineffective in achieving this objective. In the two indicators related to the real and nominal changes in price, all Oregon customer categories saw an increase in prices over a six year period. In nominal terms, the following increases were realized from 1997 to 2003² and are shown in Chart 10.2d below:

Chart 10.2d: Average electricity prices in Oregon and the United Kingdom



In real terms, electricity prices have outpaced the rate of inflation as measured by the consumer price index (CPI). From 1997 to 2003, each customer category has seen a growth rate in price that is greater than the CPI increase by the following amounts:

- Residential: 12%
- Commercial: 14%
- Industrial: 29%

The last performance indicator also shows that OPUC has been ineffective. In it, they measure the average price of electricity for residential users in Oregon as a percent of the national average. From 1998 to 2002, the average price paid by Oregonians has increased by 9.6% when compared to the rest of the United States. In 2002, this raised to 80.6%, which is higher than the static OPUC target of 75%. Thus, we can conclude that

² All prices represent the average amount for one kilowatt hour

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OPUC has been highly ineffective in regulating electricity prices in real, nominal, and relative terms.

In sum, it seems that OPUC has largely been unsuccessful in terms of effectiveness. For its established objectives, the regulator has been marginally successful in the objective categories of safety and reliability. But even those objectives have somewhat mixed outcomes. For competition, the market forces have not been hindered by the OPUC but little improvement has been made. As for price objectives and the three performance indicators, OPUC has not been effective as shown by the poor outcomes. In fact, prices have increased in all three performance indicators

Based on the performance indicators and subsequent outcomes, OFGEM has been effective in regulating prices. In both real and nominal terms, British customers saw a decrease in electricity prices from 1997 to 2002³. For nominal prices, the following decreases were experienced⁴ and are also shown in Chart 10.2d above:

- Residential: €12.50 to €10.50, or a 16% decrease
- Industrial: €6.50 to €4.80, or a 26% decrease

For real prices, the rate of inflation measured by the retail price index (RPI) has grown faster than electricity prices as. From the data available on electricity prices and RPI, both UK customer categories has seen a growth rate in price that is less than the RPI increase by the following amounts:

- Residential: 25%
- Industrial: 33%

Based on the results from the two performance indicators, OFGEM has been extremely effective in regulating prices. This is most evident in the change in price in real terms as evidenced by the fact that the prices of other goods in the UK have grown at a rate 25% and 33% faster than the prices for residential and industrial electricity, respectively.

All told, it appears that OFGEM has been very effective in meeting its objectives. In all of the objective categories for which data was available, OFGEM was either effective or somewhat effective. While the data that was collected comes from several different time spans, the outcomes reflecting effectiveness are consistent from 1997 to present day.

10.2.6 Outcomes: Comparison

In comparison, it is very clear that OFGEM has been more effective in achieving its objectives when compared to OPUC. This is true in each objective category and in the aggregate as well. Certain externalities could have possibly given OFGEM in advantage in becoming more effective, such as Energywatch's role in quelling customer complaints. Also, in comparing the two markets, it is important to point out that the population that is

³ For industrial customers, data was available up to 2001

⁴ All prices represent the average amount for one kilowatt hour

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served in Oregon is a fraction of the populace in the UK, which could perhaps skew our perception of the outcomes. For example, markets that are more established and have implemented competition in the long run may find that electricity prices drop because of this (Steiner 2000), not because of effective regulation. With that said, even when these issues are taken into account, the outcomes are still overwhelmingly in favor of OFGEM's effectiveness. On the other hand, what is not captured here is the state of the market prior to the major restructuring efforts. It could be said that the comparison of these two regulatory bodies may not be fair since one or the other may have had an advantage that preceded the findings of this analysis. Even if this is the case, if we look at each regulator on its own, we can still gain an understanding of how effective they have been in moving their respective markets in the direction that is set out by the identified objectives. Thus, the comparison is still a valid one, but we must keep in mind that the starting points may be different.

