REPORT

Jersey Energy Sector Review

A report regarding options and issues relating to the Channel Islands Energy Market

Client: States of Jersey

Environment Division,
Planning and Environment Department,
States of Jersey

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Preface

This report is provided to the States of Jersey in order to inform the development of energy policy within the Bailiwick of Jersey.

This report was produced by design & implement limited ("d&i") as per the requirements of the Departments of Environment and Economic Development. The scope of the report is based upon the terms of reference as presented in the States of Jersey invitation to tender, although these have been enlarged upon where d&i have considered this to be of added value to the States of Jersey.

Included within this report are quoted extracts gathered from meetings or correspondence with the parties (as listed in Appendix B). It is important to note that whilst d&i has not sought explicit permission to include these quotes within this report, these parties were made aware of d&i's assignment for the States of Jersey.

Due to the time available to carry out this review, assessments are unquantifiable at this stage. The time schedule for the review was extremely tight, as acknowledged by the States of Jersey, and as a consequence some of the observations and conclusions are necessarily broad.

Please note that d&i is not a law firm. Hence d&i recommends that the States of Jersey obtains the counsel of its law officers to fully assess the legal implications of the matters presented within this report.

Given the timescales and resources allocated to this review, d&i has been unable to assess any of the options in any detail. Hence, it is not possible to present a definite preferred option to the States of Jersey, as this would need to be backed up by detailed cost / benefit analysis.

This report simply attempts to present options, discuss the potential pros and cons of each, and to eliminate those options which, in our opinion are not viable or are simply unachievable. This report is intended to focus and inform future discussions only.

Executive Summary

Objective

This report has been prepared by d&i in order to provide information on the present structure of the energy sector across the Channel Islands (which in this context means Jersey – Guernsey) with a focus on the electricity sector. The underlying intention of the report is to examine whether there is scope for efficiency savings through the further integration of the Channel Island's electricity sector and / or regulatory functions. It considers the scope for efficiency at an electricity production / transportation level as well as at the end customer level – including an assessment of whether retail competition could deliver customer benefits.

Report Content

The report outlines the context to the review, including the following:

- the current structure of the electricity markets within the Islands;
- the CIEG arrangements that underpin the second interconnector (France-Jersey-Guernsey);
- the legislative infrastructure relevant to both Islands;
- the role of government and regulator in the two Islands, and the diversity of regulatory arrangements across the two Islands; and
- the inter-relationships between inflation, electricity prices, dividends and other stakeholder benefits.

As part of the outline requirements of the review, the gas industry sectors in both Islands are considered, and d&i concludes that, due to the current market structures and joint ownership of the two Island gas providers, there appears to be little scope for an integrated market driving efficiencies. However, d&i notes that whilst there are limited opportunities for integration and within gas market competition, it would be possible to introduce industry specific regulation for gas in either (or both) jurisdictions. d&i considers that if regulation was introduced for gas, a similar model in both jurisdictions would be most effective in guarding against cross-subsidies between businesses and in regulatory effort. As both regulators would be dealing with very similar issues, there would be scope for a joint regulatory approach.

Finally, the report considers various options for introducing competitive models within wholesale electricity generation and retail electricity supply to end customers. It also considers the possibility of using regulation as a surrogate for competition.

Findings

Having discussed the various options open to the States of Jersey concerning competition and regulation, d&i then discusses what each of these options might look

like in the Jersey context, and the theoretical benefits each might generate, (although unfortunately, given the restricted timescale inherent to this review, d&i has been unable to quantify potential savings in any detail). d&i has also highlighted any practical difficulties the States of Jersey might encounter in implementing any of the options discussed.

In doing so, d&i concludes in section 5 that retail competition is unlikely to be a viable option in the absence of a contestable market at the wholesale level, as the theoretical benefits to be derived are unlikely to be sufficient to make retail competition effective in practice.

In sections 6 and 7, d&i considers the remaining viable options, and set out a high level assessment of these against the following criteria:

- ability to meet States' objectives;
- potential costs of implementation;
- increased benefits to customers;
- barriers to adoption; and
- enabling steps required.

Conclusion

In conclusion, d&i has not attempted to recommend a preferred option to the States of Jersey. Rather it is the intention that this report will act as a useful tool in focusing attention away from solutions that are unlikely to succeed, and to inform future energy sector discussions and options appraisal.

d&i is conscious that some of the options presented make perfect theoretical sense, and would derive real benefits to customers in both Jersey and Guernsey. d&i are also conscious that collaboration on a topic as important as this would make sense given the very real and very similar issues the two Islands are currently facing. However, there may well be practical barriers that prove impossible to over-come in implementing a number of the options. d&i suggests that the States of Jersey consider the options presented within its current review of energy policy.

Table of Contents

1 Introduction

design and implement limited (d&i) is pleased to present this report to the Planning and Environment Department of the States of Jersey for its consideration.

This report is structured as follows:

- in the remainder of section 1, d&i sets out the States of Jersey's requirements for this assignment, provides some context for this report and outlines some terminology relating to the energy sector within the Channel Islands;
- section 2 provides background to the gas and electricity sectors in Jersey and Guernsey covering market structure and prices as well as descriptions of the regulatory and legislative arrangements in each jurisdiction;
- within section 3, d&i presents options for a wholesale electricity market;
- section 4 covers retail electricity market options;
- feasible options combining both retail and wholesale elements are then presented within section 5;
- section 6 covers the issues relating to regulatory intervention within both jurisdictions;
- an assessment of the viable options is then presented with section 7;
- section 8 provides a summary of the report and presents certain conclusions; and
- a number of appendices provide for supporting information.

1.1 Client Requirements

For the record, the States of Jersey set out the following four areas where it requires support.

1. ***Market Structure*** - Examine and compare the current structure and operation of the energy utility market in Jersey and Guernsey with respect to price differentials, market structure and regulatory approach.
2. ***Wholesale Market*** - Examine the opportunities for improvement e.g. efficiency savings, under a joint Channel Island energy utility market and regulatory body. Outline the barriers and market and legislative consequences of such a proposition.
3. ***Retail Market*** - Assess opportunities and barriers for the liberalisation of the electricity market to allow the competitive supply of electricity in Jersey or

across the Channel Islands. Outline the economic and legislative consequences.

4. ***Legislation Review*** - Examine existing legislation to ensure that it allows for electricity and gas generation to be sold to/by third parties on fair and non-discriminatory conditions. If necessary provide recommendations on any necessary legislative changes required to allow this.

Consideration of the Channel Island Oil / Fuel Markets did not fall within the scope of this report. d&i understands that the rationale for this decision is that these are already considered to be open to a degree of competition. Furthermore these products do not have the same institutional and infrastructure barriers that exist within either the gas, or electricity, sectors.

The scope of the report is somewhat broader than the original series of questions posed in the Terms of Reference. In considering the scope for efficiency in the energy sector, d&i have started from a consideration of the policy objectives that exist (within Jersey) in order to place potential efficiency savings in context. In doing this, d&i has also set out the indirect considerations that need to be taken account of – how the electricity sector costs and revenues flow through Jersey's economy.

1.2 Terminology

This paper utilises a number of standard terms relating to the electricity sector. For clarity these are described in the following sub-sections.

1.2.1 Wholesale

The term "wholesale" describes the generation of electricity and its subsequent trading between energy companies. Within the Channel Islands, this will be the production of electricity by on-Island power stations, the importation of power and trading of power between electricity companies. Furthermore, it is important to recognise that mains electricity is the ultimate "just-in-time" product. Accordingly the wholesale electricity market is strongly linked the associated retail market.

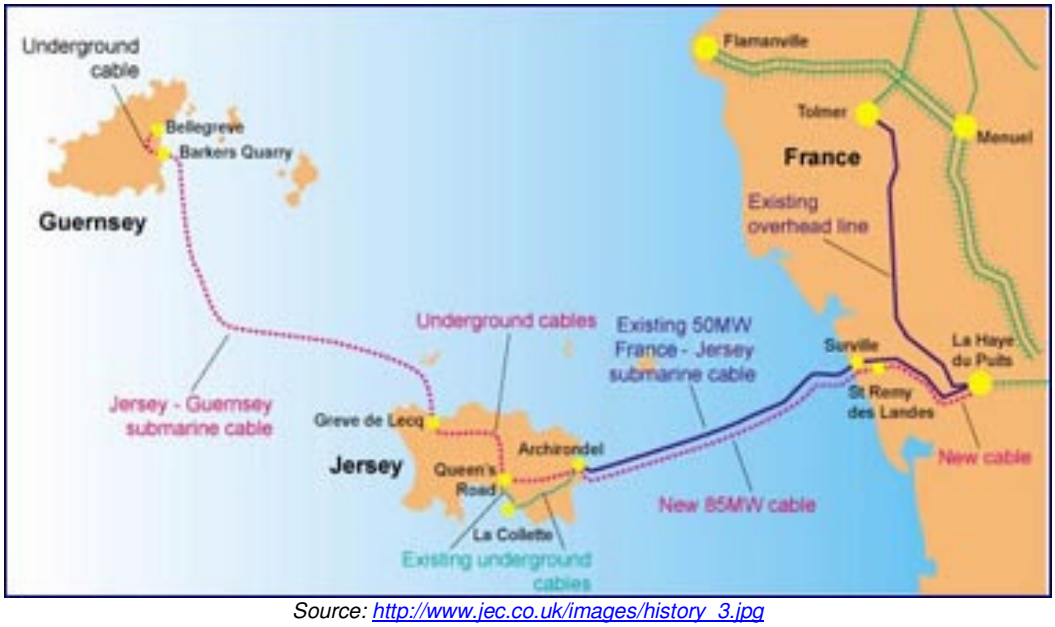
1.2.2 Network (Transmission / Distribution)

These terms are used to describe an electrical network over which electricity is transported i.e. delivered. Typically, "transmission" is utilised to identify high voltage systems and "distribution" describes lower voltage level systems. Within the Channel Islands, the main interconnections between Jersey, Guernsey and France are described as "transmission" with the remainder of the network being considered as the "distribution" system. An electricity network is usually considered to be a natural monopoly[1] and regulated as such.

[1] A "natural monopoly" is where fixed capital costs are so high that it is never profitable for a second firm to enter and compete typically because economies of scale exist so that a single firm is needed and any segmented ownership would be less efficient e.g. if a second firm constructed a competing electricity network in Jersey the overall network costs would rise.

The Channel Island Electricity Grid ("CIEG") is the transmission network that provides for the delivery of French electricity to Jersey and onwards to Guernsey as per Figure 1 below. The delivery of electricity across the CIEG is described the importation / exportation of energy.

Figure 1 – Channel Island Electricity Grid



Source: http://www.jec.co.uk/images/history_3.jpg

1.2.3 Retail (Supply)

The retailing of electricity describes the regime for the sale of energy to customers. Where retail competition exists in electricity and gas (e.g. as in the UK) customers can exercise choice and sign up with any licensed retailer. At present in Jersey (and Guernsey) this choice is not an option and customers can only purchase energy from the relevant local firm. It important to note that in certain jurisdictions the selling of electricity to customers is referred to as "supply (this includes both Guernsey and Jersey). However the phrase "retail" is also used widely. To avoid confusion with the economics concepts of "supply" and "demand", it is d&i's preference to utilise the term "retail" and this approach is taken within this report.

It is important to note that where retail competition exists, the competing retailers will pay common delivery charges to utilise the network / pipelines over which the energy is delivered rather than install any competing network / pipeline infrastructure.

Under EU regulations all customers are becoming able to choose their retailer, although the realised benefits of this choice is variable – for example in the Republic of Ireland electricity market allows for full retail competition but, there are no retailers actively seeking to sell to domestic customers other than the existing incumbent.

1.3 Context

The Bailiwick of Jersey is highly dependent on the financial services industry, tourism and the growing e-commerce sector. As such, the security of its electricity supply is of primary importance, but, at the same time, islanders are becoming very aware of the environmental impact of its energy choices and therefore energy policy is becoming an important political topic.

The States of Jersey's primary objective[2] is to "***maintain and enhance a strong, successful and environmentally sustainable economy***". This is supported by supplementary policy objectives of, among others, contained greenhouse gas emissions at 1990 levels, a 2% per annum sustained increase in real gross added value, protection of on-Island jobs, and sustained low inflation.

As part of its stated commitment to develop a comprehensive energy policy[3], the States of Jersey is seeking support in a number of areas to help inform the process. One area in particular under consideration is the possibility of collaboration with other Channel Islands to increase efficiency through economies of scale - potentially eliminating duplication of activities.

In order to set the scene, Jersey and Guernsey are briefly compared below:

Table 1 - Overview

	Jersey	Guernsey
Size (CIA)	116 sq km	78 sq km
Population (CIA)	91,084 (July 2006 est.)	65,409 (July 2006 est.)
Households (GOV)	35,562 (2001 Census)	22,664 (2001 Census)
GDP - per capita (CIA)	US$ 40,000 (2003 est.)	US$ 40,000 (2003 est.)

Source:
CIA - https://www.cia.gov/cia/publications/factbook/index.html
GOV – http://www.gov.je and http://www.gov.gg

It should be noted that Guernsey is currently facing similar issues to Jersey. The States of Guernsey recently issued its first Government Business Plan[4] in which it stated its Fundamental Priority Number 2 is to *"plan for sustainable economic growth"* and its Service Priority Number 10 is to *"meet energy needs more efficiently and sustainably"*. Furthermore, in its recent debate on the development of competition law in the Island[5], the States of Guernsey noted that an informal investigation will be carried out into the energy market as a critical part of the Island's economy. Given the above, now should be an opportune time for the Islands to collaborate on these important issues.

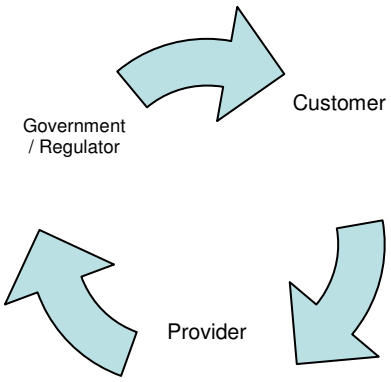
1.4 Benefit Continuum

In terms of this report, d&i considers that there are four distinct stakeholders who may benefit or otherwise from the matters covered within this report:

1. firms (at the wholesale and retail level);
2. customers;
3. Governments (as policy makers, shareholders and customers[6]); and
4. regulators.

[2] States of Jersey Strategic Plan 2006 – 2011 Commitment One
[3] States of Jersey Strategic Plan 2006 – 2011 Commitment Four
[4] States of Guernsey Government Business Plan, Billet XIX, November 2006
[5] States of Guernsey Billet XIII, 2006
[6] The States of Jersey consume approximately 10% of the electricity sold within Jersey. Source – JEC via telephone 14th December 2006.

