

# EXECUTIVE COUNCIL

## CONFIDENTIAL

**Title of Report:** Retirement Pensions Fund Actuarial Review 2011

**Paper No:** 51/13

**Date:** 26 March 2013

**Report of:** Financial Secretary

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### **Purpose**

1. To present the report from the independent actuary on the valuation of the Retirement Pension Fund as at 31<sup>st</sup> December 2011 and make recommendations to address the issues raised.

### **Recommendations**

2. Honourable Members are recommended to:
  - a) note the report received from the independent actuary;
  - b) approve the relationship between weekly pension and voluntary overseas contributions of 33.6% (based on current pension, £43.00/week);
  - c) approve no change to the residential contribution rate and that instead a more in-depth review is commissioned to explore the possibilities of a salary based contribution scheme;
  - d) approve that until such time that a review has been undertaken per c) that a subsidy equal to the difference between the voluntary and resident contribution rates is paid annually;
  - e) recommend to the Standing Finance Committee and 2013/14 Budget Select Committee that additional provision of £861,000 should be inserted in the Estimates in Fund Transfers;
  - f) approve a progressive increase in the retirement age of 1 year every 10 years from 2020.

### **Summary of Financial Implications**

	2012/13	Full Year
Operating Budget	861,000	861,000

## **Background**

- 4.1 Under the provisions of the Retirement Pensions Ordinance 1996 actuarial reviews must be carried out once every five years and reported to the Governor. This is the third review under the 1996 Ordinance. The 1996 Ordinance replaced the Old Age Pensions Ordinance 1952. Quinquennial reviews were also required under the 1952 Ordinance.
- 4.2 The last quinquennial review as at the 31<sup>st</sup> December 2006 was received from GAD in July 2008 however Executive Council asked for further recommendations regarding the reform of the scheme which were received and reported to ExCo in March 2009 (ExCo 54/09). At this point Executive Council approved an increase in retirement age to 67 by 2020 in line with UK policy.
- 4.3 In October 2011 ExCo (238/11) approved the policy to change the legislation to allow for independent actuaries to be appointed and the subsequent Bill (ExCo 07/12) was approved by the Legislative Assembly in February 2012. A tender process commenced in April 2012 resulting in the appointment of Punter Southall (in partnership with Callund Consulting) in August 2012.
- 4.4 Nick Silver from Callund Consulting visited the Falklands in November 2012 and presented initial findings to Standing Finance Committee. The final report for the Retirement Pension Fund valuation as at 31<sup>st</sup> December 2011 was received in March 2013. The full report is attached as Appendix A.

## **Summary of Quinquennial Review**

- 5.1 The 2006 report projected that the Fund could meet 50% of the cost of accrued liabilities i.e. 50% funded. The current (2011) review highlighted that this deficit in funding has increased and the Fund can now meet 33.2% of accrued liabilities. Another way of viewing this is that the Fund currently represents 15 times the outgoing from the previous year (17 at the time of the last review) and is projected to be exhausted by the year 2046.
- 5.2 The changes highlighted by the actuary between the two reviews were:

### Increases to the deficit

- Investment performance was worse than expected (1.9% as opposed to 4.8%) which has had a negative impact on the Fund;
- Investment returns for the future have been revised downwards due to the changed global economic conditions and life expectancies have improved. Both of these have had a negative impact on the underlying deficit projections;

### Mitigated by

- The number of contributions have increased due to “transitory”<sup>1</sup> contributors. This has had a beneficial impact on the Fund as contributions received are higher than projected under the 2006 review;
- Increases in the Standard Pension rate have been lower than inflation. Whilst this may be beneficial to the Fund it erodes the real income of the pensioners.

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<sup>1</sup> Primarily oil workers.

5.3 At the time of each review the actuaries recommend the contribution rate that is required to meet the actuarial cost of benefits. In the past FIG have agreed to cap the resident contribution rate by funding the difference directly as a subsidy to the Fund, however the FIG subsidy has not been increased in recent years when this gap has widened.

5.4 The independent actuary has therefore recommended the following:

5.4.1 To ensure the fund has sufficient contribution levels going forward to support future pension benefits;

- That the weekly contribution rates should be increased to 33.6% for voluntary contributors and 27.1% for resident contributions, of the current standard weekly pension rate<sup>2</sup>;
- That the contribution subsidy is increased to reflect the widening gap in the resident and actuarial contribution rate i.e. 6.5%, from £300,000 per annum to £644,000 per annum at the time of the review;

5.4.2 The Fund also has an underlying legacy issue which is contributing to the Fund being exhausted in 2046. To prevent this from occurring the actuary is also recommending one of two options (in addition to those above):

- Option 1 – FIG pays an additional annual contribution of £300,000 per annum (increasing annually by inflation + 1%) and that the level of this contribution is reviewed at each quinquennial review to ensure the Fund exhaustion is always at least 60 years away. This would extend the life of the Fund to 2070 but with ever increasing subsidies and the cost is therefore not predictable;
- Option 2 – the actuary makes the point that the only real way to make the Fund sustainable is to reduce the cost of the Fund. He therefore proposes a very gradual increase in pension age of 1 year for every 10 years commencing 2020. This will help to address the issue that the number of workers to pensioners is projected to decline from 5:1 to 1.5:1 over the 70 years of the review. Under this option the Fund is projected not to be exhausted over this time.

5.4.3 Given the increases suggested in the contribution rate set out in 5.4.1 the actuary was asked to consider the contribution structure further and put forward other suggestions for the reform of the scheme e.g. potentially a salary percentage based scheme to reduce the burden on the lower paid. This does not form part of the formal valuation process and as such will be submitted as a separate report (currently referred to as Annex 1). This has not yet been received but as this is anticipated to contain longer term options it was not considered worthwhile delaying the submission of this report to await the Annex.

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<sup>2</sup> Currently 27.5% for overseas voluntary contributions and 22.7% for local contributions.

## **FIG Treasury review of Callund Consulting recommendations**

### **6.1 Contribution rates**

6.1.1 The pension rate at 2011 (the time of the review) was £119/week therefore the actuaries report states £39.98/week and £32.22/week as the recommended rates at the time of the review, with an FIG subsidy of £644,000.

However, these are the figures as at 31<sup>st</sup> December 2011. Since then there have been changes to the pension rate which currently stands at £128/week. On this basis the contribution rates would be as follows:

Overseas	£43.00/week	
Resident	£34.70/week	£17.35 Employee/Employer (20% increase)
FIG	£8.32/week	£690,000 per annum (£390,000 increase)

6.1.2 During last year's budget cycle Budget Select Committee were concerned with the increase proposed at the time of £2/week for resident pension contributions and a smaller increase of £1/week was approved. An increase of £5.70/week is therefore not anticipated to be acceptable. It is therefore proposed that no increase is made to the resident contribution rate and that FIG subsidise the difference as follows:

Overseas	£43.00/week	(No subsidy)
Resident	£29.00/week	£14.50 Employee/Employer (no increase)
FIG	£14.00/week	£1,161,000 per annum (£861,000 increase)

It is recommended that this is funded from the additional revenues received from oil exploration in a similar way to the proposals under 50/13 for the Pensions (Old) Scheme Fund.

6.1.3 As the gap between the overseas and resident rate is continuing to increase and FIG's subsidy is increasing substantially it is recommended that once the Annex is received from the actuary's, the work is reviewed and if necessary developed further to investigate other options for a contribution structure.