11.0 Discussion of Findings

In order to present the discussion of findings, the overall findings from the *before* section will be first presented. Then, the overall findings from the *after* section will be presented. Once this is done, a series of final deductions will be provided that address the central research question at hand. Throughout this discussion, we will revisit the theoretical framework.

For the institutional historical context and regulatory strategies, it seems the biggest historical difference is that OFGEM was given more time to establish a private, more competitive market. This circumstance may have given OFGEM the upper hand in the achievement of effectiveness when compared to OPUC. Based on their evaluation of UK utility privatization, Helm and Jenkinson (1998) point out that moves to full privatization or rapidly increased competition will take at least a decade to develop. These two cases validate this argument. Also, this finding lends itself to the question of how much the different market trajectories determine the success of the regulators. The UK has been actively pursuing privatization of electricity since 1989. The Oregon market was restructured to increase competition only five years ago. As shown in the findings related to outcomes, OFGEM has been more effective over the last several years. While it seems that neither regulator has a distinct advantage in relation to the strategies they employ, they both utilize several strategies and regulatory tools. According to both Baldwin and Cave (1996) and Gunningham and Grabosky (1998) having a broad toolkit is essential for effective regulation. Both regulators satisfy this theoretical argument but since the results for effectiveness are mixed, it is difficult to come to a conclusion on this aspect.

For each of the elements within institutional form, the results are somewhat mixed. For legislative mandates, OFGEM's are clearer when compared to OPUC, but in either case the mandates related to objectives are vague. Returning to the theoretical framework, this would lead us to believe that the regulators would have a hard time meeting their objectives because it may be unclear as to what is expected of them, thus making them appear ineffective (Baldwin and Cave 1996, Phillips 1993). On the other hand, Vass

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(2001) points out that the vagueness demonstrated in the OPUC and OFGEM mandates will allow them easily to adapt to changes in the market. While the findings from the two regulators do not lean heavily in either of these theoretical directions, based on their level of effectiveness, it appears that OFGEM has been able to turn vague mandates into positive outcomes. Aside from their influence on effectiveness, another important aspect of legislative mandates is how much influence they have over the other institutional aspects of regulators. It is nearly impossible to discuss the historical context, strategy, and institutional form of the regulators without some mention of legislation and political influences. While Baldwin and Cave do not state this directly, through the application of their theory it is apparent that the most important factor here is the legislative mandates.

For the remaining aspects of institutional form, OPUC was more in line with the theory of Baldwin and Cave. OPUC's accountability structure was more straightforward than OFGEM's. At the same time, OPUC's structure allows for more independence while OFGEM's calls for heavy scrutiny of regulatory decisions. Thus, OPUC's level of independence in terms of its decision making authority was much greater. Baldwin and Cave (1999) state that when the decisions of a regulator are under too much control like OFGEM's, they will lose public validity. Green and Newberry (1998) and Caplow (1985) state that accountability structures that are difficult to understand will also be deemed unaccountable. This is the case for OFGEM. What is crucial with this point is that while OFGEM has been deemed more effective, they are the regulator that has received more public scrutiny. What this would lead us to believe is that a proper accountability structure, as defined by the theory above, is more important in terms of assuring public interest groups of regulatory effectiveness rather than actual effectiveness itself. While the same conclusion might be drawn for due process, it is more difficult since both regulators share an equally high amount of transparency. According to Baldwin and Cave (1996), regulators will be more effective if public interest groups have access to the regulatory decision making process. Lastly, OPUC has a high level of expertise, but since data was not made available by OFGEM, no comparisons will be made here, but this should not take away from the fact that OPUC satisfies this institutional form criteria.