Figure 2 - Benefit Continuum



The potential benefits of competition in the energy market may be represented at a high level as follows:

Table 2 – Benefits of Competition

Stakeholder	Positive	Negative
Government	(i) Reduced electricity prices (as a customer itself) (ii) Reduced RPI headline statistic (iii) Restrained on-going salary costs linked to RPI	(i) Reduced dividend from JEC (ii) Reduced licence fees (based on turnover)
Customer (public)	(i) Reduced electricity prices (direct) (ii) Reduced tax burden due to public services facing reduced energy costs and restrained salary base linked to RPI (indirect) (iii) Reduced costs of goods and services acquired from the private sector paying lower electricity costs and restraining salary costs under lower RPI (indirect)	Potentially increased tax burden as a result of reduced shareholder dividend
Retailer		Reduced profits

The above table is illustrative, and not intended in any way to be a complete analysis of all the potential benefits and disadvantages of the scenarios presented in this report - nor has any attempt been made to quantify the consequences mentioned. However, what it is intended to illustrate is the following:

- what one party might consider a benefit, other parties might view negatively. For the purpose of this review, when assessing any "benefits" of the options described, d&i have taken the position of the customer when any conflicting views present themselves; and

- in any market change, there will be both direct and indirect consequences for the stakeholders involved. d&i recognises that an assessment only of the direct consequences would be too simplistic. However, given the timing and resources allocated to this review, d&i has focussed on the direct impacts except where d&i considers that a potential indirect consequence is sufficiently material to any decision as to require specific mention.

2 Background

This section describes the legislative and regulatory arrangements that are in place in Jersey and Guernsey. It also describes the gas and electricity structure that exists on each Island.

2.1 Standard Regulatory Model

Before considering the regulatory regime for gas and electricity in Jersey and Guernsey, it is important to note that standard regulatory model typically consists of:

- Government retaining overall policy control which is prescribed via either primary legislation or else statutory instruments;
- sector-specific regulation that is independent of government;
- a prohibition on energy activities (e.g. generation) and then licences to permit the activity issued by the regulatory authority; and
- a regulatory authority (rather than a designated individual).

2.2 Regulation

The regulatory frameworks within Jersey and Guernsey at present are notably different.

2.2.1 Electricity

The Jersey Competition Regulatory Authority (JCRA) was established under law in 2001, and has specific licensing authority in relation to the postal and telecoms sectors, but not in relation to electricity or gas. Whilst these sectors would fall under its generic mandate, as would any other industry sector within the Island, there is no specific remit to ensure that electricity pricing is at a level of efficiency that would be consistent with a competitive environment.

The JCRA does not regulate the electricity sector in Jersey in order to set prices at an efficient level. The JCRA would initiate an investigation into JEC pricing if there was a complaint made about it under the provisions of competition law. JCRA could take action against the JEC if it could demonstrate that it had:

- abused its dominant position; or
- engaged in collusive behaviour.

The JCRA would also be able to consider if the impact of any potential mergers involving the JEC.

Regarding pricing, the JCRA explained[7] that JEC prices would be subject to an "*excessive pricing*" test. The JCRA explained that, under an excessive pricing test, it would not be sufficient for the JCRA to demonstrate that prices were too high based on benchmarking assessments of similar jurisdictions. Nor would it be sufficient to demonstrate that there was a large difference between JEC's cost base and the prices it charges. In order to demonstrate excessive pricing, the JCRA believes that prices would have to be out of *all reasonableness* to the price that a customer is prepared to pay.

The JCRA is a statutory body corporate, with a Chairman appointed by the States, and the remaining two, or more, members appointed by the Minister for Economic Development under consultation with the Chairman.

Under the Electricity (Jersey) Law 1937, the States has the right to determine electricity tariffs and to specify the manner in which tariffs are to be set, if it appears necessary to do so in the public interest[8]. The Minister for Economic Development has delegated responsibility under the Law for safeguarding the public interest. Hence, the Minister has backstop power to regulate electricity pricing[9], but there is no guidance within the Law as to what circumstances would cause this right to be exercised.

In Guernsey, the Office of Utilities Regulation (OUR) currently regulates the postal, telecoms and electricity sectors. The manner in which this remit is to be exercised in relation to Electricity is set out within the Regulation of Utilities (Bailiwick of Guernsey) Law, 2001 and the Electricity (Guernsey) Law, 2001. The Director General of Utility Regulation is a statutory official, appointed by the States of Guernsey, reporting directly to the States of Guernsey, (although their reports are submitted via the Commerce & Employment Department) and receiving direction from the States of Guernsey. The Commerce and Employment Department is responsible for advising the States on the appointment of the Director General and on any directions to be given to the Director General.

The Director General's objectives (see Table 3 below) are set out in law and focused solely on matters within the Bailiwick of Guernsey. Furthermore, the Director General has a duty to balance the above objectives. This position was criticised in the NAO's review of regulation[10] and it was recommended that the States should prioritise these objectives so as to give clearer guidance to the OUR.

[7] Conversation with Assistant Director for Environmental Policy/d&i on 24th November 2006. d&i have not been able to verify the legal basis of the JCRA's opinion and as such d&i have accepted the JCRA's view as a valid assumption for this assignment.
[8] Article 22.
[9] d&i were unable to identify any instance where this power has previously been invoked.
[10] Source: UK NAO Review of Regulation and Commercialisation in the States of Guernsey, Billet X, 2006.

Table 3 – Director General's General Duties

2. In exercising their respective functions and powers, the States and the Director General shall each have a duty to promote (and, where they conflict, to balance) the following objectives -

(a) to protect the interests of consumers and other users in the Bailiwick in respect of the prices charged for, and the quality, service levels, permanence and variety of, utility services;

(b) to secure, so far as practicable, the provision of utility services that satisfy all reasonable demands for such services within the Bailiwick, whether those services are supplied from, within or to the Bailiwick;

(c) to ensure that utility activities are carried out in such a way as best to serve and contribute to the economic and social development and well-being of the Bailiwick;

(d) to introduce, maintain and promote effective and sustainable competition in the provision of utility services in the Bailiwick, subject to any special or exclusive rights awarded to a licensee by the Director General pursuant to States' Directions;

(e) to improve the quality and coverage of utility services and to facilitate the availability of new utility services within the Bailiwick; and

(f) to lessen, where practicable, any adverse impact of utility activities on the environment;

and, in performing the duty imposed by this section, the States and the Director General shall have equal regard to the interests of the residents of all islands of the Bailiwick.

Source: Part II - Regulation of Utilities (Bailiwick of Guernsey) Law, 2001

In relation to competition, the States of Guernsey has recently approved the establishment of a Director General of Competition, but has stopped short of implementing full-scale competition law that is functionally equivalent to the JCRA.

2.2.2 Gas

In Jersey, the gas company is subject to the Jersey Gas Company (Jersey) Law 1989 and the company also falls within the generic mandate of the JCRA. As such, it is subject to a much higher degree of regulation than its Guernsey counterpart, where there is no equivalent law. Under the Law, the States reserves the right in the public interest to:

> *"determine the tariffs to be made by the Company in respect of gas which it supplies; and specify the manner in which the tariffs are to be assessed."*[11]

As the matter rests at present, theoretically Guernsey Gas enjoys complete freedom from regulation, subject to competition with GEL as an alternative to gas, and adherence to the requirements of Gas-specific Health & Safety legislation (see Section 2.3.2).

However, as noted above, there is to be an informal investigation carried out on the energy markets in Guernsey, a specific element of which is to decide (in relation to gas and bulk fuels) on the:

> *"appropriateness of either bringing them within the remit of the Regulation of Utilities Law, 2001, or of making them subject to a formal investigation under the [competition] legislation*[12]*".*

[11] Jersey Gas Company (Jersey) Law 1989, Article 89 (1)
[12] States of Guernsey Billet XIII 2006

As such, there is the potential for the remit of the OUR to be extended to include gas regulation in Guernsey.

2.3 Legislation

Regarding the review of legislation, the terms of reference asked the following question:

> *"Examine existing legislation to ensure that it allows for electricity and gas generation to be sold to/by third parties on fair and non-discriminatory conditions. If necessary provide recommendations on any necessary legislative changes required to allow this."*

Whilst the question refers to "legislation", it is assumed that it is intended to refer to legal matters more generally, namely:

- legislation (statute);
- legal licensing aspects; and
- legal contractual matters.

d&i has assumed that retail and generation issues should be considered, and that it would be helpful to consider Guernsey's position as well as the Jersey regime.

> ***Please note that the d&i is not qualified to provide legal advice. Thus, d&i recommends that the States of Jersey obtains the counsel of its law officers to fully assess the legal implications of the matters presented within this report. Furthermore, legislation incidental to those directly relevant pieces of legislation noted above for Jersey and Guernsey (e.g. The Arbitration (Guernsey) Law 1982, and Island-specific planning and development laws), are considered to be outside the scope of this review.***

2.3.1 Jersey

2.3.1.1 Legislation

The pieces of Jersey legislation relevant to this review are as follows:

- Competition Regulation Authority (Jersey) Law, 2001;
- Competition (Jersey) Law 2005;
- The Electricity (Jersey) Law 1937;
- Electricity Link with France (Protection of Submarine Cables) (Jersey) Regulations 2004; and
- Jersey Gas Company (Jersey) Law 1989.

An initial review of these pieces of legislation indicated no specific statutory prohibition to the generation of electricity and/or development of a gas and this has been adopted as an assumption within this assignment. However, by virtue of the fact that the Electricity (Jersey) Law specifically *enables* JEC to generate, deliver and retail the product, it follows that similar enabling legislation would be required to allow any new entrants to do the same. Similarly, the Jersey Gas Company (Jersey) Law 1989 gives Jersey Gas powers to operate that any new entrant would also require.

The time and resources allocated to this review did not allow for any detailed proposals to be drafted concerning what that legislation might look like. d&i recommends that such work be deferred anyway until the preferred option has been decided.

2.3.1.2 Licensing

In Jersey, electricity generation and gas production and energy retailing are not subject to licensing requirements and it is assumed that the JCRA would have no cause to investigate any new potential entrants to the energy market.

2.3.1.3 Contractual Issues

The contractual complexities in place concerning the CIEG arrangements mean, in practice, that any external generators seeking to supply into the Islands across the interconnector would be unable to do until at least 2012 when those contracts terminate. d&i asked JEC to describe:

> *"how a third party user could gain access to any available capacity on the link from France and indicative transmission charges that it would face"*

JEC responded[13] that:

> *"The links to France are virtually used to their full capacity for most of the year. Any access to these circuits would mean JEC and/or GEL giving up some of their entitlement to capacity. Because of this we do not have a transmission charge".*

2.3.2 Guernsey

2.3.2.1 Legislation

The Guernsey legislation relevant to this review are as follows:

- Regulation of Utilities (Bailiwick of Guernsey) Law, 2001;
- Electricity (Guernsey) Law, 2001;
- The Regulation of Utilities (Utility Appeals Tribunal) Ordinance, 2001;
- The Utility Appeals (Rules of Procedure) Order, 2002; and
- The Health & Safety (Gas) (Guernsey) Ordinance, 2006.

[13] JEC e-mail to Assistant Director for Environmental Policy 7/12/2006.

In Guernsey, unlicensed electricity generation, delivery and retailing are prohibited activities under The Electricity (Guernsey) Law, 2001[14], and parties wishing to do so would need to apply for a licence from the OUR.

In relation to gas, there are no statutory limitations that would prohibit the production and retailing of gas in the Island. However, new entrants would be subject to planning restrictions as normal, and would have to be in a position to comply with the requirements of The Health & Safety (Gas) (Guernsey) Ordinance 2006, which sets out the legally required procedures for the safe operation of a gas network and ancillary gas activities.

2.3.2.2 Licensing

In issuing a licence to GEL (OUR 02/04, Jan 2002), the OUR granted GEL an exclusive retail licence[15] until 2012. In theory, however, parties could still apply for a licence to *generate* electricity, although they would be subject to planning permissions, and of course any electricity generated would need to be sold to GEL because of their exclusive retail licence. The DG has the power to amend (shorten) the duration of this exclusivity agreement (regarding retailing) if, for example, a Channel Islands market was created, subject to States Direction. In OUR 02/35 the DG concluded:

> *"Whilst the DG considers that retail competition would be unlikely to benefit customers under the present market structure, it must be recognised that this structure could itself change. Possible changes include, for example:*
>
> - *the liberalising of the Jersey market;*
> - *the creation of a competitive retail market in gas;*
> - *significant step changes in demand requiring new generation build;*
> - *the development of a new interconnection; or*
> - *a change in the ownership or structure of GE.*
>
> *These changes could separately, or in combination, make retail competition viable and the DG recommends that the States make any period of exclusivity subject to the fact that any material change, including (but not limited to) those set out above, will trigger a re-examination of whether some form of retail competition would be appropriate for Guernsey at that stage."*

There are no licensing requirements in respect of the production and retailing of gas.

[14] Part I, Article 1 (1) (a) – (c)
[15] GEL Licence Condition 36.3 NB strictly this is defined as a "supply licence".

2.3.2.3 Contractual Issues

The issues concerning the CIEG contractual arrangements apply both in Guernsey and Jersey although the impacts are not equal (see section 3.2).

2.4 Gas

2.4.1 Market Structure

d&i understands that there are no known sources of natural gas within the Channel Islands.

Jersey Gas operates an effective monopoly for the provision of Liquefied Petroleum Gas (LPG), operating a small gas network in the St Helier area and also providing supplies around the Island to customers with their own onsite storage facility. A very similar arrangement applies in Guernsey with Guernsey Gas operating a gas network in and around St Peter Port.

Babcock & Brown Infrastructure, an Australian investment firm that focuses on the purchase and subsequent management of utility asset businesses, owns both Jersey Gas and Guernsey Gas via its ownership of IEG (http://www.i-e-g.com). Table 4 presents a limited overview of the IEG's operations within the Channel Islands.

Table 4 – Gas Overview

	Jersey	Guernsey
Gas Sales for 2005 (GSY & JSY)	153,875,000 kWh	129,540,000 kWh
Gas Calorific Value (GAS)	670 Btu/ft^3	716 Btu/ft^3
Number of customers as at September 2006 (1)	10,000	Not available

Source:
GSY - http://www.gov.gg/ccm/cms-service/download/asset/?asset_id=3071003
JSY - http://www.gov.je/NR/rdonlyres/A3AC49D9-D623-4235-A049-2199AE38B301/0/JerseyEnergyTrendsJune2006final.pdf
GAS - http://www.jsygas.com/abo_gas.html & http://www.gsygas.com/abo_gas.html
1 - Jersey Gas provided this figure at the face to face meeting as per Appendix B, however d&i were unable to obtain the same information for Guernsey Gas.

The purchasing of LPG for Jersey Gas and Guernsey Gas is undertaken collectively by IEG. In addition, both firms utilise the same importation vessel for combined deliveries to the two Islands and share other services where appropriate. Therefore, it is not unreasonable to assume that the importation / raw product costs are very similar. However, each Island provides gas with different a Calorific Value (670 Btu/ft^3 in Jersey and 716 Btu/ft^3 in Guernsey) due to legacy arrangements. Consequently, appliances purchased in either Bailiwick will not work in the other without adjustment.

Clearly these gas firms do not (nor would not start to) compete with each other across the jurisdictions. Competition is viewed as existing in the competition from alternative energy choices i.e. oil or electricity. In fact, based on anecdotal evidence, there is reasonable competition in Jersey for new developments / builds between both the electricity and gas firms seeking to offer heating infrastructure. Furthermore, customer switching (e.g. from gas to oil for central heating) is considered a longer term activity (i.e. over an investment cycle) given the associated capital costs.