### **6.2 Legacy issues**

6.2.1 Given the concerns highlighted by the actuary on the on-going increasing costs of the funds and the additional funding already recommended under 6.1.2 it is recommended that Option 2 regarding gradual raising of the retirement age is approved. This is consistent with that recommended by GAD in 2006 however, it is a later start due to the date of the review, slower implementation and goes up to a higher age as follows:

From	To	GAD 2006	Current 2011
64	65	2014	2020
65	66	2017	2030
66	67	2020	2040
67	68	-	2050
68	69	-	2060
69	70	-	2070

It should be noted that the actuary is not recommending an increase in the qualification period as has been the case in other systems.

#### 6.2.2 For comparative purposes:

From	To	UK Date
64	65	2018 <sup>3</sup>
65	66	2020
66	67	2036
67	68	2046
68	69	Anticipated
69	70	Anticipated

During the recent fact finding trip to Norway FIG were also informed that the Norwegian Government are currently considering raising the retirement age in Norway (currently 67) due to the aging population.

### **Financial Implications**

#### 7.1 Contribution Subsidy (Transfer to Special Funds)

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Existing	300,000	300,000	300,000	300,000	300,000	300,000
Additional	861,000	861,000	861,000	861,000	861,000	861,000
<b>Revised</b>	<b>1,161,000</b>	<b>1,161,000</b>	<b>1,161,000</b>	<b>1,161,000</b>	<b>1,161,000</b>	<b>1,161,000</b>

7.2 The initial review of future reform options will be covered within the existing fee for the actuary. However, it is anticipated that more detailed work will be required on this work which will incur an additional cost. Details of this will be included with the review of the Annex once received.

### **Legal Implications**

8.1 The increase in the voluntary contribution rate recommended in 6.1.2 will require an amendment to the Retirement Pensions (Prescribed Rates) Regulations, regulation 5 paragraph 3 (b). This will be undertaken in the Finance Bill 2013.

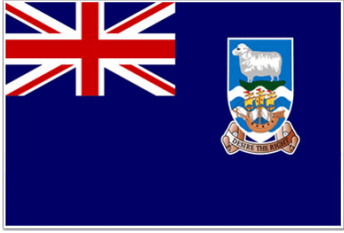
8.2 Approval of Option 2 as detailed in 5.4.2 and 6.2.1 will require the Retirement Pensions Ordinance 1996 to be amended to allow for the increase in the retirement age from 2020.

### **Human Resource Implications**

9.1 None for the purposes of this paper.

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<sup>3</sup> Women - Retirement age for men already 65



# **Falkland Islands Government**

## **Retirement Pension Fund**

### **Actuarial Review**

**as at**

## **31 December 2011**

**March 2013**



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## Letter to Governor

To: His Excellency Nigel Haywood, Governor of the Falkland Islands

Sir,

In accordance with the terms of Section 19 of the Retirement Pensions Ordinance 1996, I have carried out an actuarial review of the operation of the Ordinance during the period 1 January 2007 to 31 December 2011. A summary of my conclusions is given in the Executive Summary and a fuller description of the review in the remainder of the report.

Nicholas Silver, Fellow of the Institute of Actuaries

Callund Consulting Limited

January 2013

The report is for the use of Governor of the Falkland Islands and the Falkland Island Government only; any other parties should not rely on the findings or advice given, or part thereof, in this report without our prior consultation.

## Executive Summary and Recommendations

Callund Consulting Limited has been invited by the Falkland Islands Government (FIG) to undertake an actuarial review of the Retirement Pension Fund (RPF) as at 31 December 2011.

This report presents the results of the actuarial review as at 31 December 2011. The report sets out cash-flow projections into and out of the fund over a period of 75 years from the date of the review, based on four possible scenarios projecting different economic and demographic factors that the RPF may face. These cash-flows consist of the inflows into the Pensions Equalisation Fund (PEF), in the form of contributions and investment income, and the outflows, in the form of benefits payments and expenses. The future level of the PEF's assets are also modelled.

### ***Scenarios modelled***

The review was carried out on four scenarios described in Table E1.

**Table E1 Scenarios used in review**

<b>Central scenario</b>	This scenario anticipates a future which reflects the current economic situation, specifically steady economic growth (both domestic and international) and improvements in mortality, levels of migration and inflation in line with recent past experience. The development of the Sea Lion oil field (which has already been agreed) is included in this scenario.
<b>Low growth scenario</b>	Both global and national growth are low, there is lower immigration and higher emigration.
<b>High growth scenario</b>	National and global economic growth are high, there are higher levels of immigration and high inflation.
<b>Oil development scenario</b>	The global economy follows the same path as the central scenario. However, the oil reserves are developed fully leading to high economic growth in the Falkland Islands, with large immigration and high salary inflation.

### ***Operation of RPF and PEF since 2006 Review***

The fund is 15 times the current outgo, compared to 17 times at the 2006 review. Other key information used in the review is summarised in Table E2.

**Table E2 summary of key scheme information**

	2006	2011
<b>Contributors in year</b>	1,532	1,915
<b>Number of current and former contributors</b>	2,699	3,894
<b>Accumulated weeks contributions</b>	1.4m	1.5m
<b>Number of pensioners</b>	329	416
<b>PEF Assets</b>	£31.3m	£35.0m
<b>Contributions received in year (including FIG subsidy)</b>	£1.7m	£2.6m
<b>Pensions paid in year</b>	£1.8m	£2.4m
<b>Fund as multiple of outgo</b>	17	15

In summary of the performance of the RPF between 2006 and 2011:

1. The base data is broadly consistent, although there has been an increase in the number of contributors - because the current review includes some “transitory” contributors who have not necessarily contributed in the current year.
2. Increases to the Standard Pension Rate have been lower than inflation, thus eroding the purchasing power of pensions-in-payment.
3. The investment performance was worse than expected, which has meant that the PEF assets are lower than expected.
4. The contributions received are higher than projected, which may be caused by the “non-aligned” contributions which the PEF now receives.

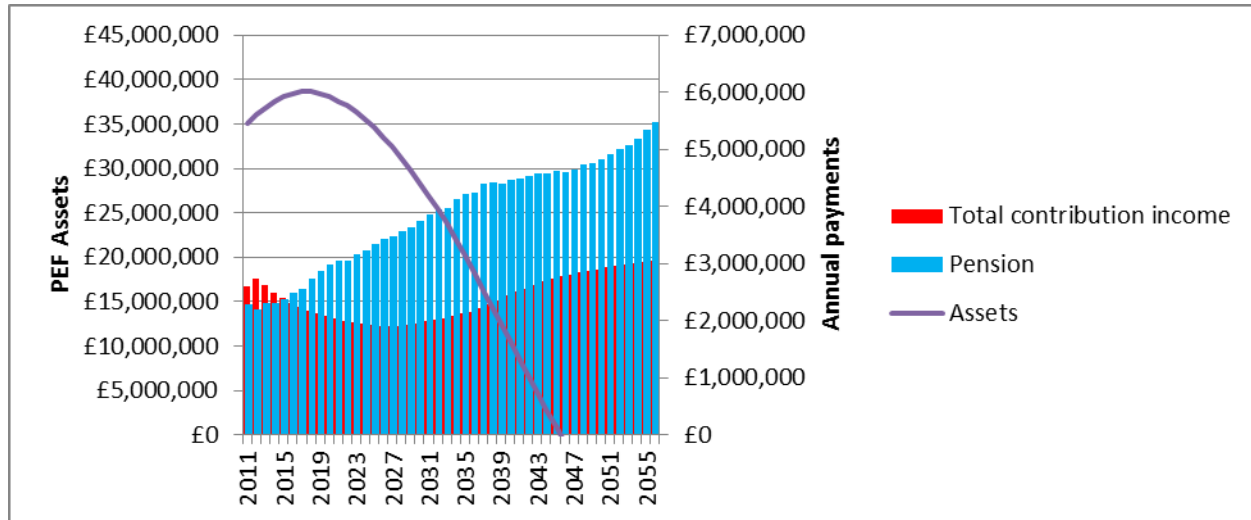
### ***Key findings of Review***

The results are largely consistent with the 2006 review carried out by the Government Actuary’s Department. Key findings are:

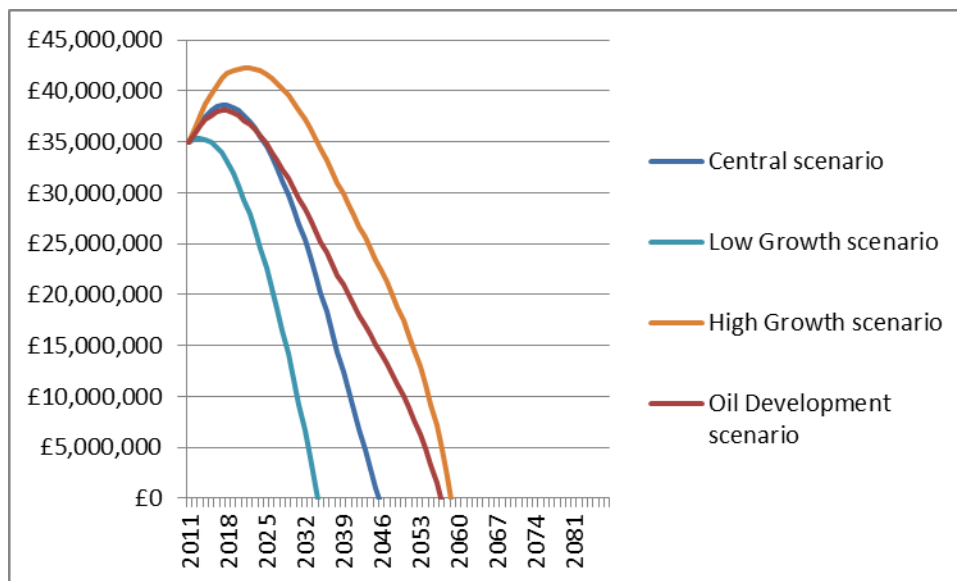
1. On a central scenario the PEF’s assets will be exhausted in 2046 (Chart E1). When the assets are exhausted, FIG will have to cover all of the payments of the RPF which will cause a sudden jump in the government subsidy.
2. The year in which the Fund will become exhausted depends on a number of factors, but in particular the impact of the development of oil on the Falkland Islands’ economy and number of immigrants, and the long term investment performance of the Fund (Chart E2).
3. The RPF is currently paying a low level of pension (on average 20% of the average of contributors’ pre-retirement salary) and this is projected to decline to between 7% and 13% of pre-retirement salaries (Chart E3).
4. The Government is currently paying a fixed subsidy of £300,000. In addition, the RPF receives around £370,000 in respect of “non-aligned” contributions which are unlikely to ever be converted into a pension.

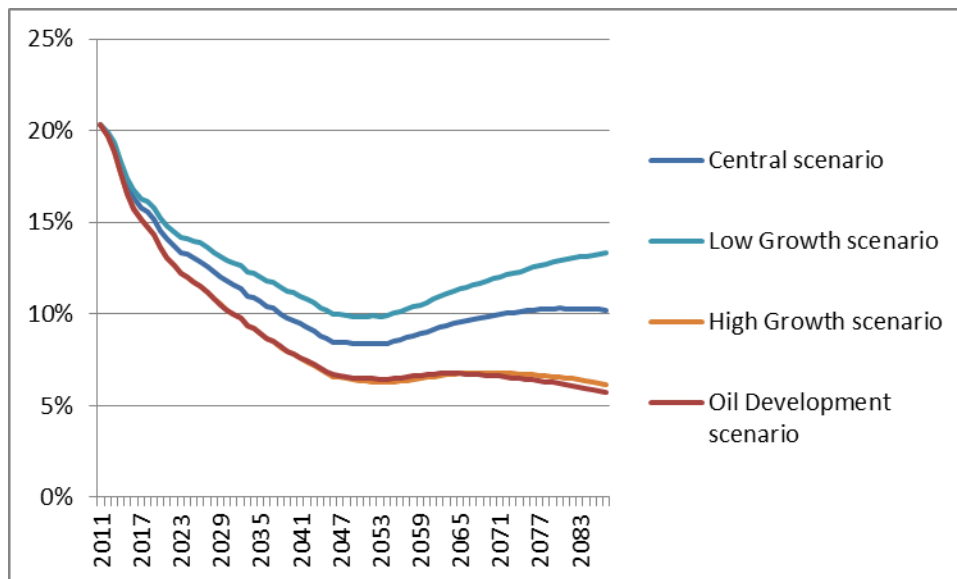
The RPF is not sustainable over the projection period, but, if suitable reforms are enacted has the opportunity to be put on a sustainable footing. We therefore have proposed that contributions are increased to the actuarial rate and in addition one of two reform options are considered to ensure the financial sustainability of the RPF.

**Chart E1 Projection of RPF assets, benefits and contributions under central scenario**



**Chart E2 PEF Assets under different scenarios**



**Chart E3 Projected replacement ratios**

### **Recommendations**

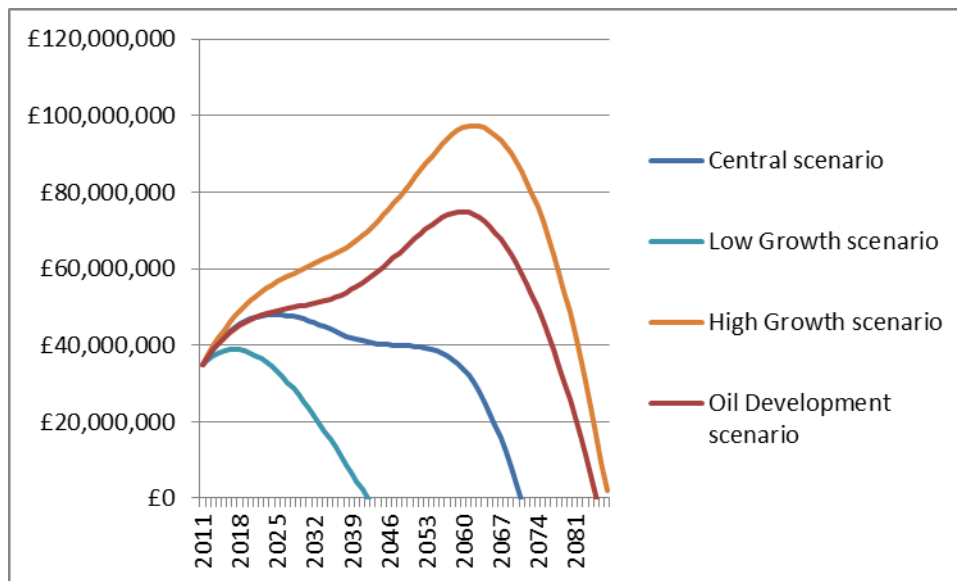
The contribution rate should be increased to a rate equal to the actuarial cost of the pension earned by each contribution. This will be 33.6% of the current standard weekly pension rate for overseas contributors and 27.1% for local contributors. The government should pay a subsidy of 6.5% of the current standard weekly pension rate for all local contributions. For 2011, this would have represented a subsidy from FIG of £644,000. To date the subsidy has been fixed at £300,000 per annum.