In terms of overall institutional form, OPUC is more balanced across the five identified factors. This is the key element to theory of Baldwin and Cave. They suggest that regulators will be effective by making trade offs between the five factors and while still maintaining a robust equilibrium. Based on this analysis, it appears that OPUC has been successful in doing this. While their legislative mandates are a bit unclear, the OPUC has a clearly defined accountability structure, is very transparent in its due processes, maintains a high level of expertise, and has a sound regulatory structure. OFGEM on the other hand, is not as balanced. While they do have transparent due processes, their accountability structure is unclear and their regulatory structure is rather suspect given the limited amount of independence they possess.

As shown in the section on findings, it was concluded that OFGEM has been much more effective. This holds true when each of the objective categories are analyzed separately and when the entire body of objectives are addressed. What is interesting about this is

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over the last five years, the amount of public scrutiny that OFGEM has received has far outpaced that of OPUC. In fact, when academic and news source databases were searched for information over the last three years, there were only two articles about OPUC and neither questioned the role or effectiveness of the regulator. For OFGEM, some academics such as Vasconelos (2001) have pointed out that the regulation of electricity has received much worse press than it merits.

Now that we have a picture of both the institutional form and the effectiveness of OFGEM and OPUC, we can return to the central research question, which asks whether there is a relationship between the institutional form taken by a regulatory body and its regulatory effectiveness? According to Baldwin and Cave, those with institutional forms that are relatively strong in each facet and balanced across the five components will be considered more effective. Before moving on, it is important to bear in mind once again why Baldwin and Cave have been chosen. Besides their academic credibility in this field, one reason is the multidisciplinary approach that they employ. But, the central reason is they attempt to make a direct connection between the form of regulatory institutions and the effectiveness they achieve. While this does not address the fact that the regulators have had drastic market circumstances and thus different starting points, it is still the only theory that looks directly at the connection between form and effectiveness.

Now that both sides of this question have been addressed and the rationale for using Baldwin and Cave has been readdressed, it can be concluded that it is not true in the case for OFGEM and OPUC. OPUC has a much more balanced institutional form, but OFGEM has been more effective in fulfilling its regulatory objectives. This conclusion contradicts Baldwin and Cave's theory as well as their original hypothesis of this paper. Based upon this conclusion, a discussion about what might be the reason behind regulatory effectiveness is appropriate.

First, it could be possible that this analysis may have left out an important element from Baldwin and Cave's theory. It was mentioned in the theoretical framework that since this paper has taken a public administration perspective, efficiency was excluded since it is considered a result of institutional form instead of an aspect of it. One reason for this exclusion of efficiency lies in the fact that efficiency and effectiveness both appear in the *after* measurement section of this type of analysis. Thus, it would be misleading to include efficiency in the *before*, or institutional form, section. Furthermore, the idea of efficiency leading to effectiveness is based on the idea that regulators who are efficient will gain more support if they implement the legislative mandate with the least number of inputs (Baldwin and Cave 1996). While it may be valid to say that regulators who act efficiently may receive more support, this still does not get at a regulators ability to achieve outcomes that realize their identified objectives. In many cases, it is possible for an agency to be effective without being efficient and vice versa (Pollitt 2003, p.9). Finally, if we assume that efficiency will lead to regulatory effectiveness, we must hold all else equal. Clearly, with the number of exogenous factors defined in this analysis, this cannot be the case. Finally, even if we assume efficiency as the sixth factor of

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institutional form, it is highly unlikely that the overall balance of institutional form would be in favor of OFGEM when compared to OPUC.