2.4.2 Pricing

Table 5 – Gas Tariffs

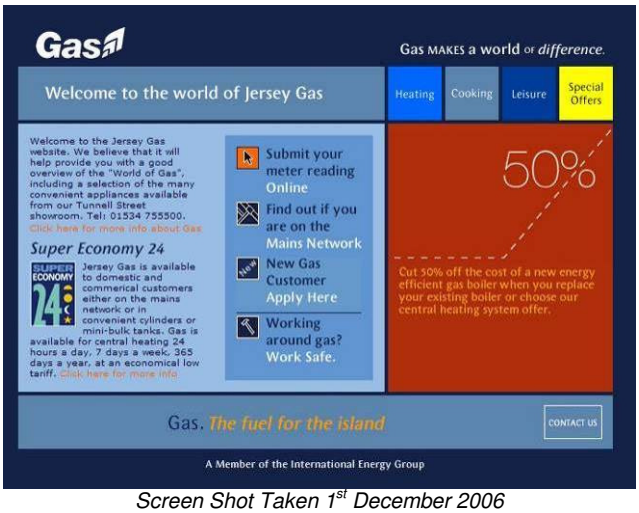
Tariff	Jersey Gas	Guernsey Gas
Commercial	7.51 (p/kWh) below 1643.8 kWh/day 7.34 (p/kWh) 1643.8 – 3287.6 kWh/day 6.99 (p/kWh) 3287.6 – 4931.5 kWh/day 6.84 (p/kWh) over 4931.5 Units per day	9.64 (p/kWh) (standard) 6.97 (p/kWh) over 50,000 kWh/yr
Super Economy 24	7.06 (p/kWh) below 54.79 kWh/day 6.34 (p/kWh) over 54.79 kWh/day 27.7p per day	6.97 (p/kWh) below 54.79 kWh/day 6.28 (p/kWh) over 54.79 kWh/day 27.54p per day
Standard 24	10.80 (p/kWh) up to 6.03 kWh/day 7.34 (p/kWh) 6.03 – 164.38 kWh/day 6.99 (p/kWh) over 164.38 kWh/day	11.06 (p/kWh)
Pre Payment	10.80 (p/kWh) via coin meter	11.69 (p/kWh) via coin meter

Source: Jersey Gas and Guernsey Gas September 2006 Tariff Leaflets

Gas prices within each Channel Island are very similar as shown by Table 5 above and significantly higher than the UK e.g. a medium[16] direct debit gas customer in Southampton would face an annual gas bill[17] of £511 (including VAT at 5%) if switched to Southern Electric compared with a Super Economy 24 customer who would pay £1,400 in Jersey and £1,388 in Guernsey. However, these price comparison are not "like for like" given the specific nature of the LPG product in the Channel islands compared to piped natural gas in the UK.

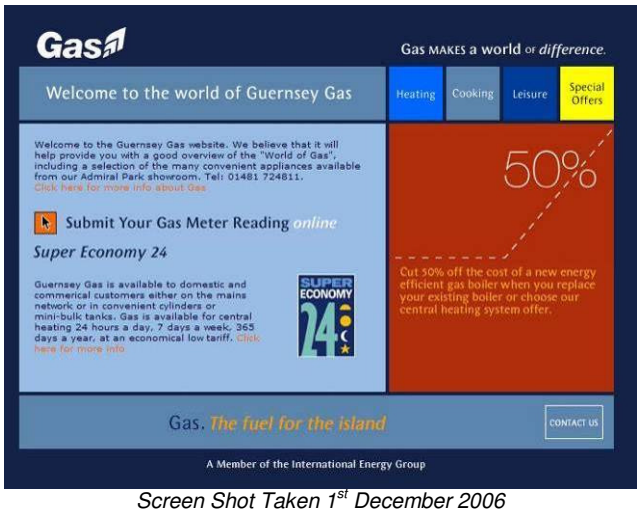
Jersey Gas and Guernsey Gas have almost identical branding as can be clearly seen from the screen shots from their respective web sites as presented in Figure 3 and Figure 4 below.

Figure 3 – www.jsygas.com



Screen Shot Taken 1st December 2006

Figure 4 – www.gsygas.com



Screen Shot Taken 1st December 2006

2.4.3 Competition

On the assumption that the gas networks in Guernsey and Jersey are natural monopolies, the range of competitive options that remain for the Channel Island gas sector would be based on development of a third party access regime to the networks / storage facilities and thereby allowing competing firms to introduce their

[16] Energy Watch (http://www.energywatch.org.uk) assumes a medium gas customer uses 20,500kWh p.a.
[17] http://www.energywatch.org.uk/uploads/Southern_Price_Comparison_Standard_December_20061.pdf

own gas into the Islands. However, whilst in principle it should be possible to introduce competition across the gas networks / storage facilities of each Island, d&i does not see that such an outcome is achievable without significant legal change to deliver this. The cost benefit of such a change would need to be developed and at this time d&i has no data with which to make (even) a high level assessment.

2.4.4 Integration

Given the common ownership of the two gas firms, it should be possible to undertake further integration of the two firms. However, d&i would expect IEG to have already taken forward such integration if an economic case could be made. Accordingly d&i considers that further integration is not an economically efficient outcome for the shareholders (i.e. the achievable cost saving[18] have already been realised via the existing collaboration).

d&i have not been able to assess this matter further given the level of data presently available within the time frame for the production of this report and further more detailed regulatory oversight would be needed to assess whether Jersey Gas (and Guernsey Gas) are extracting a super-normal profit from the monopoly they presently enjoy.

2.5 Electricity

2.5.1 Market Structure

The Jersey Electricity Company (JEC) operates an integrated electricity business within Jersey and Guernsey Electricity Limited (GEL) has a similar business model within Guernsey. The States of Jersey and the States of Guernsey have a controlling interest in JEC and GEL respectively with 62% of JEC state owned and 100% of GEL state owned. JEC's shares have been listed on the London Stock Exchange since 28th February 1964 and, in d&i's view, JEC's independent shareholders should bring to bear a degree of commercial pressure onto JEC's management. Whilst the Treasury and Resources Departments within both Jersey and Guernsey assume the role of JEC and GEL shareholder respectively; it is important to recognise that the States of Jersey has no formal power to give JEC explicit instructions unlike the States of Guernsey which issues States' Directions to GEL from time to time.

[18] It doesn't follow that these cost saving will have accrued to customers; it could be the situation that such costs control has increased the IEG's bottom line profits.

Table 6 – General Electricity Data

		JERSEY					GUERNSEY				
		2005-06	2004-05	2003-04	2002-03	2001-02	2005-06	2004-05	2003-04	2002-03	2001-02
COMMERCIAL	Total Number of Customers	45,839	44,877	44,348	43,845	43,072	28,400	28,255	28,201	27,844	27,566
GENERATION	Generating Capacity (MW)	209.00	209.00	176.00	176.00	201.00	115.58	115.58	115.58	115.58	122.18
	Maximum Demand (MW)	142.00	142.00	133.00	150.00	132.00	71.20	70.40	67.60	70.20	64.00
	Minimum Demand (MW)	38.00	36.00	35.00	35.00	33.00	19.90	19.80	19.10	18.20	19.90
	Electricity Generated (MWh) - in house	16,990	12,024	27,238	10,714	63,380	79,455	53,098	63,288	54,065	61,586
	Highest Daily Total (MWh)	2,561	2,614	2,349	2,738	2,376	1,292	1,307	1,179	1,267	1,099
	Lowest Daily Total (MWh)	1,296	1,268	1,241	973	947	712	681	668	648	630
CABLELINK	Cable Link Capacity Jsy<>EdF (MW)	145	145	145	145	145					
	Electricity Exported to Jsy from France (MWh)	647,748	629,210	605,319	610,304	541,162					
	Electricity Exported to Gsy from France (MWh)	267,165	324,121	300,619	273,195	260,385					
	Cable Link Capacity Jsy<>Gsy (MW)						60	60	60	60	60
	Electricity Imported from Jsy (MWh)						276,812	288,463	266,163	264,326	243,418
DISTRIBUTION	Transformer Capacity (kVA)	380,970	366,705	359,835	350,740	345,010	183,600	177,000	172,280	168,705	164,310
	Number of Transformers (JSY - number of substations)	659	639	629	618	612	389	383	387	376	#N/A
FINANCIAL	Units Sold (MWh)	624,000	603,000	595,000	581,000	564,000	331,883	317,402	306,389	295,668	283,457
	Sales of Electricity (£'000)	50,391	44,231	43,232	42,244	40,954	26,631	25,284	24,461	23,803	22,869
	Operating Contribution (£'000)	4,277	6,711	6,549	6,536	4,238	-795	35	-55	704	225
	Capital Expenditure (£'000)	5,700	5,400	5,500	8,500	4,600	3,182	2,878	4,727	2,762	3,481
	Total Expenses (£'000)	46,114	37,520	36,683	35,708	36,716	30,867	28,162	27,306	26,238	25,905
PERSONNEL	Employees (Average FTE)	183	179	188	191	215	234.9	234.9	237.3	237.4	252.4
TECHNICAL	System Demand Factor (%)	50.2	48.5	51.1	44.2	48.8	57.1	55.1	55.5	52	54.4
	Average Minutes lost per Customer	39	11	12	27	9	12	15	53	68	34
	High Voltage Faults	8	8	5	14	5	12	13	36	33	10
	Low Voltage Faults	91	89	114	121	80	186	202	215	199	183
METRICS	Units sold per employee (GWh/FTE)	3.41	3.37	3.16	3.04	2.62	1.41	1.35	1.29	1.25	1.12
	Units sold per customer (MWh/customer)	13.61	13.44	13.42	13.25	13.09	11.69	11.23	10.86	10.62	10.28
	Local Island Surplus (MW)	67.00	67.00	43.00	26.00	69.00	44.38	45.18	47.98	45.38	58.18
	French Electricity Usage (% excluding losses)	97%	98%	95%	98%	89%	76%	83%	79%	82%	78%
	Local Island Surplus (% of peak demand)	47.2%	47.2%	32.3%	17.3%	52.3%	62.3%	64.2%	71.0%	64.6%	90.9%
	Average Bill (£/customer)	1,099	986	975	963	951	938	895	867	855	830

Within both Jersey and Guernsey, a range of data is available for both firms presented as Table 6 above. This shows some of the key elements of data for the last five years. From the data in Table 6, it would seem, at first sight, that there is overcapacity within the generation sector in each Island as both JEC and GEL rely heavily on imported volumes, with JEC utilising more of the energy from France than GEL. This apparent overcapacity results from the on-going requirement to provide sufficient alternative generating sources to accommodate a failure within the CIEG cable networks, in particular GEL must ensure it can accommodate a failure of the 60 MW cable between Guernsey and Jersey.

Table 7 – Generating Sources

Location	ID	Engine Manufacturer	Engine Type	Rating (MW)	Speed (rpm)	Cyls No.	Bore (mm)	Stroke (mm)	Year Commissioned	Year Decommissioning
Guernsey	C1	Sulzer	9RNF68	12.2	150	9	680	1,250	1979	2014
Jersey	DL01	Mirrlees	AV16SS	5	375	16	483	559	1961	2015
Jersey	DL02	Mirrlees	AV16SS	5	375	16	483	559	1961	2015
Jersey	TA06	Parsons	Single pass STG	30	3000	#N/A	#N/A	#N/A	1966	2015
Jersey	TA07	Parsons	Single pass STG	30	3000	#N/A	#N/A	#N/A	1974	2015
Guernsey	C2	Sulzer	9RNF68	12.2	150	9	680	1,250	1980	2015
Guernsey	C3	Sulzer	9RNF68	12.2	150	9	680	1,250	1982	2017
Guernsey	GT2	Thomassen	PG-5271	19.5	5,100	#N/A	#N/A	#N/A	1996	2021
Guernsey	C4	Sulzer	9RTA58	14.2	125	9	580	1,700	1987	2022
Guernsey	GT3	Thomassen	PG-5271	19.5	5,100	#N/A	#N/A	#N/A	1997	2023
Guernsey	CHP1	MAN	D2842LE	0.28	1,500	12	128	142	2001	2026
Guernsey	D1	Sulzer	9RTA58	14.5	136	9	580	1,700	1993	2027
Guernsey	GT4	Alstom	Cyclone	11	9,500	#N/A	#N/A	#N/A	2003	2028
Jersey	DL03	Sulzer	ZA40S	10	500	16	400	560	1991	2031
Jersey	DL04	Sulzer	ZA40S	10	500	16	400	560	1991	2031
Jersey	TA08	Parsons	Single pass STG	45	3000	#N/A	#N/A	#N/A	1994	2031
Jersey	GT01	Rolls Royce	Olympus 2020/D	18	3000	#N/A	#N/A	#N/A	1963	Until Uneconomic Repair
Jersey	GT02	Rolls Royce	Olympus 2024/C1	28	3000	#N/A	#N/A	#N/A	1986	Until Uneconomic Repair
Jersey	GT03	Rolls Royce	Olympus 2022/C24	28	3000	#N/A	#N/A	#N/A	1978/2002	Until Uneconomic Repair

In addition, JEC's plant tends to be older and therefore scheduled to be replaced by the third interconnector as per JEC's current plans – see section 3.3.1 below. Within the Channel Islands at present there is a surplus of capacity and in fact the simplified example within Appendix C shows the size of surplus under normal conditions.

Figure 5 – Plant Mix (1)