Paying the actuarial contribution rate will not in itself be enough to stop the PEF from becoming exhausted, so in addition one of the two following options should be considered:

#### **Option 1 – Increased contributions**

Under this option the Government contributes as suggested; that is pays 6.5% of the current standard weekly pension rate for all contributions paid. In addition, the FIG pays an extra £300,000 transfer from the Consolidated Fund, but increasing with inflation plus 1% per annum. At future reviews, the transfer is increased further to ensure that the date of exhaustion is always greater than 60 years from the date of the review. The date of exhaustion will therefore be indefinitely postponed.

This means that the costs start off lower, but increase through the lifetime of the RPF, but the cost is smoothed compared to the PEF becoming exhausted and therefore converting into a pay-as-you-go system. The Government's total subsidy for 2011 would have been £944,000 under this option. The results of this option are presented in Chart E4 (which does not show the impact of potential increased transfers at future reviews).

**Chart E4 Fund developments under Option 1**

Under the central scenario, the PEF is projected to be exhausted towards the end of the projection period. The PEF is not therefore sustainable over the projection period, but FIG can monitor experience and further increase the subsidy at a future date so that the PEF always has enough of a buffer to avoid becoming exhausted.

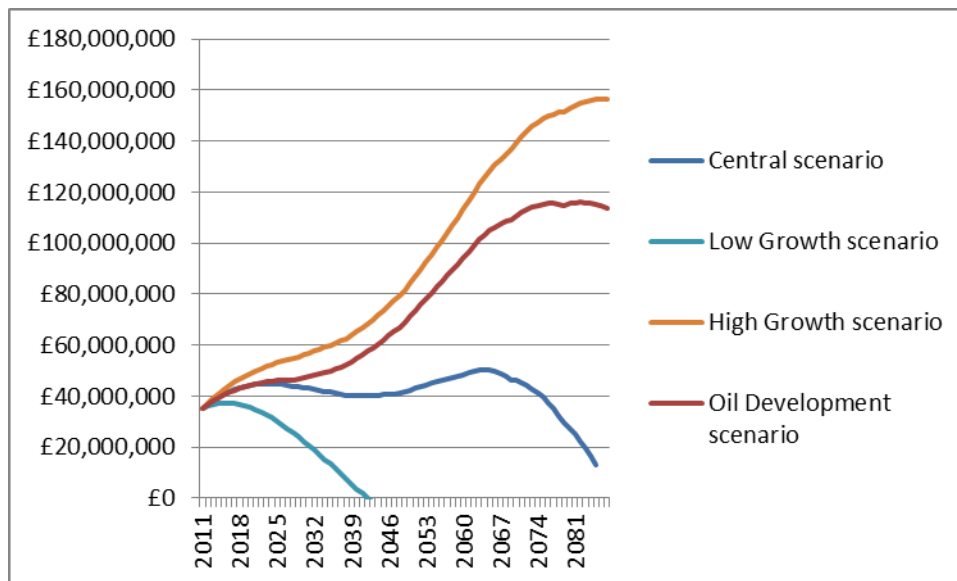
#### **Option 2 – Slow retirement age increase**

Under this option the Government contributes as suggested; that is pays 6.5% of the current standard weekly pension rate for all contributions paid. Under Option 1, FIG will have to increase the subsidy at future dates and the cost is therefore not predictable. To make the RPF sustainable, the cost of the RPF has to be reduced, the fairest and most politically feasible way of achieving this is through an increase in the retirement age.

Most developed countries are facing increased longevity which is causing pressure on their social security and pensions systems. The Falkland Islands face similar challenges - the ratio of workers to pensioners is projected to decline from its current level of over 5 to around 1.5 under all scenarios.

A very gradual increase in the pension age is therefore proposed, namely increasing the retirement/pensionable age by 1 year every 10 years commencing in 2020. This approximately keeps pace with increasing life expectancy, and gives FIG and the population time to prepare for the increase.

The increase proposed is fairly modest but does render the RPF sustainable, Chart E5 shows that under all except the low growth scenario, the fund should be positive throughout the projection period – that is with contributions and subsidy increased to the actuarial rate. The RPF is vulnerable to a negative shock, along the lines of the low growth scenario, but even under this scenario, FIG has the opportunity to monitor the situation and increase the subsidy to avoid the PEF becoming insolvent.

**Chart E5 Fund developments under Option 2**

### ***Significant risks to the RPF***

Over the projection period, the RPF faces a number of significant risks, which FIG should be aware of and seek to manage. This review cannot hope to identify all possible risks, but the following are highlighted:

**Pension increases:** I understand that the intention of pension increases is to mirror the increase in civil service wages, which increase (approximately) in line with inflation. In 1998 there was a “catch-up” increase when civil servant salaries were reviewed. In this review it is assumed that the Standard Pension Rate increases in line with inflation. However, if a future salary review is granted along the lines of the 1998 increase, this will have a significant impact on the cost of the RPF, and actuarial advice should be sought before any such increases are implemented.

**Migration:** All scenarios, apart from the low growth scenario, assume a level of inward migration to the Falkland Islands to compensate for an ageing population. However, as demonstrated by the low growth scenario, if this is not the case, then the RPF will be in a significantly worse financial situation.

**Non-aligned contributions:** A significant level of contributions are paid into the PEF which are very unlikely to result in a pension, mainly on behalf of oil workers. This effectively constitutes an additional revenue for the RPF. All scenarios, except for the low growth scenario assume that this practice will continue. However, if this situation changes in the future, then this could put the RPF in a significantly worse financial situation.

# 1. Introduction

Callund Consulting Limited (CCL) has been invited by the Falkland Islands Government (FIG) to undertake an actuarial review of the Retirement Pension Fund (RPF) as at 31 December 2011. The report is for the use of Governor of the Falkland Islands and FIG only; any other parties should not rely on the advice given in this report without our prior consultation.

## ***Purpose of review***

Under Article 19 of The Retirement Pension Ordinance 1996 (as amended in Pension Funds (Actuarial Reviews) Ordinance 2012), an actuarial review of the RPF is to be carried out every five years:

“(1) The Financial Secretary must arrange for —

(a) the operation of this Ordinance during the five year period ending on 31st December 2011 (and each five year period afterwards) to be reviewed by an independent actuary; and

(b) the actuary to report to the Governor on —

(i) the financial condition of the Pensions Equalisation Fund; and

(ii) the adequacy or otherwise of the contributions payable under this Ordinance to support the pensions payable under this Ordinance out of the Fund.”

In addition to the above, we have been asked to provide options and recommendations for reforming the RPF, if required, with particular regard to the retirement age and changing the amount and frequency of contributions.

## ***The review***

This report presents the results of the actuarial review as at 31 December 2011. The report sets out cashflow projections into and out of the fund over a period of 75 years from the date of the review (that is up to 2086), based on four possible scenarios projecting different economic and demographic factors that the RPF may be subjected to. These cashflows consist of the inflows into the Pensions Equalisation Fund (PEF), in the form of contributions and investment income, and the outflows, in the form of benefits payments and expenses. The future level of the PEF's assets are also modelled.

The future is inherently uncertain especially over such long time frames as are contemplated in this review. This is particularly the case in the Falkland Islands which faces a number of significant potential challenges, notably the development of an oil economy and a rapidly ageing population. The projections are intended to be realistic scenarios of what might happen in the future, they are not predictions of what will actually happen. By running a number of scenarios, we can test the resilience of the RPF to different realistic future scenarios.

The projections are also dependent on the data that has been supplied by FIG. This data has been externally audited, except where highlighted in the report – the review relies to a certain extent on the accuracy of this data. This review does not seek to reproduce previous reviews, but builds on the analysis undertaken in previous reviews, in particular the valuation as at 31 December 2006 undertaken by the Government Actuary's Department. The next review is due as at 31 December 2016.