Another aspect of Baldwin and Cave's theory that was not included was the element of regulating risk. The element of risk is broad in that it can change regulatory perceptions and priorities placed on both form and effectiveness, and it could be argued that the potential risks of the respective market should be the top priority of a regulator (Baldwin and Cave 1999). Risk regulation has also been a concern for the OECD, who has pointed out the forms of regulatory bodies should be constructed with the limitation of risk in mind (Gonenc, Maher, and Nicoletti 2000). With these concepts we can begin to understand the difficulty with this is that the degrees of risk vary drastically and there are no clear cut answers for regulators or politicians. For example, a regulator who has oversight over a market with a large proportion of nuclear facilities may have a different set of priorities than a regulator who has a market predominately made up of hydro electric generation. In any case, regulators must grasp the risks are associated within their scope and use either technical, rational, or expert methods to assess it and act accordingly (Baldwin and Cave 1999). There are several ways regulators can handle risk. In the case of OPUC, the element of risk has had major impacts on the legislation and implementation of the 2001 market restructuring due to the regulatory problems going on in other places like California. In the end, how a regulator handles risk can have significant impacts on its due process and type of expertise it needs to employ. It can also have major impacts on the effectiveness of the regulator and how it achieves its objectives in the presence of risk management. For example, if a regulator is asked to place risk aversion ahead of the promotion of pricing and competition in its regulatory priorities, these other objectives may suffer as a result.

Another possible conclusion that differs from the theory of Baldwin and Cave is that the most important aspect of overall institutional form is legislative mandates and political control. As mentioned above, this analysis has shown signs that legislative mandates are the single most important element of institutional form. It has been clear that the legislation sets up everything the regulators do—from the tools they utilize to the level of interaction they have with interest groups. When these mandates are vague, it may be extremely difficult for regulators to be effective and even harder to measure whether or not have been so. In this analysis, it was found that the one aspect of institutional form that OFGEM fared better was legislative mandates. It would not be prudent to say that this was the only factor that is important to effectiveness without further testing, but it does lead us to believe that there may be some significance in this argument.

Setting the elements of Baldwin and Cave aside, the next question to ask is whether or not there are aspects that could have greater impact on effectiveness than institutional form. Returning to the argument provided by Helm and Jenkinson that states newly privatized or restructured markets take ten years to develop, it can be suggested that one of the most important factors of effective regulation is allowing a regulated market to mature. An example is provided by OECD countries (which includes the UK and USA) where it has been demonstrated that countries that have been moved towards competitive markets have been very slow in doing so (Steiner 2000). What is clear about the two

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cases provided here is that the UK market has had a twelve-year head start on Oregon in restructuring its market into one that is more competitive. In other words, it is possible to take a regulator with an institutional form that is the antithesis of Baldwin and Cave's theory and if they are inserted into a market that has fully matured, they could still be viewed as effective. Conversely, if we built a regulator that is an ideal model of Baldwin and Cave and inserted them into a newly restructured market, they may look ineffective during the time it takes for the market to mature. It should be noted that this assertion presents perhaps the biggest weakness of this analysis, which is a lack of information related to the different starting points of the regulators and their respective markets. In order to test this theory, it would be necessary to analyze the data for a longer time period and use several cases in which the market has had at least ten years to develop. Also, it would be important to further investigate the markets prior to any major restructuring that has occurred.

Another possible explanation for regulatory effectiveness could lie in the trajectory that the respective market was in prior to privatization or restructuring. Once again, this is a possible shortcoming of the theory of Baldwin and Cave that was applied here. In the UK, the move to privatization in the 1980s led to windfall profits being made in telecommunications, gas, and water (Economist 1 June 1991). These excess profits were being announced as the regulation of the newly privatized electricity market was underway. In this case, it may have been easier for OFGEM to apply rigorous regulatory rules and get the market headed in the direction it saw fit. While OFGEM's powers have been decreased over time, this remains important because this initial power may have been enough to change the trajectory of the market thus making regulatory effectiveness more probable. OPUC on the other hand, approached the 2001 restructuring as the regulator from the past and with not as much dissent around the former economic results when compared to OFGEM. In this case, it may have been more difficult for OPUC to change the path the market was on to increase their effectiveness. This concept would be difficult to test. Probably the best way would be to use several case studies that resemble the initial market trajectory of either the UK or Oregon and compare the results.