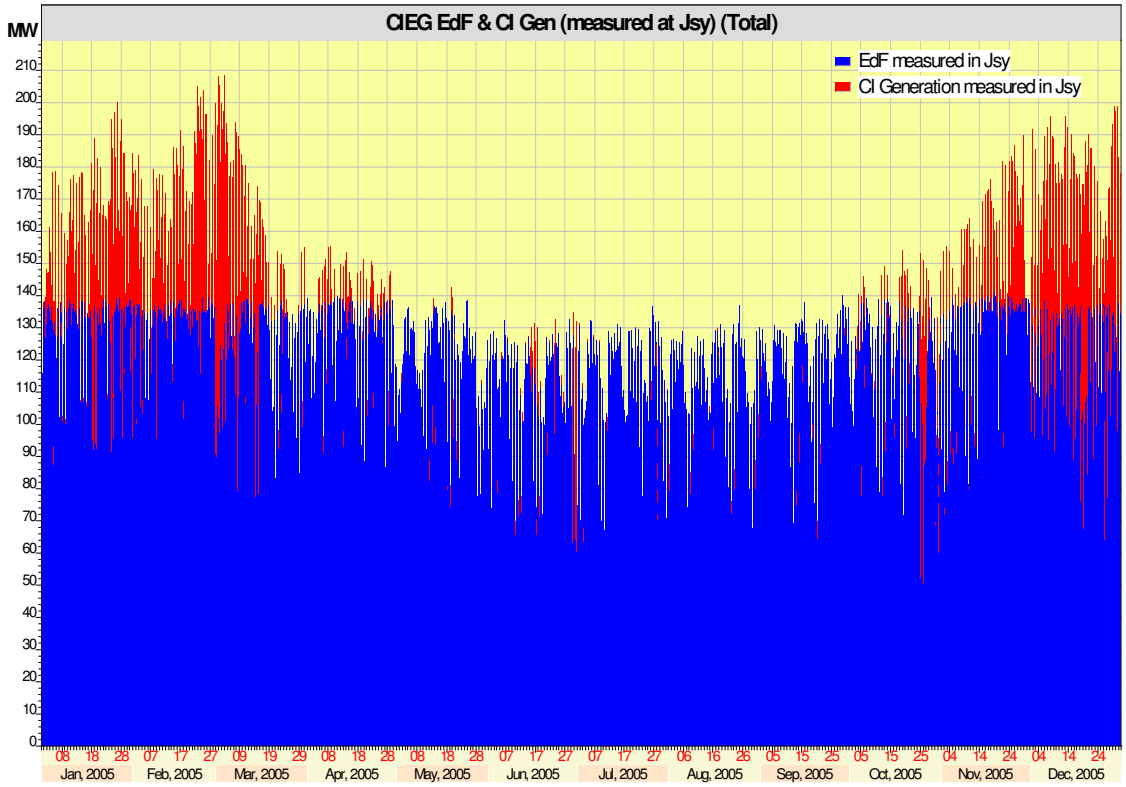
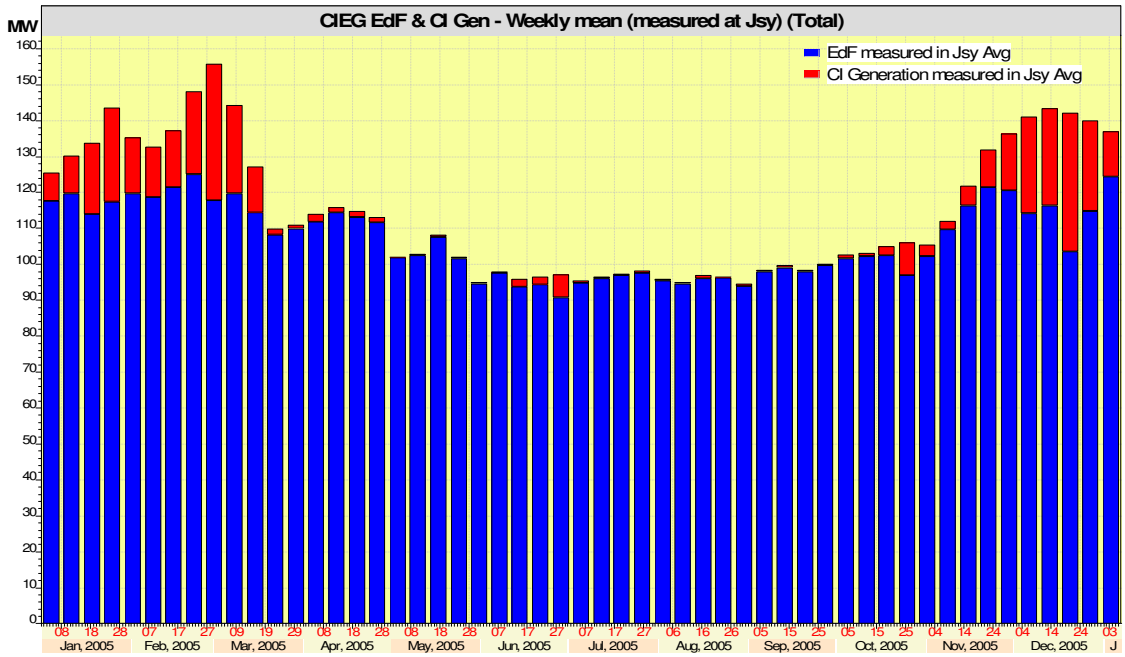


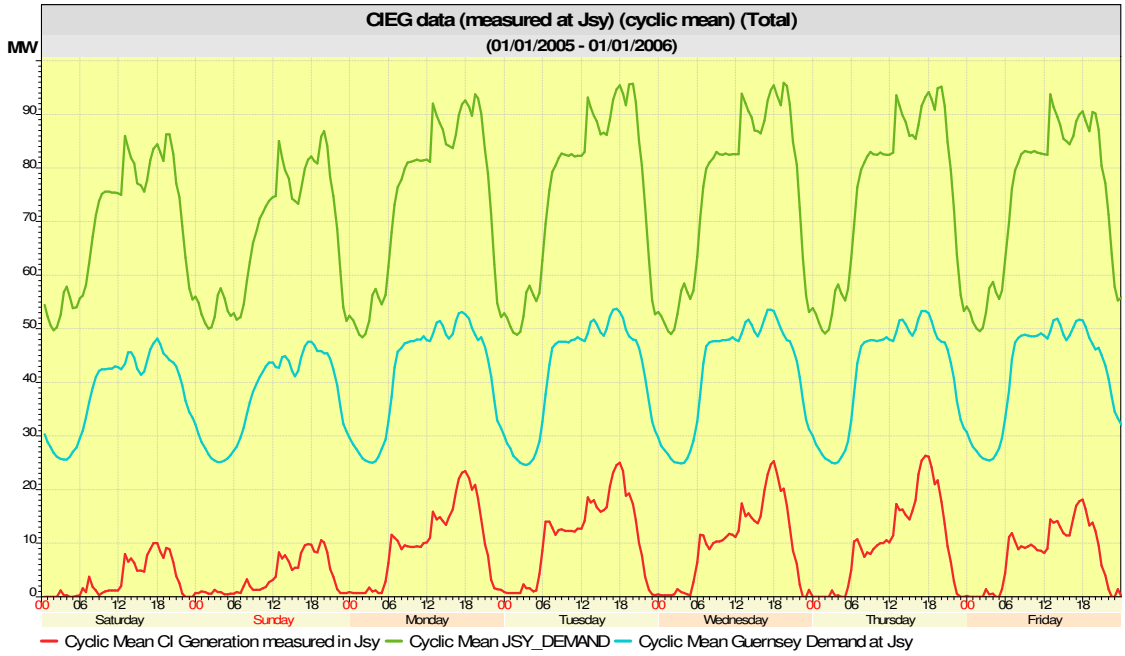
Figure 5 above shows the distribution of local generation and important across 2005 on a half hourly basis and Figure 6 below presents weekly averages of the same data. These figures show that Channel Island demand is almost completely satisfied by importation during the summer and that local generation is needed for the higher winter demands. Furthermore, the level of electricity generated in house (see Table 6 above) shows that the majority of Channel Island electricity is currently produced in Guernsey.

Figure 6 – Plant Mix (2)



The weekly cyclic means[19] graph for 2005 within Figure 7 below shows average load shape and it can be observed that local electricity production is, on average, more focused into weekday rather than weekend periods.

Figure 7 – Channel Island Weekly Cyclic Means



2.5.2 Pricing

In relation to customer tariffs, both JEC and GEL have published tariff documentation available both in leaflet form and via their respective websites. Furthermore, GEL's annual report[20] provides summary statistics on their tariffs and upon request JEC provided d&i with equivalent data. This data is presented together as Table 8 below and demonstrates the relative sizes of the two firms and the similar tariff arrangements. For the record, JEC reported £1m income related to the accounting treatment for accruals of unbilled units and d&i has excluded this data from the metrics presented within Table 8 below which leads to certain inconsistencies with the data in Table 6 above relating to total income.

[19] A "weekly cyclic mean" graph is where the data is split to weeks and then averages calculated for the same time period across every week i.e. all of the values for the same day and time (such as Wednesday 11:30) are averaged together.

[20] http://www.electricity.gg/about/annualReports.asp

Table 8 – Electricity Tariff Data

Analysis of Energy Sold 2005/2006	Tariffs	Meters on Circuit	Income (£'000)	Units Sold ('000)	Avg Price (p/Kwh)	Avg Units per Meter
The Jersey Electricity Company Limited (source JEC)	Standard Tariff	33,242	24,357	276,435	8.81	8,316
	Domestic E7	5,236	3,610	50,808	7.11	9,704
	Commercial E7	306	773	10,105	7.65	33,023
	Domestic Comfort Heat	5,725	3,401	53,753	6.33	9,389
	Commercial Comfort Heat	70	100	1,484	6.74	21,200
	MD LV	456	9,464	126,201	7.50	276,757
	MD HV	20	2,412	33,650	7.17	1,682,500
	E7 LV	86	2,751	38,221	7.20	444,430
	E7 HV	9	979	14,605	6.70	1,622,778
	Public Lighting	4,510	209	2,471	8.46	548
	Others	1,258	1,302	16,267	8.00	12,931
	Accrual for Unbilled Units*		1,033			
Guernsey Electricity (source GEL)	Standard Tariff	11,746	8,861	97,599	9.08	8,309
	Super Economy 12	17,112	9,864	144,813	6.81	8,463
	Heat Pumps & Off Peak Tariffs	344	250	4,408	5.68	12,814
	Non Peak	16	9	202	4.46	12,653
	Maximum Demand HV	7	430	5,176	8.31	739,434
	Maximum Demand LV	131	3,891	45,665	8.52	348,585
	Industrial Economy HV	5	723	9,615	7.52	1,922,984
	Industrial Economy LV	38	1,570	20,565	7.64	541,178
	Public Lighting	2,178	64	705	9.12	324
	Embedded Generation	1	-3	-41	7.2	-41,410
	Accrual for Unbilled Units		251	3,177	7.89	0

JEC Total/Average	**50,918**	**49,358**	**624,000**	**7.91**	**12,255**
GEL Total/Average	**31,578**	**25,910**	**331,884**	**7.81**	**10,510**
% Differences ((J-G)÷G)	**61.25%**	**90.50%**	**88.02%**	**1.32%**	**16.60%**

Electricity prices within the Channel Islands are higher than in the UK. For example, a medium[21] direct debit electricity customer in Southampton would face an annual electricity bill[22] of £312 (including VAT at 5%) if switched to Scottish Power compared with a Standard Tariff customer who would pay £329 in Jersey[23] and £373 in Guernsey[24]. It is important to note that JEC have announced[25] a 19.5% increase in tariff prices effective from 1st January 2007. Furthermore, the recent OUR press release[26] details a draft price control decision that would permit GEL an 18% price increase from April 2007 with prices then frozen at that level until March 2011. In discussions with d&i, JEC were keen to stress the excellent value that it offers to Jersey and, as such, prepared a note on tariff comparisons; d&i has not verified these claims but, for the record, JEC's note is included within Appendix A.

Finally, in order to consider the value chain costs, it is necessary to segment costs into generation and importation, network and retail; however, such data was not

[21] Energy Watch (http://www.energywatch.org.uk) assumes a medium electricity customer uses 3,300 kWh p.a.
[22] http://www.energywatch.org.uk/uploads/Southern_Price_Comparison_Standard_December_20061.pdf
[23] http://www.jec.co.uk/tariffs_commercialdomestic.htm#cdtariff on 27th December 2006 – JEC's Standard Domestic Tariff has a daily service charge of 13.09p and a unit charge of 8.52 (p/kWh).
[24] GEL's Standard Domestic Tariff has a unit charge of 9.96 (p/kWh) and a standing Charge of £11.07 per quarter.
[25] http://www.jec.co.uk/pdfs/7203_tariff_increase_20x7_colour_jep_v3.pdf
[26] http://www.regutil.gg/docs/201206.pdf

readily available from JEC although GEL's regulatory accounts[27] provide this breakdown.

2.6 Summary

Having set the scene for regulation, legislation and the existing markets for electricity and gas, this report now goes on to assess the options relating to wholesale sector competition.

[27] See http://www.electricity.gg/about/regulatoryAccounts/year2005/RegulatoryAccounts2005.pdf for GEL's 2004/05 regulatory accounts. The regulatory accounts for 2005/06 are not presently available on http://www.electricity.gg.

3 Wholesale Electricity Market

This section:

- assesses the generation structure, demand and interconnection capacity that would exist in a combined market;
- describes the existing level of integration, and discusses whether all the anticipated benefits are captured;
- identifies the key synergies that exist – and at a high level the potential for savings that could be realised; and
- sets out four options for Channel Island wholesale electricity sector integration;

It must be noted that d&i were asked to assess whether there is scope for efficiency savings through the further integration of the Channel Island's energy utilities and regulatory functions. Consideration of the precise mechanisms of any investigated options and the political and strategic acceptability was not part of the brief. Thus the options put forward were not developed in consultation with any other stakeholders or Governmental Authorities in Jersey or Guernsey which would be key in many of the options considered here.

3.1 Combined Market Structure

If a combined wholesale market was introduced, the physical assets would not change (at least initially). However, it would be usual for the operating regimes to be changed with a key element being the introduction of Channel Island-wide merit order or economic despatch[28] with greater levels of co-ordination between JEC and GEL. Within these arrangements, JEC would be able to rely (contractually) on certain GEL plant to provide services when called for, and visa-versa, and specifically JEC have indicated that a Channel Island economic despatch would provide the following benefits[29]:

> *"A combined CIEG Electricity Company would offer opportunities to rationalise generating plant across both Islands to support peak periods when demand exceeds maximum import capability. It is likely that JEC would decommission boilers 3,4 and 7 earlier than expected under a combined utility and Guernsey's thermally efficient plant would be used to support not only plant failures in Jersey but also load peaks. Rationalisation of support and back office functions would also offer some cost savings. More importantly a combined utility would allow strategic capital investment plans in new plant to be pushed further into the future, as improved utilisation of existing plant across both Islands is achieved. It*

[28] http://en.wikipedia.org/wiki/Economic_dispatch - Economic dispatch is the method of determining the most efficient, low-cost and reliable operation of a power system by dispatching the available electricity generation resources to supply the load on the system. The primary objective of economic dispatch is to minimize the total cost of generation while honouring the operational constraints of the available generation resources.

[29] JEC e-mail to the Assistant Director for Environmental Policy 8th December 2006.

is difficult to forecast cost savings, without further detailed discussions between JEC and GEL. But savings are available which would benefit customers and shareholders."

3.2 Current Position - CIEG Regime

The present JEC / GEL integration is centred on the CIEG arrangements. The CIEG consists of two cables from France to Jersey (the older cable (EDF1) is 55 MW and the second cable (EDF2) is 90 MW) as well as a 60 MW cable from Jersey to Guernsey. JEC indicated[30] that the electrical flow from between Jersey and Guernsey is asymmetric with the full 60 MW capable of import into Guernsey whereas GEL could only export 25 MW to JEC given network constraints within Guernsey. Whilst the EDF1 was funded solely by JEC, the costs of EDF2 and the link between the Islands was funded based on expected benefits.

All power imported from France across the two Jersey / France links is purchased by the CIEG and collectively the Channel Islands are the biggest single retail customer in Normandy. In assessing the price paid and level of contracted energy, both JEC and GEL determine the volumes that they wish to take. Whilst the CIEG currently has no must take provisions, GEL's contracted volume through the CIEG can always be at least 16MW – their contractual minimum with the remaining power available to JEC i.e. JEC can't restrict the power exported to GEL below 16 MW (without GEL's agreement).

The existing CIEG purchase arrangements are:

1. locked into EdF until 2012; and

2. on an agreed pricing basis until 2008 – price is based on assumed volumes and linked to the Powernext price[31] plus a supplier margin. The tariff is on a non-interruptible basis[32];

The CIEG contract with EdF assumes the operation of a cross-Island merit order operating against the contract prices. Operating this correctly should mean that both Islands see the lowest cost in each hour – given the agreed contract with EdF. Over the longer term, the EdF contract price is based on assumed volumes taken by the CIEG. If volumes are lower than anticipated, then EdF will be exposed to the costs of imbalances in the French market – i.e. they will have to sell back power to the balancing market (potentially at a loss) that they had anticipated the CIEG taking.

Any potential future joint negotiations would need to include regulatory requirements for all parties to ensure merit order dispatch

[30] Conversation with the Assistant Director for Environmental Policy /d&i on 23rd November 2006.