This report follows the International Association Guidelines of Actuarial Practice for Social Security Programs (effective from 1 January 2003).



## 2. The Retirement Pensions Fund

The Retirement Pension Fund (RPF) is governed by the 1952 Old Age Pensions Ordinance and was amended in The Retirement Pension Ordinance 1996 to manage contributions and pay pensions to Falkland Islands residents (or past residents).

Article 19 of The Retirement Pension Ordinance 1996 (as amended in Pension Funds (Actuarial Reviews) Ordinance 2012), requires an actuarial review of the RPF to be carried out every five years.

The Pensions Equalisation Fund (PEF) was established under the Article 27 of the 1952 Old Age Pensions Ordinance and continued under Article 18 of the Retirement Pension Ordinance 1996. The PEF receives contributions and investment income and pays pensions and expenses of the RPF.

Article 18 of the Retirement Pension Ordinance 1996, the Fund “shall be invested on behalf of the Board under the direction of the Financial Secretary in such securities, or be employed at interest in such manner, as shall be approved from time to time by the Governor in Council. The Investment Guidelines dated 25 November 2010 describe the investment objectives as being “To provide long-term asset cover towards future national retirement pensions liabilities.”

The RPF was funded at the date of the review by contributions of £33.50 per week for overseas voluntary contributors, or £27 per week for other contributors, with the FIG partially making up the difference from the Consolidated Fund; the FIG currently contributes £300,000 per annum which is approximately 50% of the difference.

Full details of the benefit structure are presented in Appendix 1 of this report. The RPF covers all employed and self-employed persons in the Falkland Islands between ages 17 and 64. The RPF does not cover military or associated personnel living and working on the Falkland Islands. The Fund pays a flat pension, £119 per week as at the date of the review, provided that 2,200 weeks contributions have been paid; if not, the pension is proportioned down. Contributors with service prior to 1 January 1997 can receive a full pension with lesser contributions (see Appendix 1 for further details).

Three actuarial reviews have been carried out to date since the 1996 Ordinance came into effect, the most recent as at 31 December 2006. This 2006 review established that the PEF had assets of £33.1m, which represented approximately 50% of the accrued liability of the RPF and 17 times the outgo at the time of the review. The review recommended that the fund should be run either on a pay-as-you-go basis, in which case contributions would be increased to 24% of the pension rate but increasing through time up to 65% in 2046, or on a fully funded basis, in which case contributions should be 26.7% of the full pension rate (for voluntary non-residents) or 24.8% (for other contributors), with the difference being made up by FIG subsidy.

### 3. Membership and Population Data and Assets

Membership data was provided by the FIG. The data used has been externally audited for the Financial Statement for the Year ended 31 December 2011. Where the data does not correspond to this Statement or has not been audited this has been highlighted. I have reviewed the data extensively with the staff of FIG and am of the opinion that it is sufficient for the purposes of the review. The three main areas in which data is used for the purposes of the financial projections are:

- (a) Starting point of the projection period;
- (b) Analysis of past experience as a basis for determining the assumptions used for the financial projections;
- (c) Validation of the projection methodology.

#### Contributors

I have used the data of active contributors in the review summarised in Table 1.

**Table 1: Summary of contributors data for the year 2011**

	Number of contributors	Total weeks contributed	Contributions (£)
<b>Females</b>	766	30,559	825,089
<b>Males</b>	1,149	41,099	1,109,673
<b>Total registered</b>	1,915	71,658	1,934,762
<b>Non-aligned</b>			368,435
<b>Total</b>			<b>2,303,197</b>

I estimate that there are 1.5 million weeks of accumulated contributions that can be converted into a pension – that is the total number of weeks' contributions that have been paid by contributors who are not yet in receipt of a pension is 1.5 million.

The data of contributors supplied for 2011 was incomplete. It is understood that many people's contributions are not registered for some time after the event. I have therefore synthesised the 2011 contributions data by using the 2011 contribution record, where this is available. Where it is not, and the person was contributing in 2010, I have assumed that the number of contributions that they are paying in the year is equal to the average non-zero

contributions paid over the five previous years. Using this approach, the total contributions come to £2,303,197, which approximates to the Financial Statement figure of £2,347,000. The difference is less than 2% and has been ignored. The full “raw” data is presented in Appendix 4.

I have used a figure of 1,915 contributors, which does not reconcile with the 2,078 contributors quoted in the accounts for year-end 2011. From discussions with the staff of FIG, this latter figure represented people who are registered as contributors; there are likely to be some people included in this figure who have not contributed in 2010 and 2011. It is clear that some of the RPF contributors are transitory, that is they contribute for a period, leave the Falkland Islands and then return and contribute. The approach I have taken reflects this situation.

Some contributions in respect of previous years are recorded in later years. I have assumed that this effect cancels out (i.e. some contributions recorded in 2011 have been earned in previous years which increases the number of contributions in this year, but some contributions earned in 2011 are recorded in future years, there is no reason to believe that these numbers are different).

I understand that in this figure there are only 6 people who are voluntary overseas contributors, who are contributing at the rate of £33.50 a week. This group is not material and so is not treated separately. There are 157 contributing employers/self-employed and 100 voluntary contributors included in the total number of contributors, there is no reason to treat these groups differently from the rest of the population.

I have not been supplied with details of which contributors or pensioners might have dependent spouses whose pensions are significantly lower than the contributor, although the FIG has indicated that this number is low, so I have ignored any increase in pension that this may cause.

The contributions in Table 1 are supplemented by contributions from foreign companies, in particular oil companies, who do not register their employees; that is the FIG Treasury is notified as to how many employees they have working on the Islands and contributions are paid by the company on behalf of its employees, without the employees necessarily knowing that they are entitled to benefits. There is very little likelihood that these employees will ever claim a pension; they are only in the Falkland Islands (or off-shore) for a short space of time and may not be aware that contributions are being paid on their behalf; so to qualify for an RPF pension, they would have to independently make up the contributions up to the minimum qualification period, which is considered highly unlikely. These contributions, which have been termed “non-aligned” contributions, total £368,435.

In addition FIG contributes £300,000 per annum from the Consolidated Fund. From discussion from FIG staff this amount has been fixed for a number of years.

We have also analysed historic data which includes contributors who no longer contribute, but will still qualify for a pension. Of these, there are 1,979 “non-actives”, giving a total number of current and former contributors of 3,894. Many of these former contributors do not currently reside in the Falkland Islands and it is likely that many will not return, especially those (1,113 former contributors) who have less than 250 contributions and therefore will not qualify for a pension.

## Pensioners and Beneficiaries

We have been supplied with the information set out in Table 2, which is consistent with the previous review.

**Table 2: Summary of pensioner and beneficiaries data<sup>1</sup>**

	<b>Males</b>	<b>Females</b>	<b>Total</b>	<b>Weekly pension</b>
Standard rate	128	164	292	£34,748
Partial Pensions	49	36	85	£4,518
Standard rate & married supplement	39	0	39	£7,254
<b>Total</b>	<b>216</b>	<b>200</b>	<b>416</b>	<b>£46,520</b>

The number of pensioners in Table 2 agrees with the Financial Statement for the Year ended 31 December 2011,

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<sup>1</sup> Reconciled with Financial Statement For the Year ended 31 December 2011

## Assets

We have been provided with the Financial Statement for the Year ended 31 December 2011 and Investment report as at 31 December 2011. As at that date, the composition of assets is described in Table 3.