12.0 Conclusion

While the connections between institutional form and effectiveness were not as dramatic as was originally hoped, the findings made for these two different aspects were quite interesting. For institutional form, it was quite remarkable how similar the regulators of two drastically different jurisdictions actually were. For effectiveness, it would most likely come to a surprise to the citizens in the UK that OFGEM has been quite effective in regulating the electricity market. Also, through the establishment of performance indicators, it was striking at how little time by the regulator, politicians, and public interests is spent of measuring regulatory effectiveness. There was very little information available about performance indicators and their importance both inside the UK and Oregon as well as in other jurisdictions.

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Moreover, this analysis has brought other questions to the surface, such as the effects that market maturity has on the perceived effectiveness of the regulator or the original trajectory of the market. By bringing up these new questions, we can begin to dig deeper into what is important for regulatory success. At this point, there are still many questions left. Hopefully, this analysis has added to the understanding of the relationship between institutional form and effectiveness regardless of the strength of the connection or lack thereof. In either direction, this analysis has added to our understanding of the specific contexts of electricity market regulation in the United Kingdom and the state of Oregon.

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14.0 Glossary of Terms

Effectiveness: The measure of objective achievement. Dependent on the comparison of identified objectives against the resulting outcomes through the use of defined performance indicators.

Efficiency: The relationship between an agencies inputs and outputs.

Federal Energy Regulatory Commission (FERC): The federal electricity regulator in the United States of America. Regulates all power projects on navigable rivers and the transmission and sale of interstate whole electric energy. Established in 1977. Formerly known as the Federal Power Commission (FPC).

Gas and Electricity Markets Authority (GEMA): The oversight council for OFGEM. Provides major decision-making and policy guidance for OFGEM. Often referred to as the OFGEM governing body. Established in 2000.

Institutional Form: The combination of elements that constitute an agencies structure. In the context of this paper, this includes: Legislative mandates, accountability structure, due process, expertise, and regulatory structure.

Intergovernmental Regulatory Strategy: The regulatory approach that defines the overarching strategy for an entire nation state or other defined sovereignty in terms of regulation.

Kilowatts per Hour (kWh): A measure of electrical power consumption. Equivalent to 1,000 watts for one hour.

Megawatts per Hour (Mwh): A measure of electrical power consumption. Equivalent to 1,000,000 watts for one hour.

Office of Gas and Electrical Markets (OFGEM): The regulator of the gas and electric industry in Great Britain. Under the authority of the Gas and Electrical Markets

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Authority. Established in 2000 when the gas and electric regulatory bodies were combined.

Oregon Public Utilities Commission of Oregon (OPUC): Electricity regulator in Oregon, the 33rd state of the United States of America. Regulates all activities of utilities in Oregon. Established in 1915 as the Public Service Commission of Oregon when the duties of the Oregon Railroad Commission's duties extended to include electricity and other utilities.

Regulatory Tool(s): The devices that a regulatory agency utilizes to implement and enforce its policies and strategies.

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15.0 Appendices

Appendix A: OPUC Results

Performance Indicator	OPUC	1997	1998	1999	2000	2001	2002	2003	
C2	Total number of electricity service suppliers certified and aggregators registered by the OPUC ⁴	--	--	--	--	11	16	12	
R2	System Average Interruption Frequency Index (SAIFI) The number of times a system customer experiences a service interruption during the year--average ³	--	--	1,70	1,40	1,30	1,41	1,60	
R2	System Average Interruption Duration Index (SAIDI) The total amount of time a customer does not have power during the year--average ³	--	--	1,05	0,90	0,78	0,79	0,90	
Sy1	Personal injuries related to electric operations (per 100,000 utility customers) ¹		0,64	0,58	0,67	0,45	0,59		
P1	Average price of electricity (cents/kwh) Residential ²	5,56	5,82	5,75	5,88	6,29	7,12	7,06	
P1	Average price of electricity (cents/kwh) Commercial ²	4,97	5,00	4,94	5,06	5,45	6,59	6,38	
P1	Average price of electricity (cents/kwh) Industrial ²	3,23	3,50	3,48	3,56	4,21	4,72	4,63	Change from 1997-2003
P2	Change in Prices relevant to pricing index-- Residential**	--	(0,031)	0,034	0,011	(0,041)	(0,116)	0,031	(0,123)
P2	Change in Prices relevant to pricing index-- Commercial**	--	0,010	0,034	0,009	(0,049)	(0,193)	0,055	(0,137)
P2	Change in Prices relevant to pricing index-- Industrial**	--	(0,068)	0,028	0,011	(0,154)	(0,105)	0,041	(0,288)
P3	Average price of electricity for residential users from Oregon IOU's as a percent of the national avg. price	--	71,00%	73,80%	74,40%	75,70%	80,60%		
Annual CPI Index, US City Average, Not Seasonally Adjusted (1984=100) ⁵		160,5	163,0	166,6	172,2	177,1	179,9	184,0	