[31] JEC stated in discussions that they believed that as the European electricity market had become more competitive than at the start of the CIEG arrangements, the Powernext price represented a fair market for wholesale energy and that they were unlikely to find generators willing to sell to them at less than their expectation of relatively liquid, tradable price. Whilst this position has not been thoroughly tested, it is prima facia, reasonable.

[32] This means that in the event of a generation shortage in France requiring the disconnection of customers, customers in France on interruptible terms would be disconnected before Jersey/Guernsey.

so reducing on-island costs. Consequently future contracts could be negotiated at minimum cost.

3.3 Wholesale Electricity Options

In this section, d&i describes four options regarding the integration of the Jersey and Guernsey electricity sectors at a wholesale (i.e. generation) level. Within each option, there are number of variants that could be adopted. At this stage d&i believes that it is more useful to determine the potential benefits of each approach, and most importantly to take a view on what is achievable, before any options that are viable are scoped out in more detail. Thus, this section does not describe, for example, how any traded market would operate, but it does comment on the high level principles that could underpin it.

3.3.1 Option 1 – Maintain the existing arrangements

As noted in section 3.2 there is a level of existing collaboration through the CIEG arrangements.

There are also some joint purchasing arrangements that exist between JEC and GEL – this includes the procurement of Heavy Fuel Oil (HFO) and HV cable.

However, this co-operation does not extend to decisions regarding optimising the mix of plant held across the Islands.

Under the existing arrangements the procurement of a new Jersey/France link will be undertaken solely by JEC, and commissioned in 2012/13. JEC commented[33]:

The third cable is due to be commissioned around 2012/13 and will allow the permanent retirement of old steam plant at La Collette. It will also strategically:

1. *provide n-1 security standards[34] within the importation transmission network, in the current absence of which is provided (subject to delay during run-up operations) by indigenous power generating plant. Known defects in the submarine cable of one of the two circuits between France and Jersey (the 21 years old, 55MVA circuit) present a significant risk of its failure, which independent technical evaluation has concluded would be irreparable if due to electrical, as opposed to mechanical, causes.*

2. *be installed sufficiently far away from the other 2 submarine cables to prevent coincident damage.*

3. *reduce even further our requirements for HFO, which is becoming increasingly difficult to find and ship.*

[33] E-mail correspondence between JEC and Assistant Director for Environmental Policy (7/12/06)

[34] N-1 is a system planning standard. It means that the system is planned to normal "n" minus the loss of the single biggest generation input at system peak; in essence an adequacy standard assuming a number of contingencies. In Jersey this means that JEC plan to be able to maintain supply if the largest in feed (the second interconnector) is unavailable.

4. *reduce localised, chimney particulate emissions.*

3.3.2 Option 2 – Formalised Co-ordination

This option would seek to create a harmonised approach to generation planning across Jersey and Guernsey. At present, each Island operates to specified security standards.

Jersey operates its generation security standard to n-1. At present this requires the maintenance of La Collette as a contingency against the failure of one of the interconnectors from France. The commissioning of the third link in 2012/13 will allow for n-1 security standards to be maintained without on-Island planting to secure against a major transmission loss. This is aided by the fact that the new interconnector will be connected into a different part of the EdF network in the Manche, mitigating the risk of a loss of the interconnector supply arising from a fault in the French Transmission network. Jersey does not have a policy of maintaining sufficient generation on-Island to maintain supply.

Guernsey imports less of its energy (in annual percentage terms) than Jersey. As noted earlier, Guernsey is less able to rely on imports from France (in their case via the Guernsey/Jersey link). This is because:

- there is only one cable between Jersey and Guernsey;
- the contractual maximum entitlement means that (at worst for Guernsey) it can only receive 16MW across the link – less than 25% of peak demand;
- the level of on-Island planting (and the mix of planting) allows for a greater reliance on on-Island generation – for Guernsey the interconnection is subsequent to the existing generation build, whilst in Jersey the history of interconnection has informed subsequent generation investment decisions; and
- there is a specific States of Guernsey policy of "***Strategic Independence***", although this has been diluted from its original position (which was to retain sufficient on-Island capacity to meet demand), to the current position which is to "minimise the need to import energy[35]".

Under a co-ordinated Jersey / Guernsey planning model, the objective would be to:

- derive a level of on-Islands planting consistent with n-1 planning standards;
- defer future investments in generation; and
- bring forward generation closures.

[35] States of Guernsey Government Business Plan, Billet XIX 2006 Priority 10

3.3.3 Option 3 – Jersey / Guernsey Energy Market

This option would involve opening up both Jersey Electricity and Guernsey Electricity generation capability to competition with each other, and potentially to third parties – i.e. new entry generators.

Two options exist for creating wholesale competition:

- allowing (or creating) competitor companies to the incumbent(s); or
- creating a larger (Channel Islands) market (i.e. allowing JEC and GEL to compete inter-Island).

3.3.3.1 Competing generators

Technically, the possibility of competition in generation already exists in Guernsey. Whilst GEL is the single buyer of electricity in Guernsey, other parties could be granted a licence to generate by the OUR. The OUR would also be able to ensure that GEL purchased from a new entrant (in preference to its own generation assets) so long as it was efficient for it to do so. In Jersey again, technically, a competing generator could operate, however, enabling legislation would be required.

In practice there are significant barriers to new entry generation:

Cost base – the high volumes of on-Island demand met through importation and the costs of importation mean that it is unlikely that an on-Island generator could compete on cost. Any new entry is thus more likely to have some other economic rational to support it (such as waste to energy developments). Even if these are outside the control of JEC (or GEL) they are going to be (a) within States control, and (b) interested in securing a revenue stream to offset the costs of their primary activity. It is not clear whether the operating regime of any such plant would allow for JEC or GEL plant closures as this would depend both on its size and running regime.

Planning – d&i understands that there are also likely to be significant barriers to developments on the planning front. This would reduce opportunities for new plant development by any party, including JEC.

The existing structure – in practice (if not in theory) there are likely to be significant perceived barriers to any potential new entrant dealing with a vertically integrated incumbent, with States ownership/significant shareholding. Access to market would depend on clear access arrangements, off-take agreements and a supporting regulatory regime. It is not clear that these pre-conditions exist, although other entry barriers are likely to be so significant that these are second order (and more solvable) issues.

3.3.3.2 Creating a larger (Jersey/Guernsey) market

The development of competition at a wholesale level may thus depend on creating competition between GEL and JEC.

Wholesale electricity market design is complex and specialised. There is no one generally adopted model, so whilst the objectives of any wholesale market may be

similar across the world, the way in which this is achieved differs. The broad choices are:

- is all electricity traded through a central market, or are only volumes not contracted bilaterally traded through the central mechanism? These options are referred to as "gross" and "net" pools. The old UK pool was a gross arrangement, as, for example, are the Australian, Singaporean, Italian, Spanish markets. The NETA arrangements in the UK are a "net" pool, as are the arrangements in France;

- a central control, or decentralised control, of scheduling and dispatch? or

- an energy only[36], or energy plus explicit capacity market?

It is beyond the scope of this assignment to assess the relative merits of alternative market designs – the emphasis is on determining which high level options for introducing efficiency in the electricity sector across the Islands merit further assessment. However, for illustrative purposes, a combined market could be created such that:

- there would be a central market mechanism into which each company would bid its generation (most likely on a daily basis);

- a central clearing mechanism would then schedule generation (and interconnector transfers) to meet forecast demand at some ex-ante time;

- generation would be stacked in "merit order" such that, in any hour, the lowest mix of plant would be scheduled to meet demand;

- the ability of generation to physically deliver to demand may have to be taken into account in determining prices (this is referred to as a "constrained schedule"); and

- the losses incurred in delivery to Jersey or Guernsey would also have to be taken into account in pricing.

What the market option does is to apply market pressures to the short term use, and long term investment in generation assets and other sources of energy – notably importation. Assuming effective regulation, suppliers would only be able to pass on efficiently incurred costs. Thus, the objective of any of the models is the same, but the ability to deliver them, their costs, and their effectiveness will differ.

3.3.3.3 Summary

d&i notes that access to the interconnector is limited. It asked JEC if, and if so how, any interconnector capacity could be made available to third parties – as described in section 2.3.1.3 (contractual issues). In addition, it is important to note that under this

[36] More accurately "energy only" means that all costs (fixed and variable) are recovered through simple price/volume bids for MWh of output. In an explicit capacity market, at least some fixed costs would be paid as a capacity payment, with energy payments tending towards short run marginal costs.

option EdF (or another large European utility actively retailing electricity in France) could chose to enter the Channel Island market

This limits competitive options whilst such historic entitlement remain contractually in force, or at a minimum, it limits the ability of parties other that JEC and GEL to compete with each other.

3.3.4 Option 4 – The creation of one company

It is assumed that the creation of one company across both Islands would create economies of scale as the generation assets would be run on a combined portfolio basis, with retail costs being rationalised and allocated across all customers.

d&i notes that this is the most sensitive option and have made no judgement about how this occurs (i.e. merger, takeover of one by the other or else purchase of both firms by another company).

4 Retail Market

4.1 Objectives

As a first step in considering the possibilities of introducing retail competition, it is worth considering the objectives of introducing this form of competition. Some of these objectives are common with those for introducing competition at a wholesale level – others are supply competition specific. This includes:

1. efficiency pressures i.e. typically there is a desire to reduce overall price paid by customers and this relates to:

    a. protection of poorer customers – in UK terminology the "fuel poor" - there is a view that these people may not claim assistance even if they should logically do so;

    b. the prices paid by commercial / industrial customers are not a high percentage of end customer costs, however there are few energy intensive industries/activities in Jersey; and

    c. as energy costs are a small percentage of the total operating costs of businesses, it is deemed unlikely that business location decisions (between Guernsey and Jersey) would be driven by energy cost differentials between the Islands;

2. downward pressure on inflation as energy costs are a significant driver[37] on inflation - the States of Jersey strategic plan outlines an "anti-inflation" strategy which is to keep RPI(X) at or below 2.5% coupled with 2% real growth in Jersey and similar objectives are also likely to apply in Guernsey;

3. tariff innovation:

    a. reduce consumption at certain times – and thus costs – through changes to the load shape:

        i. import contract costs; and

        ii. on-island plant costs; and

    b. to allow for more effective competition between substitute products (notably gas in this instance, but also potentially heating oil); and

4. increased customer choice – competition is a more dynamic model than monopoly for responding to changing customer wants and needs.

[37] Jersey Retail Prices Index - March 2006 - States of Jersey Statistics Unit. On an annual basis the largest contributors to the change in the Retail Prices Index were: Fuel costs: increased by 16% compared to March 2005 and accounted for 0.5 percentage points of the overall annual increase in the RPI. Prices were up across this group, reflecting global increases in energy prices; specifically important to Jersey were electricity which saw its first price in several years, and oil.

4.2 Retail Competition Options

Having considered above the objectives of implementing retail competition, there are broadly three options regarding retail supply. These are described below, in the context of Jersey. The same basic models would apply to a combined Channel Island market.

4.2.1 Single Buyer / Seller

Within this option there is no retail competition which represents the existing arrangements in Jersey and Guernsey. JEC is the purchaser of its own, and potentially any other generator's electricity[38] (the single buyer function) as well as the seller of electricity to end customers. Under the present Jersey arrangements the price for supply to end customers is determined by JEC. Any pricing control would be solely a result of any JCRA investigation, and determination on excessive pricing. In Guernsey this is also the model presently adopted, but prices to end customers are subject to specific price controls determined by the OUR.

4.2.2 Large Customer Competition

Some markets adopt a model where retail competition is open to only some larger customers. Often this is a transitional arrangement between the monopoly (single buyer/seller) arrangements and full competition – for example the arrangements in the UK introduced competition for different sizes of customers in 1990, 1994, and ultimately for all customers in 1998 and France also adopted a phased approach. Similar arrangements apply across the EU and also in a range of markets across the world. Under this model, JEC would allow competition for some customers – the threshold for which would need to be determined. It is likely that there would be other qualifying criteria for a customer taking its electricity from a supplier other than JEC, specifically that it (or its new supplier) would be responsible for its direct costs (including metering). Such a model requires that transport costs are determinable on an individual customer basis, and that wholesale market interval metering is in place – see section 5 for a fuller description of these issues.

4.2.3 Full Retail Competition

Under this model, any customer regardless of size, would be eligible to take supply from a company other that the host supplier (JEC and/or GEC). This does not necessarily require wholesale market interval metering, but if this is not in place, it does require equitable arrangements for the allocation of wholesale costs to customers based on variations in customer load shape and the time varying wholesale price.

Retail competition is a viable model in many jurisdictions, but its effective adoption requires that a number of structural, technical and economic building blocks are in place. These are described in section 4.3 below.

[38] From within Jersey or imported across one of the interconnectors

4.3 Retail Competition Criteria

This section sets out the required elements to achieve supply competition. There is an overlap between some of the criteria – but they are set out as separate items to provide greater clarity.

4.3.1 Critical Mass

Retail competition involves a retailer undertaking a range of activities, from energy procurement (and risk management) through to customer service, licensing and billing. Some of these activities involve fixed, or largely fixed, costs. Retailers thus need to have a critical mass of customers to spread these costs across. For example, certain firms have chosen not to enter the Irish retail market as the number of customers is insufficient.

Three forms of new competitive supplier (in electricity) exist:

1. an existing electricity supplier from a different market;

2. an existing supplier of a product with synergies (expertise, billing systems, etc) from within the same market; or

3. a new start-up business that sees the opportunities to build a market share as existing suppliers are inefficient.

The critical mass of customers would vary for each of these scenarios – although estimating the number of customers that any type of new entrant would fall outside the scope of this study.

4.3.2 Realisable Cost Savings

Customers require an incentive to switch retailers. For industrial / commercial customers this may be an absolute figure, whilst for domestic customers it is generally believed that there is a requirement for a percentage saving off the total bill (say 10%) plus a minimum absolute saving. The OUR noted[39] that:

> *"A MORI study conducted for Ofgem in November 2001[40] concluded that a mean saving of £78 was the incentive that the surveyed customers (those who have not already changed retailer) required as an incentive to switch. However, a National Audit Office Report in January 2001[41] demonstrates that, in the 18 months since the market in the UK was opened up, 65 million customers have switched for an average saving of £45 per customer per annum. The DG notes that both these levels of savings exceed the absolute level of retailing costs in Guernsey."*

[39] OUR02/35

[40] "Experience in the competitive domestic electricity and gas markets" conducted by MORI for Ofgem, November 2001

[41] Office of Gas and Electricity Markets; Giving Domestic Customers a Choice of Electricity Supplier, 5 January 2001.

The Ofgem reviews of retail competition now follow a different format. The 2004 report[42] notes that:

- in 2001, 72% of customers that switched did so because of cost and in 2003 this figure was 65%;
- by 2003, 51% of customers had switched retailer since the market opened (in 1999); and
- social class was not a factor in customers' willingness to switch.

The 2006 report[43] suggests that the potential saving for an electricity customer paying by direct debit is £41 per annum – compared to purchasing from its host retailer. On the one hand, this suggests that customers are prepared to switch for this level of saving. However, it is also the case that the rate of customer switching slowed down significantly after 2001. It may well be that those customers that wish to switch, and are motivated to do so, have largely done so. Regarding the absolute level of saving required to switch for electricity customers, it is not possible to be precise as to the average saving level required, but it is likely to be a figure in excess of £35.

It is worth noting that dual fuel savings (gas and electricity) on a comparable basis in 2006 suggested that the saving made by switching would be in the order of £115 per annum.