**Table 3: Details of scheme assets<sup>2</sup>**

	£000s	£000s
<b><u>Assets</u></b>		
Fixed interest	6,387	
UK Equities	11,943	
Global Equities	12,441	
Property	2,986	
Alternative assets	464	
Liquid assets	423	
		<b>34,644</b>
<b>Cash held by financial Secretary in the Consolidation Fund</b>		391
<b>Management fees</b>		(29)
<b>Total assets</b>		<b>35,006</b>

The fund is 15 times the current outgo, compared to 17 times at the 2006 review.

## Falkland Island Population Data

The Falkland Island population data was taken from the 2011 census. The data has had to be adjusted as 363 people are civilian contractors at Mount Pleasant Airport (MPA), of whom 68% are male, who do not qualify for the RPF. Also 91 people were absent on the census night of the survey. The original census figures are presented in Appendix 3. The results are summarised in Table 4 and Chart 1. To estimate the population data used in the projection, we have proportioned down the population by MPA personnel and up by absentees

<sup>2</sup> Figures taken from "Investment report as at 31 December 2011" prepared by Sarasin and Partner. This contradicts Financial Statement for the Year ended 31 December 2011. However, we have been informed that the difference is due to management fees of £29,367, which we have taken out of the "Liquid assets" section.

(assuming the split of absentees is 50/50 male/female, and all absentees and MPA are of working age). This gives a total population of 2,563, almost identical to the number of the 2006 review (2,562).

**Table 4 Summary of Falkland Islands population data**

Age	Female	Male	Total
0-16	281	236	517
17-63	842	880	1722
Over 64	155	169	324
<b>Total</b>	<b>1278</b>	<b>1285</b>	<b>2563</b>

**Chart 1 Falkland Islands population grouped by age and gender**

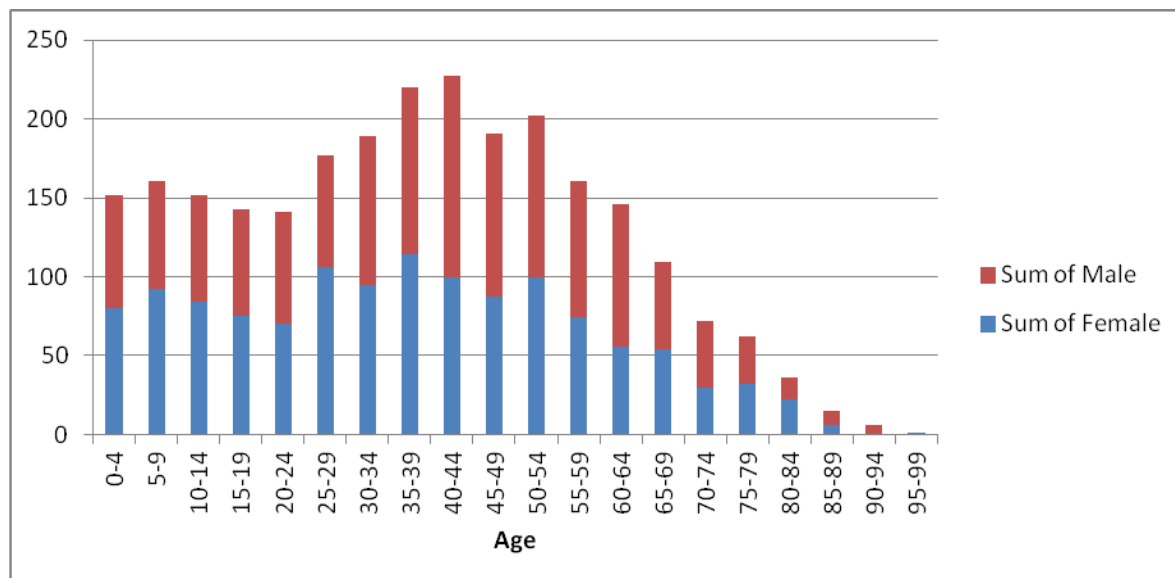


Table 4 indicates that some of the people who contribute do not reside on the Falkland Islands, and that a number of pensioners live abroad (there are 416 pensioners compared to 324 people of greater than pension age). This is consistent with the findings that some of the RPF contributors are “transitory” and will not therefore appear in the census. Chart 1 indicates that there is a population bulge between ages 35 and 55 – this indicates that there will be a rapid ageing of the population with a large increase in the number of pensioners, which will start over the next 5 years.

## 4. Operation of Ordinance since 2006 Review

Table 5 compares key data items with equivalent figures that were used in the 2006 Review. Table 5 shows that the data is broadly consistent. The areas which appear not to be consistent are the number of contributors, the number of current and former contributors and the number of contributors reported in the year end accounts.

The number of contributors reported in the year end accounts has been explained by FIG Treasury as the result of an on-going exercise to remove non-active contributors from the accounts figure. In the 2006 Review, people who have contributed less than 250 contributions are excluded; if the 2011 figure is adjusted in this way, the number of former contributors are consistent.

The only figure that is apparently inconsistent therefore is the number of current contributors. The data used for the 2006 report is not available, but it would appear that the figure used is the actual number of people who contributed in that year. For the current year that has been modified to reflect that part of the population of contributors are “transitory”; not all of the contributions paid in one year are reported in that year, hence in reality the number of contributors is higher than the total number of people who have contributed in the current year in the records. The 2011 figure has been adjusted to allow for this and therefore appears higher than the 2006 figure.

**Table 5 Comparison of data with 2006 review**

	2006	2011	Observations
<b>Contributors in year</b>	1,532	1,915	Apparent increase caused by including “transitory” contributors.
<b>Number of current and former contributors</b>	2,699	3,894	Large increase, but 2006 review excluded some non-actives. If “less than 250 contributions” non-actives are removed, this gives 2,781, which is consistent.
<b>Number of active contributors (end of year accounts)</b>	2,680	2,078	Discussions with FIG indicate that there is an on-going exercise of removing null contributors from the accounts figures, which explains the apparent large reduction
<b>Accumulated weeks contributions</b>	1.4m	1.5m	Consistent
<b>Number of pensioners</b>	329	416	Consistent with projections (see Table 8)
<b>PEF Assets</b>	£31.3m	£35.0m	Consistent
<b>Fund as multiple of outgo</b>	17	15	Consistent

Table 6 shows the contribution rate and the standard pension rates since the 2006 Review.

**Table 6 Weekly contribution and standard pension rate**

<b>Year</b>	<b>Local contribution rate</b>	<b>Overseas contribution rate</b>	<b>Standard Pension</b>	<b>Married Couples Supplement</b>
<b>2007</b>	£ 21.00	£ 24.70	£ 110.00	£ 62.00
<b>2008</b>	£ 22.00	£ 25.50	£ 114.00	£ 64.00
<b>2009</b>	£ 23.00	£ 26.50	£ 118.00	£ 66.00
<b>2010</b>	£ 25.00	£ 31.50	£ 118.00	£ 66.00
<b>2011</b>	£ 27.00	£ 33.50	£ 119.00	£ 67.00

**Table 7: Investment returns, pension increases and inflation since the last review**

<b>Year</b>	<b>Estimated investment return<sup>3</sup></b>	<b>Inflation<sup>4</sup></b>	<b>Pension increases</b>
<b>2007</b>	7.7%	3.9%	5%
<b>2008</b>	-16.9%	9.2%	4%
<b>2009</b>	13.9%	-3.2%	4%
<b>2010</b>	9.9%	5.7%	0%
<b>2011</b>	-2.1%	8.3%	1%

<sup>3</sup> This has been estimated from the annual accounts

<sup>4</sup> Supplied by FIG



Average <sup>5</sup>	1.9%	4.7% <sup>6</sup>	2.8%
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The 2006 Review's projections were based upon real returns of 2% per annum, hence with the average pension increases at 2.8% per annum, the assumed return was 4.8% per annum. This compares to the rate actually achieved, which was 1.9% per annum. This implies that the financial position of the PEF will be worse than anticipated in the 2006 Review, because of the lower than expected investment returns.