¹OPUC Website

²http://www.eia.doe.gov/cneaf/electricity/epa/average_price_state.xls

³<http://www.puc.state.or.us/safety/electric/04reliab.pdf>

⁴<http://www.puc.state.or.us/erestruc/indices/statrpt.htm>

⁵<http://www.bls.gov/cpi/home.htm>

** - Calculated by subtracting the annual percentage change in electricity price from the annual percentage change in RPI/CPI. A positive result means that electricity price increases are LESS THAN increases in RPI/CPI. A negative result means that electricity prices have been GREATER THAN increases in RPI/CPI

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Appendix B: OFGEM Results

Performance Indicator	OFGEM	1997	1998	1999	2000	2001	2002	2003	2004
C1	Level of Household Net Switching, Running Total (% of Total Households) ⁴	--	--	11%	19%	38%	40%	43%	
C2	Total number of electricity service suppliers licensed registered by OFGEM ⁶	--	--	108	127	150	157	166	179
R1	Customer Interruptions ¹	95,02	85,05	87,26	--	87,40	86,24	82,57	
R1	Customer Minutes Lost ¹	99,56	91,56	76,40	--	83,70	110,38	81,11	
P1	Average price of electricity (cents/kwh) Residential ²	12,50	12,10	11,70	10,70	10,10	10,50	--	
P1	Average price of electricity (cents/kwh) Industrial ²	6,50	6,50	6,40	5,50	4,80	--	--	
P2	Change in Prices relevant to pricing index-- Residential**	N/A	0,05	0,05	0,10	0,07	0,03-	--	
P2	Change in Prices relevant to pricing index-- Industrial**	N/A	0,02	0,03	0,16	0,14	--	--	

Annual RPI Index, National Average, Not Including Housing ³	1997	1998	1999	2000	2001	2002	2003	2004
	152,9	156,2	158,9	161,3	163,7	166,0	168,9	

		Q4 2003	Q1 2004	Q2 2004	Q3 2004	Q4 2004	Q1 2005
S2	Electricity Customer Account and Billing Complaints- Per Thousand Customers ⁵	0,076	0,087	0,074	0,072	0,064	0,07
S2	Electricity Transfer Complaints- Per Thousand Transfers ⁵	2,15	2,19	1,78	1,83	1,39	1,25
S2	Electricity Direct Selling Complaints- Per Thousand Transfers ⁵	0,44	0,38	0,15	0,13	0,09	0,09

¹ OFGEM Website

² <http://www.eia.doe.gov/emeu/international/electric.html#Prices>

³ <http://www.statistics.gov.uk/CCI/nugget.asp?ID=21&Pos=3&ColRank=1&Rank=160>

⁴ OFGEM Report: Domestic Gas and Electricity Supply: Recent Developments, June 2003

⁵ http://www.energywatch.org.uk/help_and_advice/complaints_received/index.asp

⁶ Provided by Keith Smith, librarian at OFGEM

** - Calculated by subtracting the annual percentage change in electricity price from the annual percentage change in RPI/CPI. A positive result means that electricity price increases are LESS THAN increases in RPI/CPI. A negative result means that electricity prices have been GREATER THAN increases in RPI/CPI