The savings on dual fuel deals are likely to be a significant driver in overall electricity switching rates. Under present arrangements in the Channel Islands dual fuel deals appear to be unachievable within the present arrangements. Savings on electricity are this potentially lower, and the ability to meet any switching threshold (on cost) more difficult to achieve as a consequence.

Within this average, variations will occur – for the "fuel poor" the savings required will be lower, whilst a number of more affluent classes may be insufficiently concerned about the cost of electricity that potential savings provide little meaningful incentive to change retailer.

4.3.3 Credible and Willing Competitors

In order to have competition, there needs to be (at least one) credible competitor. This needs to be a company that has the expertise, cost base and willingness to compete. Credible competitors are likely to be limited in smaller markets, especially where an incumbent has a long established position and the ability to price so as to deter new entry. Thus, the likelihood of credible competitors entering the market is linked to the regulatory/legislative regime, the size of market, and the ability to make savings. In addition, there is a need for potential new entrants to be willing to compete. Following experiences elsewhere, these could include existing utility

[42] Domestic Competitive Market Review, April 2004.
[43] Domestic Retail Market Report 2006.

companies such as Jersey Water or Jersey Gas. Furthermore, JEC indicated[44] that the CIEG regime provides for a non-compete agreement between GEL and JEC.

4.3.4 Effective Third Party Access

Third Party Access (TPA) is the term used to describe non-discriminatory (price and terms) access to natural monopoly transport assets. In the context of Jersey, this means that JEC would have to offer network access to competitors at the same price as it pays. This is likely to also require the effective business separation in the incumbent utility between generation, supply and transport functions.

Strongly linked to the point on TPA arrangements, is the question of effective business separation. This is important in two regards:

- ensuring non-discrimination in pricing; and
- confidentiality of customer data.

4.3.5 Risk Allocation

This section relates to the ability to determine customers' take (as metered) and reconcile against the wholesale market position of the retailer.

Wholesale electricity markets work on relatively short pricing periods (generally 30 or 60 minutes) to reflect the time varying costs of generation. It is important to recognise that, by any standard metric, electricity markets are highly volatile. This volatility is a function of (a) the cost of utilised generation, (b) the pricing methodology – often the bid price of the marginal generator – i.e. the most expensive generation required to meet demand. The cost of generation is a function of the type of generation, the availability of generation and the level and rate of change of demand.

Hence, wholesale electricity purchase costs vary by the half-hour, and metering intervals are consistent with this timescale. So, at a wholesale level it is possible to match supply and demand, with a price. Domestic meters do not typically[45] work on the same time interval – at best operating on set peak / off-peak periods. This gives rise to potential risks if a supplier buys on an hourly price, but can assess how much a customer took over a period of time, but not in which periods it consumed it. In short, was a specific customer consuming when wholesale prices were high or low?

Whilst suppliers in total will pay for all the energy at a wholesale level, it is not straightforward to determine what proportion was consumed by each supplier's customers.

In principle there are two approaches:

[44] "*There is a restriction on trade within the CIEG Agreement between Jersey Electricity and Guensey [sic] Electricity, but this could we think be easily challenged under Competition Law.*" Extract from Mike Liston's e-mail to the Assistant Director for Environmental Policy 22nd December 2006.

[45] GEL is presently introducing an leading edge Automated Meter Reading (AMR) scheme for all customers that should, once fully operational, provide half-hourly metering data for every customer in Guernsey (see http://www.electricity.gg/publicinfo/News/viewnewsstory.asp?NewsID=69 for details). Presently JEC have no plans to adopt an AMR scheme.

- meter all competitive customers on an interval basis so that hourly 'customer take' can be matched with hourly wholesale prices; or

- some form of non-interval metered solution where customer demands are profiled to determine each supplier's share in that hour.

4.3.6 Cost Allocation

Retail competition requires that there is an equitable allocation of the costs of retail competition in such a way as there is no inherent cost barrier to individuals switching supplier.

The costs of retail competition can either be allocated to those who choose to take competitive supply, or allocated across the entire eligible customer base. The allocation of costs only to customers that switch may well create a barrier to switching. Certainly when Offer[46] considered this matter, it was concluded that allocating the direct costs of switching to only customers that switched in the 1994 market (for 100KW maximum demand customers) effectively locked out customers with a maximum demand below 300KW as the costs of switching would exceed potential savings. The decision was thus made to allocate all the costs of opening that market to competition across the whole eligible customer base. A similar decision was made in the UK in 1998, where all the costs of introducing full retail competition were allocated across the contestable customer base.

Regarding the level of these costs, the OUR[47] considered the costs of introducing competition (at a wholesale and retail level):

> *"The costs of implementing retail competition could vary greatly depending on the solution adopted. Including the costs of implementing Generation Option 1(b), the DG's high level estimation is that the cost per customer (annualised over 5 years) would range between £44 per customer per annum for a fully metered solution, to £13 per customer per annum for a simple profiled solution".*

4.4 Section Summary

This section considered the objectives of retail competition, the options for how it might be structured, and the success criteria that need to be in place to achieve it. Section 3 considered similar issues relating to possible wholesale competition models. Section 5 will now assess how each of these models might relate to the Channel Islands market.

[46] Offer in 1992/3 – note Offer is now Ofgem.
[47] OUR 02/35 – note that the OUR considered the costs of a wholesale market and retail market implementation together, as it was not considered viable to introduce supply competition in the absence of a wholesale competition. This linkage is picked up in the context of Jersey, and a joint Channel Island model, later in this report.

5 Identification of Options

In section 3.3, d&i outlined four options for increasing the efficiency of the electricity sectors in Jersey and Guernsey through the integration of the wholesale sectors on each Island. These were:

1. maintain the existing level of collaboration (sub-section 3.3.1);

2. increased (formal) co-ordination of planting and investment decisions (sub-section 3.3.2);

3. creation of a competitive wholesale market (sub-section 3.3.3); and

4. the creation (in some way) of one merged entity (sub-section 3.3.4).

In sub-section 4.2, d&i set out the options for retail competition:

1. maintain the existing supply monopolies on each Island (sub-section 4.2.1);

2. introduce limited competition – for the largest customers (sub-section 4.2.2); and

3. introduce full retail competition (sub-section 4.2.3).

In addition to the various competition options set out above, it should also be noted that **regulation can act as a surrogate for competition**. Thus, the monopoly options could produce different outcomes for stakeholders, depending on the regulatory model adopted.

Finally, an assessment can be made on some of the above models being adopted on a Jersey-only basis, or on a combined Channel Island basis.

5.1 Available Options

The number of options available is more limited than the number of potential combinations suggests. This arises because the viability of the retail competition options discussed is strongly linked to the ability of competing suppliers to offer sufficient price savings by switching. Broadly, a competitive price advantage can arise in two ways:

1. a supplier can buy energy at a lower price than its competitor(s) and passes these savings onto customers which requires:

    a. alternative sources of generation to procure energy from. This could be from generation in the same market (consequently requiring either diverse generation ownership); and / or

    b. access to importation sources via importation; and / or

    c. a competitive wholesale market, and / or

2. a supplier can carry out the supply activities (customer service / billing / metering data collection / debt management) more efficiently.

If there is no ability for a competing supplier to source energy more effectively, it would need to carry out the retail function in a more cost effective manner. However, being more efficient in the provision of retail supply services may not be a sufficient basis to encourage customer switching. This arises because the overall costs of the supply function are less than the monetary saving required by customers to switch – see section 5.3.1 below.

Clearly, a supplier could compete on the basis of lower energy purchase costs *and* effective supply business management and offer savings based on efficiencies in both these functions.

However, if it appears unlikely that the management of the retail function would derive sufficient savings to induce customer switching, the viability of retail competition rests on there being wholesale market competition in place as a precursor. Thus, it can be seen from the table below that d&i have assumed that, in the absence of wholesale competition, retail competition would not be a sufficiently viable option to consider in isolation.

Table 9 – Consistency of options

		Retail Options		
		No Retail Competition	Limited Retail Competition	Full Retail Competition
Wholesale Options	Existing arrangements	Y	N	N
	Formalised planning co-ordination	Y	N	N
	Competitive wholesale market	Y	Y	Y
	One merged entity	Y	N	N

5.2 Wholesale Savings

There is a broad scope of possible savings – not all would be realisable under all of the four options set out:

1. capacity build (deferring potential investment);

2. operation and maintenance of existing plant (bringing forward closure);

3. effective merit order dispatch – reducing direct operational costs, and longer term contract price costs;

4. reduced environmental impact (in Jersey) through reduced on-Island generation and/or reductions in on-Island generation across the Channel Islands - this may also include the potential importation of green energy (such as tidal) from Guernsey should it become available and commercially viable to import it to Jersey;

5. regulatory costs (assuming the competitive wholesale market requires limited oversight); and

6. centralisation of staffing:

    - finance functions;
    - senior management team;
    - HR; and
    - reduction of overall headcount in the generation business.

5.3 Scope for Retail Business Savings

In section 4.3.2 d&i set out the areas where a retailer has the potential to make sufficient cost savings to induce customers to switch to it, as a consequence of lower prices. Possible areas of savings that retailers can offer are (a) reduced costs in operating the retail function, and (b) reduced input costs – essentially the purchase cost of electricity.

The potential for savings in each of these areas is assessed in turn.

5.3.1 Operational Costs

The OUR[48] estimated that the operational costs of GEC's supply business in 2002 were around £33 per customer (off a customer base of c22,000 customers) – giving a cost base of around £726,000 p.a.

Regarding the ability of other potential electricity suppliers to compete, d&i notes that the OUR[49] calculated that:

> *"….the **incremental** retailing cost, plus a margin or return to a new entrant, could result in a retailing price from a new entrant as low as £10.00 per customer. That assumes that an existing retail base would be leveraged……..and that only certain cheap to serve customers were targeted".*

This assumption relates to the new entrant being (a) an existing supplier already operating in a different geographic market, or (b) an existing supplier of product within Jersey with service synergies, e.g. gas. There is no indication in the report as

[48] OUR 02/35
[49] OUR02/35 "Review of Guernsey's Retail and Generation Electricity Markets" (Nov 2002)

to the base number of customers required to make this figure achievable as there is no assessment of the fixed costs of retailing.

d&i also notes that there is considerable expenditure within the GEL[50] accounts regarding "Regulatory costs" – these amount to £677,000 in 2006 (of which £447,000 was on external resource costs), up from £510,000 in the year ending 31 March 2005. There is no split of regulation costs across generation, supply and transport activities. However, there must be a possibility for competitors to incur significantly less costs than those that GEL currently incurs. The cost of regulation was, in 2006, around £30.00 per customer. A recent review carried out by the UK National Audit Office into the regulatory model in Guernsey stated that the costs estimated by GEL to meet the OUR's demands must "be treated with some caution[51]".

Whilst the OUR assessment dates back four years d&i has been unable to find similar assessments carried out on comparable utilities (essentially small Island networks). It is also the case that there is insufficient data in GEL's latest published accounts to replicate the analysis. JEC's accounts equally provide no basis for any such assessment. In order to gain at least an initial assessment of the costs of the retailing activity in Jersey, we made enquiries of JEC.

JEC commented that:

> *"Further to your telephone enquiry yesterday, our cost per customer of the Retailing activity is approximately £45 per annum, excluding capital depreciation. The split is approximately 50% Metering, 32% Customer Care (which is probably a considerably more comprehensive service than provided in Guernsey and therefore more costly) with the balance being Billing and Cash Collection costs."*

Under any form of retail competition, metering services would most likely fall under the distribution business function – i.e. all retailers would be exposed to the same cost. Consequently, the customer service/billing cost of around £23.00 per customer/per annum represents the potentially competitive element of the cost base. d&i considers that this information is substantially in line with the data that the OUR reported on in Guernsey.

> ***A broad assessment on the costs of electricity retailing across the Channel Islands is that they are in the order of £20-£30 per customer per year. Assuming the OUR is correct, and a new entrant into any market could provide these services (to at least some customers) for £10.00 per year, the potential savings to customers would only amount to £10.00 - £20.00. d&i does not consider that this level of realisable saving would provide sufficient incentive for customers to switch. Consequently d&i believes that a competitive wholesale market is a requirement to underpin any retail competition***

[50] Guernsey Electricity Report and Accounts 2005/06 page 33
[51] UK NAO Review of Commercialisation and Regulation in the States of Guernsey, Billet X, 2006

introduced[52]. Thus, a significant proportion of savings would need to be delivered from electricity purchase costs.

5.3.2 Wholesale Purchase Costs

The potential for saving arises if one retailer can buy at a sufficient discount to provide sufficient cost savings to end customers as a consequence.

This requires price differentials to be seen at a wholesale level. This could result from purchasing from different generation sources with different cost bases. One example of this would be whether a competitive supplier could access generation in France (on the Powernext[53]) and sell it into Guernsey across the interconnector[54]. Alternatively, one supplier may have hedged its forward position out, whilst another has spot market exposure. If these prices diverge, the basis of different wholesale prices to customers exists. If, all suppliers have access to one price (say all trades are referenced to the Powernext day ahead price) the scope for different wholesale purchase cost bases is more limited.

Quantification of potential cost savings in a competitive environment (one where JEC, GEL and potentially others compete) is difficult to conduct on the basis of the information available to us. Any assessment would require both a full disclosure of the cost base of GEL and JEC at a generation level, in addition to indicative EdF prices.

d&i asked JEC to provide details on the current and forward prices for JEC's purchases, from EdF in €/MWh and estimated production costs in (€/MWh) for each of its plant (along with the data request for the data presented in Table 7) and requested that they explicitly mention those prices that are fixed and those that are forecast. JEC responded that:

> *This is commercially sensitive information. But a guide can be obtained by looking at the base load prices at www.powernext.fr. The average price being paid by CIEG is roughly the average market price across the last 12 months. The commercial contract between CIEG and EdF applies coefficients to these prices based on time of day and season.*

Furthermore, JEC did not provide any estimated production costs for either its plant or GEL's. In the absence of such (or similar data) d&i cannot undertake an assessment of the scale of any benefits. This would require an assessment of any inefficiencies at a wholesale level that could be assumed to be competed away in a competitive market.

As noted in section 5.2 above, JEC was asked for an assessment of potential efficiency savings at a wholesale level, and believed that it

[52] For completeness, this conclusion is also based on an assumption that regulatory costs in the order of those reported by GEL are (a) not attributable to retailing, (b) unlikely to provide a sound cost basis against which assumed savings could be calculated.
[53] French electricity forward market.
[54] We recognise that this is not presently a feasible option for a number of reasons – however the desire is to demonstrate that one retailer needs to have access to a cheaper source of energy – either because the incumbent cannot access that energy, or because I has just entered into lower priced commercial arrangements.

lacked the data to quantify the extent of the potential efficiency gains under a combined utility. Our assumption is that competition would produce a similar price outcome to a combined utility subject to external efficiency drivers. Thus, d&i is in the same position as JEC in being unable at this time to quantify such savings.

5.3.3 Retail Competition Success Criteria

In section 4.3, d&i identified a number of success factors for the introduction of retail competition, in addition to a threshold level of cost savings to customers. These other success criteria are briefly assessed in below:

A critical mass of customers – d&i has been unable to locate any information from comparable jurisdictions[55] that would give an indication of the number of customers required to support a new entrant retailer. Our opinion is that any new entrant retailer would have to build on an existing market position in Jersey or Guernsey. This would mean that they could leverage existing billing and customer support services. This narrows down the number of potential competitors. Based on an existing market position, d&i does consider that attaining a critical mass of customers would be a barrier to entry. For example, if a retailer made 4% return on customer sales (at an average of £500 per customer per year) it would create revenue of £20.00 per customer. Assuming 10,000 customers, this only creates a profit of £200,000 per annum.