I am also able to compare the 2006 Review's projections of 2011 with the current situation. This is not in any way to comment on the 2006 Review, but it provides a comparison of the baseline with the previous Review, and a comparison of whether the RPF has performed as it was projected to. This is presented in Table 8.

**Table 8 Comparison of 2011 projections from 2006 Review (medium immigration) with current situation**

	2011: 2006 Review <sup>7</sup>	2011	Observations
<b><u>Contributors and pensioners</u></b>			
Contributors	1,690	1,915	Significant increase, due to inclusion of transitory contributors.
Pension paid in year/full rate	340	368	A slight increase over projections
Contributors/Pensions	5.0	5.2	Consistent
<b><u>Population</u></b>			
Falkland Island Population	2,642	2,563	A slight decline – consistent with “nil immigration” scenario
Support ratio	5.01	5.31	A slight increase
<b><u>Cashflows and Assets</u></b>			
Contribution income	£2.3m	£2.6m	A significant increase, this may be because of non-aligned contributions

<sup>5</sup> The figures in this row are geometric averages which better reflect the actual returns and increases of prices.

<sup>6</sup> The average is 3.6% over a 12 year period

<sup>7</sup> The 2007 monetary values quoted in the 2006 Review have been adjusted for actual inflation

Outgo	£2.5m	£2.4m	Consistent
Balance of fund	£42.2m	£35.0m	The assets are significantly lower than expected
Fund/outgo	17.1	15	Slight worsening

Table 8 shows that there are more pensions being paid than expected, but also more contributors, the latter due to the inclusion of “transitory” contributors, as described above. The population is broadly consistent with projections. The financial situation is mixed; there are more contributions than expected, this is probably due to the “non-aligned” contributions which could not have been anticipated in the 2006 Review. However, the fund balance is lower than expected, the result of worse than expected investment returns, as highlighted in Table 7.

In summary of the performance of the RPF between 2006 and 2011:

- The base data is broadly consistent, although there has been an apparent increase in the number of contributors, due to the inclusion of “transitory” contributors in the current review.
- Increases to the Standard Pension Rate have been lower than inflation, thus eroding the purchasing power of the pension.
- The investment performance was worse than expected, which has meant that the PEF assets are lower than expected.
- The contributions received are higher than projected, which may be caused by the “non-aligned” contributions which the PEF now receives.

## 5. Modelling Scenarios & Assumptions

The output of the cashflow model is a projection over the next 75 years of contributions paid into the PEF and payments paid out, in the form of benefits and expenses, of the PEF in each year and the resultant level of the assets. The cashflows will be determined by future economic and demographic conditions under which the PEF operates. The review was carried out under a central scenario and 3 alternative scenarios, made up of different sets of actuarial assumptions of what these conditions will be.

The purpose of modelling different scenarios is to test how resilient and sustainable the RPF is over the projection period, to different future conditions. Comparing scenarios illustrates the sensitivity of the projections to different actuarial assumptions. In using different scenarios, no likelihood is assigned to any scenario, but the motivation is to have a central scenario which is a realistic basis based on the current economic paradigm, and 2 scenarios (the low and high growth scenario) which reflect alternative possible paths and demonstrate the sensitivity of the RPF to different sets of assumptions. Another scenario called the “oil development” scenario is also included. This is a scenario where there is major development of the Falkland Islands’ oil reserves, which leads to a prolonged economic boom. The scenarios used in the review are shown in Table 9<sup>8</sup>.

**Table 9: Scenarios used in the review<sup>9</sup>**

<b>Central scenario</b>	This scenario anticipates a future which reflects the current economic situation, specifically steady economic growth (both domestic and international) and improvements in mortality, levels of migration and inflation in line with recent past experience. The development of the Sea Lion oil field (which has already been agreed) is included in this scenario.
<b>Low growth scenario</b>	Both global and national growth are low, there is lower immigration and higher emigration.
<b>High growth scenario</b>	National and global economic growth are high, there are higher levels of immigration and high inflation.
<b>Oil development scenario</b>	The global economy follows the same path as the central

<sup>8</sup> In setting the scenarios for these assumptions, I have consulted with staff of the FIG Treasury and with Jamie Fotheringham, Head of Policy.

<sup>9</sup> The low growth and high growth scenarios reflect possible but extreme scenarios, to show the resilience of the RPF. This the word “growth” refers to growth of the global economy, and of the Falkland Islands economy and the implications of both.

scenario. However, the oil reserves are developed fully leading to high economic growth in the Falkland Islands, with large immigration and high salary inflation.

Table 10 sets out the summary of the key economic and demographic assumptions used in the cash flow projections. A detailed explanation of the derivation of the parameters is given in Appendix 2. These projections are all expressed in real terms (i.e. returns in excess of inflation), so all future monetary figures are expressed in 2011 monetary values.

**Table 10: Key actuarial assumptions**

Parameters	Central scenario	Low growth scenario	High growth scenario	Oil development scenario
<b>Investment return</b>	1.5% pa	0.5%	2.5%pa	1%pa
<b>Migration</b>	+10	0	+ 15	+25
<b>Non-aligned contribution</b>	Continues at current rate	Disappears	Continues at current rate	Continues increasing at 1% per annum
<b>Average number of weeks contribution</b>	37	33	40	45

**Pension increases:** In line with inflation

**Government transfer from Consolidated Fund: Increases** in line with inflation

The central scenario assumption is a prudent best estimate assumption based on the current economic outlook. The investment return assumption is quoted as a “real” figure, i.e. inflation has been stripped out, so the assumption represents the return in excess of Falkland Islands inflation<sup>10</sup>.

After discussions with the FIG Treasury, it is assumed that the Standard Rate Pension increase in line with inflation, with the proviso that FIG are alert to the fact that future salary reviews, such as that in 1998, would have a large impact on the RPF, if matched, and the RPF should therefore be reviewed in advance of granting any such increase to the Standard Rate Pension.

<sup>10</sup> The inflation assumption will be a negative on the investment return assumption – for a given nominal investment return level, a high inflation assumption will give rise to a lower (real) yield assumption.

Currently, there are £368,435 of contributions, which we have termed “non-aligned” contributions. These are contributions from mainly foreign companies, in particular oil companies, who do not register their employees, that is the FIG Treasury is notified as to how many employees they have working on the Islands and contributions are paid by the company on behalf of its employees, without the employees necessarily knowing that they are entitled to benefits. There is very little likelihood that these employees will ever claim a pension ; they are only in the Falkland Islands (or off-shore) for a short space of time and may not be aware that contributions are being paid on their behalf; so to qualify for an RPF pension, they would have to independently make up the contributions up to the minimum qualification period, which is considered highly unlikely. It is assumed in the central scenario and high growth scenario that this practice continues at the current rate. It is assumed in the low growth scenarios that this practice is terminated and the contributions disappear. In the oil development scenario there will be an increased number of off-shore workers, who are likely to be non-aligned; the non-aligned contributions are therefore assumed to increase at 1% per annum (real). There is a fuller explanation of actuarial assumptions in Appendix 2.

## 6. Modelling Process

The purpose of the modelling exercise is to compare long-term projections of the RPF under different economic scenarios. This will help facilitate the decision process of the FIG on funding level, contribution rates and need for reform of the RPF, by quantifying factors such as the affordability of the RPF, the level of pension benefits that members can expect to receive in the future, and the financial risk to the member, the PEF and the FIG caused by adverse long-term financial scenarios.