Credible competitors - it is necessary for any new entrant to have the ability to compete. This requires that they have the skills required to compete and a competitive cost base. Both Jersey Gas and Guernsey Gas compete on a fuel source basis – (for example in Jersey the competition to install gas or electricity heating in new developments), but it is not clear that they have a desire to compete in electricity retailing. GEL and JEC have the skill base to compete with each other, but the nature of the CIEG arrangements does not necessarily provide a sound basis for competition.

Effective third party access arrangements - There is presently no scope for third parties across the CIEG (see section 2.3.1.3). There are sufficient access arrangements within Jersey and Guernsey to provide a basis for competitive retailing, although the transparency and equity of such arrangements is limited. Consequently, any retailer negotiating access may be left referring the terms to the JCRA as the only route to ensure that they were non-discriminatory. The timescales involved in any such determination may themselves prove to be a barrier to entry.

Risk allocation arrangements - If customers taking electricity from a competitive retailer are interval metered then their take (each hour or half hour) is determinable and the cost of the retailers purchase can be determined. This may be from a market price, or through a bilateral arrangement – noting that any bilateral arrangements

[55] It is worth noting that, in terms of a critical mass of customers, within the UK there has been consolidation of retail businesses (all of which own generation stations as well) such that there are only 6 main retailers in the UK (Eon, Edf, RWE, Centrica, Scottish Power and Scottish & Southern). Furthermore, Eon and RWE have recently exited the smaller RoI energy market.

require supporting arrangements for imbalances[56]. Such arrangements do not exist at present and would need to be developed in some form to support retail competition.

Additional risk allocations arise if there are non-metered solutions to support retail competition (as described in section 4.3.5). Profiling solutions also incur significant cost – d&i has not undertaken an assessment of whether a profiled solution could be cost effectively applied and scaled to Jersey, or a Jersey-Guernsey market.

Thus, determining customer take under a retail competition option requires either interval metering or a profiled solution. Both have both set up and ongoing operational costs.

Cost allocation – allocating the costs of competition only to customers that switch may present a significant barrier to competition – notably if a pre-requisite for taking competitive supply. Allocating costs across the whole eligible customer base removes any such barrier to switching. However, if these costs are incurred, and competition does not develop, not only will customers incur unnecessary costs, but the incurring of such costs by Government and/or any regulatory body, would (rightly) be subject to scrutiny and potential criticism.

5.3.4 Competition Costs

The costs of introducing competition include changes to IT systems and associated business processes. In particular it is important to note that an "off the shelf" electricity market solution is not considered viable as utility companies need to integrate this arrangement with current business processes. In order to make even a high level assessment, there would need to be an appraisal of the detailed operation of JEC's retail and network functions which falls outside the scope of this assignment.

5.4 Conclusion

Having looked at how some of the options for wholesale and retail competition might apply to the Channel Islands, d&i's initial assessment is presented below.

1. **The existing arrangements (CIEG and the consequential OUR decision on GEL's retail monopoly) present significant barriers to the introduction of retail competition on a cross–Island basis until 2012.**

2. **The potential exists to introduce retail competition in Jersey alone, but in the absence of competition in Guernsey, there would be (a) a lack of reciprocity of arrangements, and (b) potentially a lack of credible competitors.**

3. **There are insufficient cost savings in the retail function alone to induce customers to switch. Retail competition would thus be technically possible, but offer no realistic possibility of customer benefit, in the**

[56] NB If a retailer has a contract to buy 20 MWh of generation within a one hour period; its customers may take (a) less than 20 MWh, (b) exactly 20 MWh, or (c) more than 20 MWh or demand. If customers do not take exactly the 20 MWh then the retailer is essentially selling its surplus or buying to remove the deficit. This requires a determination of who is the counterparty to that transaction, on what terms and at what price.

absence of wholesale competition. There is insufficient data available to determine the level of cost savings that could arise at a wholesale level.

4. **A cross-Island wholesale market arrangement may allow for the OUR to re-visit its decision on retail competition in Guernsey. In the absence of a wholesale market, a retail market across the Channel Islands is (a) subject to a regulatory barrier, and (b) there would be insufficient potential for cost savings to induce customers to switch.**

The remainder of the report considers the potential for efficiencies at a generation / planning level and in regulatory functions. If the conclusion of the Policy Review is to move forward in assessing a cross-Island generation market then there may be a sufficient basis for a further consideration of the potential costs and savings. However, this would need to be based on an assumption that GEL and JEC would compete in each other's jurisdictions and d&i were not asked to explore the strategic acceptability of this option.

6 Regulatory Integration

As noted in the Section 2.2, the regulatory models differ between Jersey and Guernsey.

The scope of the assignment included a consideration of whether there would be efficiency savings if regulation was undertaken on a cross-Channel Island basis. Whilst this question needs to be addressed, d&i believes that there are two further questions that require consideration:

1. To what extent do any integrated arrangements require changes to the regulatory models to support them? and,

2. Can regulation be an effective surrogate for competition in delivering efficiency benefits?

The remainder if this section addresses these three questions in turn. In section 7, where d&i assesses viable options for integration, comments on any changes to the regulatory regime(s) to support that option are provided.

6.1 Regulatory Efficiencies

The JCRA commented[57] that there is a developing relationship between the JCRA and the OUR. This is presently limited to telecoms.

In the absence of a joint market, or one entity, the roles and responsibilities of each regulatory body differ markedly. It is likely that the only areas of potential saving would be in sharing the costs of external support and the sharing of intellectual capital. The scope for this is likely to be less than that presently being developed in the Telecoms sector.

If there was a joint market, or one entity, possible areas of savings could extend to staffing and accommodation costs – in addition to sharing the costs of regulating the one market, or consultancy and intellectual capital in regulating one company in two jurisdictions. Regarding staff and accommodation costs:

- Staff:
    - the regulatory task may well be more complex, not less so, in any combined market or single company scenario;
    - for the JCRA, there would be an extension in its role – as it would probably take on industry-specific regulation;
    - there would be significant up-front effort in establishing any joint regulatory framework and regulatory approach; and

[57] Meeting with JCRA 24th November 2006

- the joint market would be a part, but not all, of either regulator's overall remit; and

- Offices:

  - it appears likely that an on-Island presence would continue to be required in each jurisdiction, although this would require more detailed investigation.

An initial assessment is thus that regulatory costs are unlikely to fall. d&i also notes that the cost of regulation includes:

- direct costs (largely consultancy) incurred by regulatory bodies, and internal costs (staff and office); plus

- direct and indirect costs incurred by regulated companies.

An alternative model could be where the States of Jersey "outsource" the regulation of JEC to the OUR or any other similar body. However, d&i considers that this would require the States of Guernsey's agreement given the strict framework and statutory duties that fall onto the Director General in Guernsey.

6.2 Required Regulatory Changes

Of the models assessed, d&i considers that the "status quo" and increased co-ordination options would not require any changes to be made to the regulatory arrangements – Island-specific regulation would be a viable model. However, d&i considers that either a competitive wholesale/retail market, or a merger of the existing electricity companies into one, would be best supported by changes in the regulatory arrangements.

6.2.1 Wholesale Competition

Under a competitive wholesale market, it would be appropriate to have arrangements that ensure that there is no distortion to competition within the wholesale arrangements. This would require;

- that the fundamentals of competition law are aligned – for example non-discrimination provisions, the requirements for open third party access to transport infrastructure;

- a separation of the transportation business and its costs – this would be necessary to ensure that generation was charged a validated, transparent price for network access. This is necessary to ensure that in any market, generators price their product on the basis of their actual cost base. This prevents market distortion (facilitated through cross subsidy);

- that there are no anti-competitive provisions such as "non-compete" agreements etc;

- each regulator presently has Island-specific jurisdiction. Any cross-Island market would by its nature be multi-jurisdictional. In Ireland (where the electricity markets of the Republic and Northern Ireland are combining into the Single Electricity Market[58]) there are presently two regulatory bodies. Under the future combined market, the intention is to (supported by new laws and a inter-governmental treaty):

    - license participants within their own jurisdiction;

    - create a joint regulatory panel to deal with wholesale market issues.

It is also likely that Guernsey would need to amend the OUR's remit, which presently requires the OUR to ensure efficient pricing for customers in *The Bailiwick of Guernsey* – not for efficient pricing in any wider Channel Island market.

6.2.2 Retail Competition

Regulatory arrangements need to be sufficiently robust to protect new entrants from anti-competitive pricing. In addition to the issues of non-discrimination and cross subsidy raised above, it would also be necessary to:

- ensure adequate protections for sellers (generators) against retailer default i.e. where retail competition exists, there needs to be specific arrangements to both:

    - to ensure that generators are protected from retailer default; and

    - to ensure that arrangements (commonly referred to as Retailer of Last Resort) arrangements are in place to protect customers in the event of their supplier no longer being unable to continue trading;

- ensure adequate protections for new retailers against incumbent predatory pricing; and

- customer service standards that all retailers must provide (e.g. minimum telephone service open from 0800 to 1800, large print tariff leaflets for partially sighted customers) to ensure all retailers offer common basic services, and do not achieve "efficiency" by cutting service levels.

In addition there would need to be changes to enabling legislation, and / or a facilitating regulatory environment:

- in Guernsey, the OUR has ruled out retail competition in Guernsey in the short term, granting GEL a sole retail licence until 2012[59] - there is a re-opener to this, as the OUR stated that it would re-consider the viability of supply competition under specified conditions – see section 2.3.2.2;

[58] See http://www.allislandproject.org for further details.
[59] OUR 02/35 - http://www.regutil.gg/docs/our0235.pdf.

- in Jersey, there would need to be enabling legislation to allow for retail competition and a body appointed to oversee this; and

- both islands would also need to put in place the procedures for issuing retail licences.

6.3 Efficiency Via Regulation

As noted in earlier sections, the regulatory model adopted in Jersey differs from that adopted in Guernsey. The JCRA responsibility is to consider any complaint made to it under the provisions of the Law[60].

Regarding the protection that customers get under the existing regime in Jersey, and pricing to customers, JEC stated[61]

> *Our pricing behaviour is influenced in several ways:*
>
> - *By the presence of competition in the energy market in Jersey, where oil, gas and electricity compete for share in the new-build market. The commercial premises market has been growing rapidly in the past two or three decades as the Financial Services sector has grown to represent two-thirds of the economy. The domestic property market has also grown at high pace for the past 15 years. Reputation for fuel cost efficiency is as important a competitive advantage as capital cost effectiveness for the developers, in winning share of these energy markets.*
>
> - *By the existence of the Competition (Jersey) Law 2005 which through the powers granted to Jersey Competition Regulatory Authority aims to prevent anti-competitive behaviour such as the abuse of market power.*
>
> - *By the threat of direct competition in the electricity market in Jersey We aim to keep electricity prices low enough to disincentivise market entry. We achieve this by competitive power purchasing at the European wholesale power market price (Powernext), currently from our supplier Electricité de France; by ongoing business efficiency measures (we have reduced our headcount by 45% in the past decade) and on tariff restraint. Household electricity prices are generally below the UK and European averages and at present are 17% lower than in Europe and 30% lower than in UK; 13% lower than Guernsey and 33% lower than Isle of Man. See notes attached at (1) compared with heating oil and gas in Jersey, the attached graph demonstrates our tariff restraint which last year prompted us to issue a profits warning attached and again this year (2007) will involve a significant reduction of energy business profits. Return on assets employed in 2006 was 5% and is typically below 7%.*

[60] Competition (Jersey) Law 2005
[61] E-mail to Assistant Director for Environmental Policy 8/12/2006

- *By the cultural influence of the States of Jersey as controlling Shareholder; historically, the States of Jersey held the majority of voting on Jersey Electricity's Board and always held the Chairmanship[62]. Although in very recent years it has relinquished its positions on the Board (because of a potential conflict of interest between the role of government representative and that of a director whose duties were to the Company only), the legacy of a "public interest" culture remains in the organisation.*

The regulatory model adopted by the OUR in Guernsey provides an external surrogate for competitive pressures. This is supported by the conclusions of the NAO report into regulation in Guernsey. Under the OUR model, the objective is to place incentives on the regulated entity to reduce prices (and thus drive down its internal costs) to the level that would exist in a competitive environment. This is not the current Jersey model.

[62] The Electricity (Jersey) Law 1937 says that the States of Jersey appoints the JEC Chairman.

7 Assessment of Viable Options

In section 5, d&i considered how the various options for wholesale and retail competition might apply to the Channel Islands and concluded that retail competition would be unlikely to be viable in the absence of a contestable market at the wholesale level – and even then there may be significant barriers to its effective introduction. Hence, it is our assessment that only the wholesale efficiencies are worth investigation further at this stage. In section 6, d&i discussed the possibility of regulation being used to artificially create the efficiencies that might be gained from any of the competition models. d&i's assessment is that this is a viable consideration to include alongside the options for wholesale competition.

In this section, d&i analyses the above options in more detail, and consider the potential efficiency savings that could arise under each of the options on a Jersey-Guernsey basis.

Whilst all the options set out are viable, there are significant differences in:

1. compliance with the objectives of the States of Jersey
2. the potential costs of implementation;
3. increased customer benefits;
4. barriers to adoption (commercial, legislative, stakeholder); and
5. enabling steps required, including any regulatory changes.

Within Table 10 below a high level assessment is made against the existing market, and assessments are relative to the existing arrangements. Note: not all criteria would be equally weighted.

Table 10 – High Level Assessment

Wholesale Models	Existing Collaboration	Enhanced Regulatory Collaboration	Formalised Co-ordination	Competitive Wholesale Market	One Firm
Meeting States of Jersey's objectives	Medium	High	High	High	High
Potential costs of implementation	Low	Medium	Medium	High	High
Increased benefits to customers	None	Low	Medium	High	High
Barriers to adoption	None	Low	Medium	High	High
Enabling steps required	None	Medium	Multiple	Multiple	Multiple
Section Ref:	7.1	7.2	7.3	7.4	7.5

7.1 Existing Collaboration

7.1.1 Description

Under this option, the existing monopolies on each Island would continue[63]. The CIEG arrangements would continue in their present form and purchases of most of Jersey's electricity would be from France. Both Jersey and Guernsey allow for new entry in generation as a route to introducing competition.

7.1.2 Meeting States objectives

The existing arrangements are successful in many respects. It can be argued that the level of political independence of JEC has enabled it to operate in a way that broadly balances JEC's commercial drivers, and delivers reasonable prices to customers.

7.1.3 Barriers to adoption

None.

7.1.4 Enabling steps required

None.

7.1.5 Conclusion

By 2012, three significant events will have occurred. Firstly, the existing CIEG contract which ties purchases into EdF will fall away, allowing purchases from other parties in France. Secondly, the existing retail supply monopoly in Guernsey will lapse (if not overturned in advance of that date). Thirdly, the third Jersey-France interconnector would be commissioned / imminent. If this "no change option" is favoured, then the possibilities for alternative arrangements could be re-considered prior to this date.

7.2 Enhanced Regulatory Collaboration

7.2.1 Description

As in section 7.1 above, under this option, the existing monopolies on each Island would continue, and the CIEG arrangements would continue in their present form. However, as a means of driving efficiency in the absence of any formal introduction of competition, regulation in the style of the OUR would be introduced in Jersey to allow the JCRA to regulate the electricity market with high levels of collaboration across islands.

The extent to which this option might meet States objectives, the barriers that might exist, and the enablers required, are discussed in detail in section 6 of this report, hence are not repeated here.

[63] Noting that only changes in Jersey are within the influence of the States of Jersey.

7.2.2 Conclusion

In addition to the conclusions presented in section 7.1.5, d&i observes that the States of Jersey would need to secure the States of Guernsey's agreement to this option.

7.3 Formalised Co-ordination

7.3.1 Description

This option would involve creating a harmonised approach to generation planning across Jersey and Guernsey. In essence, this would involve the stakeholders agreeing that a level of transmission linkage, and planting, would be the most optimal across the Islands. It would require an acceptance that existing assets are rationalised, remaining plant adequately rewarded, and new investment logically located and rewarded. This would include paying costs of energy, capacity and carbon on a pre-agreed basis.

7.3.2 Meeting States objectives

This would provide for increased efficiency and thus customer costs should be consistent with the States of Jersey's low inflation objective. Furthermore, optimised cross-Island plant should allow for La Collette closure as per JEC's assessment. Finally, this option would be likely to reduce Jersey's carbon footprint further.

7.3.3 Barriers to adoption

The combination of Guernsey's n-2 policy and the single link between the islands gives rise to a requirement for on-island planting on Guernsey. Therefore the most likely outcome of this policy would be to have on-Island generation predominately on Guernsey. However, the increased carbon footprint may not be universally welcomed by all stakeholders in Guernsey as there will undoubtedly be resistance to Jersey "exporting pollution" especially given Guernsey's stated objective of "*reducing the Island's carbon footprint*[64]". Finally, this option would be potentially difficult if capacity requirements (and location of capacity) are subject to individual jurisdictional requirements / policies.

7.3.4 Enabling steps required

In order for the full benefits of this option to be realised network enhancements will be required to reduce the restriction on exporting power from Guernsey to Jersey (see section 3.2 for details). There would need to be joint planning between JEC and GEL to determine the appropriate mix and location of on-Island planting (e.g. fast start, slow start plant) with some public reporting[65]. In conjunction with this planning, formal agreement on the rewards to the providers of capacity and energy will be needed to ensure that both JEC and GEL are fairly compensated for the services each provides.

It is likely that both governments would need to issue policy statements (perhaps captured as formal "States Directions") to capture the agreement to harmonise the

[64] States of Guernsey Government Business Plan, Billet XIX 2006 Priority 10

[65] GEL prepares and publishes a "Statement of Opportunity" in accordance with Licence Condition 33.1 covering similar matters (see http://www.electricity.gg/publicinfo/statementofopportunity.asp for details).

electricity sector across the Channel Islands and the formal protocol for cross-Island support. In particular the States of Guernsey may need to review its instructions to the OUR if this option were taken forward.

7.3.5 Conclusion

d&i observes that, whilst this option would not require formal changes to legislation, it would require the agreement of both governments. d&i observes that the States of Jersey may not be able to secure the States of Guernsey's agreement given the issues regarding pollution / carbon footprint transfer and indeed it unlikely itself to want to 'export pollution' given its commitment to best overall environmental practice.

7.4 Competitive Wholesale Market

7.4.1 Description

This option would involve opening up both Jersey Electricity and Guernsey Electricity generation capability to competition with each other across the Channel Islands, and potentially to third parties – i.e. new entry generators.

7.4.2 Meeting States objectives

This option should deliver production cost reductions and pricing efficiency. Whilst it is outside the scope of this assignment to produce forwards pricing projections for any speculative Channel Island electricity market, d&i notes that the market price outcomes may not be consistent with States objectives regarding inflation as prices could be expected rise at time of shortage. This option should allow JEC to make the plant closures it seeks as more formal reliance on GEL's plant would be secured, and hence Jersey's carbon footprint would be reduced in line with environmental objectives.

7.4.3 Barriers to adoption

There are some significant barriers to the implementation of this option:

- the design (and subsequent implementation) of electricity markets is not a trivial exercise - there are major policy choices to be made on the form and nature of trading;
- it would be costly to implement (there are both legal, IT and business process impacts) and the allocation of these costs across the small number of within the Channel Islands could increase prices in the short to medium term;
- electricity markets are complex and there may be a requirement to expand existing capacity or buy in expertise.;
- a regime would be need to control the scheduling and dispatch of plant;
- a high level of regulatory harmonisation would be needed to avoid discrimination and secure the effect operation of the marker;

- third party access costs would need to be to be transparent across both islands supported by detailed regulatory accounting (this happens to some degree in Guernsey at present);

- the limited interconnection between the islands may need reinforcement (especially for flows from Guernsey to Jersey) which would require funding and the allocation of these costs (typically this would be in proportion to the benefit accruing and GEL may argue that JEC should pay the majority of costs);

- whilst the market could be created, the scope for vibrant competition is limited[66] given the size of the market and as such the market would give JEC and GEL the scope to exercise of market power (although they may chose not to exercise it); and

- the current long term CIEG regime would appear to limit the scope for additional trading before 2012.

7.4.4 Enabling steps required

Firstly, a scoping exercise would be needed including (a) forward price projects; (b) a high level cost / benefit assessment; and (c) an outline of the chose market design. Following this scoping exercise, the market rules would need to be developed prior to the subsequent IT implementation. There would also need to be a single market operator entity created to control the market. Within Jersey the JCRA would need to be given an explicit regulatory role for electricity and the OUR's remit adjusted to account for the wider Channel Island market. d&i would expect that this option would need to be supported via a formal treaty between the States of Jersey and States of Guernsey.

7.4.5 Conclusion

This is the international "standard approach" and consistent with various EU directives, however, further work would be needed to confirm that this option will deliver net benefits given the scope for significant implementation costs. Furthermore, the allocation of benefits between stakeholders in Jersey and Guernsey may be problematic.

7.5 One Firm

7.5.1 Description

Under this option it is assumed that one company is created to own and control the electricity companies on Jersey and Guernsey. This firm would internalise the costs of the business effectively and reduce costs. It would get some economies of scale and would run a combined portfolio. It would be necessary to ensure that these economies were passed onto customers. The model's impact would not be determined by how the entity was created – merger or the acquisition of GEL or JEC of the other.

[66] There is very limited scope for third party new entry given the planning issues and availability of suitable land within both islands.

7.5.2 Meeting States objectives

This option would appear to provide for increases in efficiency across the Channel Islands and hence lower prices, however, it is not clear that the benefits would fall to Jersey customers and it is not inconceivable that customers in Guernsey gain the majority of benefits from this option.

7.5.3 Barriers to adoption

The main barrier to any merger of JEC and GEL is likely to be political acceptability in the Channel Islands. The NAO recently recognised that a merger of GEL and JEC would result in "a number of risks and drawbacks[67]". The sort of concerns mooted included Guernsey losing influence over a key utility, Jersey becoming dominant, undermining Guernsey's position, and GEL being forced to shed staff.

Nevertheless, the NAO recommended that the potential for a merger was worth exploring by the States of Guernsey, as it "would bring clear efficiency savings" However, within the covering report to the States, the response was:

> *"Whilst the possibility of merging the … electricity operations of Guernsey and Jersey at some time in the future…. should not be discounted, neither of the [Treasury & Resources and Commerce & Employment] Departments consider that such a review should be given priority at this time."*

In addition, it is possible that the States of Guernsey would mandate tariff equalisation across the Channel Islands which could result in price increases in Jersey.

Finally, this would require further interconnection between Guernsey and Jersey which may not be cost effective compared with enhanced planting on Jersey.

7.5.4 Enabling steps required

Any merger / takeover will involve JEC's and GEL's shareholders and, as such, these activities are considered beyond the remit of this review. However, regardless of the mechanism for achieving a combined entity, any take over or merger would require alignment of the regulatory environments in the two Islands.

7.5.5 Conclusion

There would need to be regulation alignment and a move towards specific efficiency driven regulation in Jersey (i.e. change in role of JCRA) under this option. However, the political issues in Guernsey regarding this option would appear to be insurmountable.

[67] NAO Review of Commercialisation and Regulation in the States of Guernsey

8 Summary

In summary this report has presented various options for the Channel Islands' electricity sector covering both wholesale and retail matters.

The report outlined various options that could be taken forward but no preferred option is recommended at this stage by d&i. It was not within the scope of this assignment to provide a final single answer to complex, nested, issues that involve major policy choices and trade-offs.

It is important to note that whilst the options presented are theoretically feasible and could deliver benefits to stakeholders in both Jersey and Guernsey there are significant issues to overcome. Specifically, there is some requirement for governmental collaboration on energy policy and a route-map for the resolution of these political issues would need to be developed.

d&i recommends that this report forms a foundation for the States of Jersey to consider the key issues and potential options within the current wider review of future energy policy.

Finally, it should be noted that this assignment has benefited from the data provided by JEC and JEC's positive contribution.

Appendix A JEC Tariff Comparison

For the record, this appendix presents verbatim JEC's comparisons for the "standard" 3300 kWh domestic customer. As such, the figures and notes contained therein have not been verified by d&i.

Table 11 – Tariff Comparison - September 2006

	Typical annual bill (£)	% differential
JEC	**329**	
Guernsey Electricity	**373**	**+13.4%**
Manx Electricity	**438**	**+33.1%**
Average across Europe in 2005	**385**	**+17.0%**
UK	**428**	**+30.1%**

Notes:

1. Jersey prices rose by 9.7% from 1.1.06 and a commitment given not to have a subsequent rise for 2006.

2. Guernsey data from their website (www.electricity.gg). Prices rose by 5.5% on 1.1.06 and 5% on 1.4.06 i.e. 10.8% cumulatively in 2006.

3. IoM data from website (www.gov.im/mea). IoM prices are 33% higher than Jersey but would be even higher had the IoM Government not picked up the standing charge cost for customers of £42 p.a. from September 1st 2005 i.e. a subsidy has been created for consumers.

4. UK comparison is for an electricity only customer on the standard Centrica/ British Gas tariffs (largest UK supplier) and is an average of the charges offered to the customers over the 14 regions in the UK (www.house.co.uk). Prices have risen in March 2006 by 22% and in September 2006 by 9.4% i.e. by a cumulative 33% in 2006 to date.

5. European comparisons from work performed by an external consultancy (IPA) and compares Jersey to an average % differential against nine counties. Comparisons are comparing European and Jersey prices at 2005 levels (no data for 2006 yet available).

6. VAT charges of around 5% are embedded in the UK, European and IoM comparisons.

7. The average bill shown above is illustrative as a typical Jersey customer actually uses more electricity because of our higher share of heating load than the UK. The figures however are still robust as we have merely re-based a typical Jersey domestic customer back to a UK/European counterpart.

Appendix B Interactions

On 23rd and 24th November 2006, d&i personnel visited Jersey and held a series of face to face meetings. In addition, d&i made contact with a number of other stakeholders.

Table 12 – d&i Interactions

Event	Organisation	When	Personnel
Meeting	States of Jersey - Planning and Environment	23rd November 2006	Louise Magris (Assistant Director for Environmental Policy)
Meeting	States of Jersey - Economic Development	23rd November 2006	Bevan Anthony (Executive Director) Colin Gibaut (Strategy Director)
Meeting	Jersey Electricity Company	23rd November 2006	Mike Liston (Chief Executive) David Padfield (Operations Director) Peter Cadiou (Managing Consultant)
Meeting	Jersey Competition Regulatory Authority	24th November 2006	William Brown (Executive Director) Rob van der Laan (Senior Competition Investigator)
Meeting	Jersey Gas	24th November 2006	Ian Wilson (Marketing Manager)
Tele-conference	Guernsey Gas	30th November 2006	Paul Garlick (Managing Director)
E-mailed Data Request	Jersey Electricity Company	Various	Mike Liston (Chief Executive) David Padfield (Operations Director)

Appendix C La Collette Closure – Peak Impact

During discussions with members of staff at the States of Jersey, d&i provided a high level summary of the total generation capacities and peak demands within the Channel Islands and how this relates to the agreed closure by JEC of La Collette power station. This example is included within this appendix for completeness. This is not a robust analysis of the entire impact related to the closure of La Collette rather it is intended to demonstrate the likely peak power flows. It should be recognised that modelling to validate this high level example was outside the scope of this assignment. In addition the operational costs are not presented and this doesn't consider the commercial / environmental considerations.

First, a number of assumptions are made:

1. the winter peak demand is assumed to be 150 MW for Jersey and 72 MW for Guernsey (see Table 6);

2. the CIEG capacities are assumed to be unchanged:

    - EdF → Jersey - 145 MW (55 MW + 90 MW);

    - Jersey → Guernsey - 60 MW; and

    - Jersey ← Guernsey - 25 MW; and

3. the plant capacity is 209 MW for JEC and 115 MW for GEL (see Table 7).

Now, consider a "worse case" scenario where at winter peak the 90 MW EdF cable is unavailable. In this circumstance, demand for electricity across the Channel Islands could be satisfied (assuming all other plant / links available):

- GEL would generate all 72 MW of its demand (from the 115 MW capacity); and

- JEC would import 53 MW (assuming 2 MW losses) from EdF and generates 97 MW (from the 209 MW capacity).

However, if La Collette diesel & steam plant had already been closed (reducing JEC's capacity by 135 MW) then:

- GEL would Guernsey generates 96 MW (from the 115 MW capacity) to meet the 72 MW Guernsey load and export a further 24 MW to Jersey; and

- JEC would imports 53 MW (2 MW losses) from EdF generates 74 MW (from the remaining 74 MW at Queens Road) and imports 23 MW (assuming 1 MW losses) from Guernsey.

NB this example may not be sustainable for an extended period given the limited fuel storage within JEC and GEL for their GT fleet.

Appendix D Glossary of Terms

In addition to the terminology presented in section 1.2, a glossary of key terms is provided with Table 13 below.

Table 13 – Glossary

Term	Description
1. n-1 / n-2	N-x is a system planning standard. It means that the system is planned to normal "n" minus the loss of x biggest supply input at system peak; in essence an adequacy standard assuming a number of contingencies (x). In Jersey this means that JEC plan to be able to maintain supply if the largest in feed (the second interconnector) is unavailable.
2. OUR	From http://www.regutil.gg: *The Office of Utility Regulation (the OUR) is the regulatory agency for the three utility sectors of telecommunications, post and electricity in Guernsey. Established in 2001 under the Regulation (Bailiwick of Guernsey) Law, 2001 and headed up by a States appointed Director General, Mr John Curran, the Office's functions are governed by legislation on each of the three different sectors.*
3. Security of Supply	This is the assessment of whether there is sufficient generation capability and a robust network such that reasonable demands for electricity can be met.
4. Single Buyer	A simple form of wholesale electricity trading where a single firm purchases all electricity from all sources rather than a market mechanism. This is utilised in certain jurisdictions e.g. the current regime in Northern Ireland is based on the single buyer model.
5. Merit Order Despatch	This refers to the arrangement where power plant are utilised in reverse price order i.e. cheapest first such that production costs are optimised. GEL presently has this requirement set out in Licence Condition 24 (http://www.regutil.gg/docs/our0204.pdf)