I have prepared results over a 75-year time-frame. It is not possible to predict with any certainty the financial outcomes over such a long time-frame. Moreover, using a single-point estimate would be counter-productive, the key questions as to the sustainability of the RPF arise when the assumptions are not borne out in practice – this is what the model can test.

The use of four possible economic scenarios is not to give an accurate prediction of what is likely to happen, but is to test the robustness of the RPF to possible scenarios. This also tests the sensitivity of the projections to different actuarial assumptions.

The four scenarios which have been chosen are a low-growth future – one where interest rates, inflation and investment returns are low, a central scenario and a high-growth future. In addition an oil development scenario is developed, which models what might be the effect on the RPF if there was major sustained development of the Falkland Islands' oil resources (in addition to the development of Sea Lion which is included in the central scenario), which may have significant implications for the RPF. These should, therefore, characterise the range of possible outcomes.

A deterministic approach is taken to model the outcomes. To get a more accurate picture of the full range of risks to the RPF, a more complex stochastic model should be constructed.

### Modelling Methodology

There are essentially four parts to the model:

1. A population projection: this projects the future population of the Falkland Islands, from which a proportion of entrants to employment is calculated in any given year for each age group. Trends such as improving life expectancy and changing immigration are modelled here.
2. Membership model: existing members' data, such as salaries, are projected forwards and decrements applied, for death, leaving and retirement (with leavers also being able to re-joining the Fund). New entrants are created at each age and future year based on future population numbers and participation rates, and details are projected forward in a similar manner as to current members.

3. Calculation model: The benefit structure of the RPF is applied to the current and future membership projections, this creates a stream of future incomes and expenditures split by benefit class for every member.
4. Actuarial model: this applies actuarial functions to the stream of payments resulting in an actuarial analysis<sup>11</sup>.

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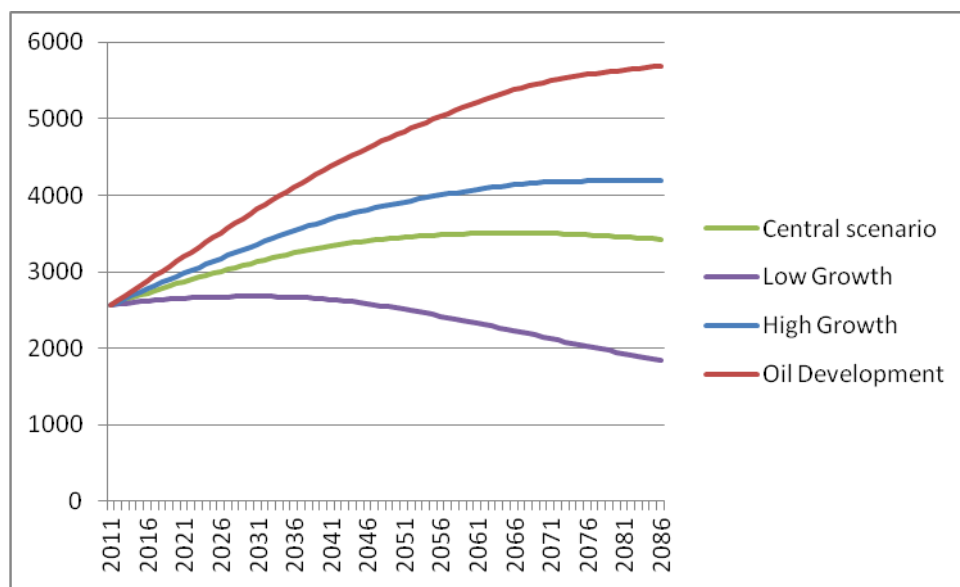
<sup>11</sup> Perhaps, a more standard “text book” approach to modelling would be to project the membership of the RPF as a proportion of the Country’s population. However, I felt that this was not appropriate in this case as firstly, the population has high rates of migration compared to the size of the population, and many contributors and pensioners appear to be non-resident at some stage. Secondly the 1996 reform means that the current pensioner population mostly receive a full pension, a situation which will not continue as more contributors retire based solely on post-1996 benefits, so comparing the future pensioner population to the current one will not be meaningful. Both of these factors, combined with the relatively small size of the population and RPF, suggest that an “individual” approach is more appropriate.

## 7. Results

### Population projections

The full population projections of the Falkland Islands are presented in Annex 2. The results are summarised in Charts 2 and 3.

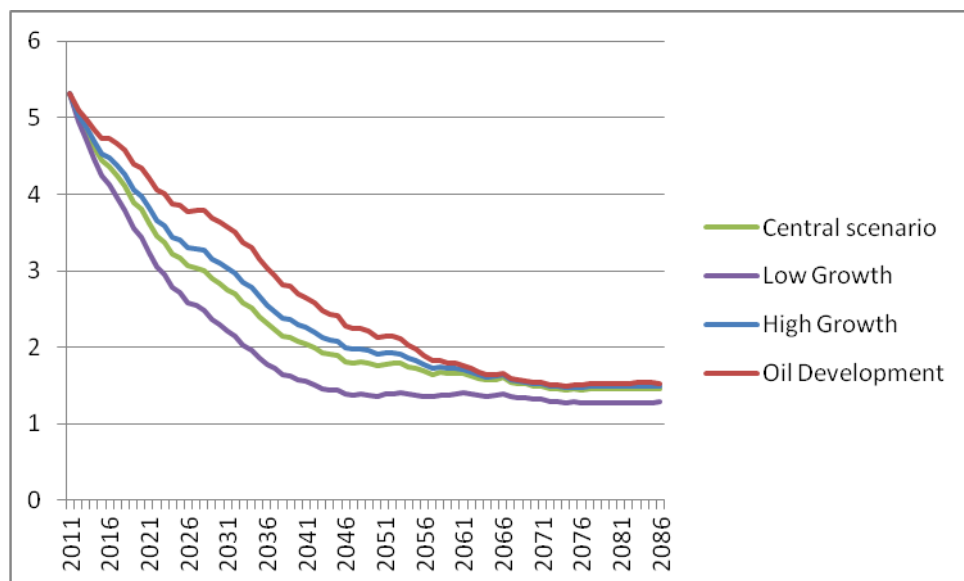
**Chart 2 Falkland Islands Population Projections**



Under the low growth scenario, that is a “nil” migration scenario, the population slowly declines over the projection period. The central scenario assumes immigration to balance the ageing population and because of the new work provided by the development of the Sea Lion oilfield, the population therefore increases, peaking at around 3,500 in the middle of the century before declining slowly. The other scenarios assume higher levels of immigration. Under the oil development scenario the population increases steadily, reaching double the current level towards the end of the projection period.

The population dynamics are explored further in Chart 3, which shows the support ratio – that is the ratio of working population to retired people. Under all scenarios, this shows a rapid decline from the current ratio of 5.3 to between 1 and 2 by the end of the projection period under all scenarios. The main difference between the scenarios is the rapidity of the decline, under the high immigration scenarios, the decline is slower and steadier over the projection period – under the low growth scenario where there is no immigration, the decline is rapid and dramatic. Chart 3 describes a rapidly ageing population and demographic transition which will have profound implications not only for the RPF but for the Falkland Islands society and economy as a whole.



**Chart 3 Ratio of workers to pensioners**

### Cashflow and asset projections

The cashflow model was run as described in Section 5. On the central scenario the contributions, benefits and assets are projected as shown in Chart 4. The cashflow results are presented in full in Annex 2.

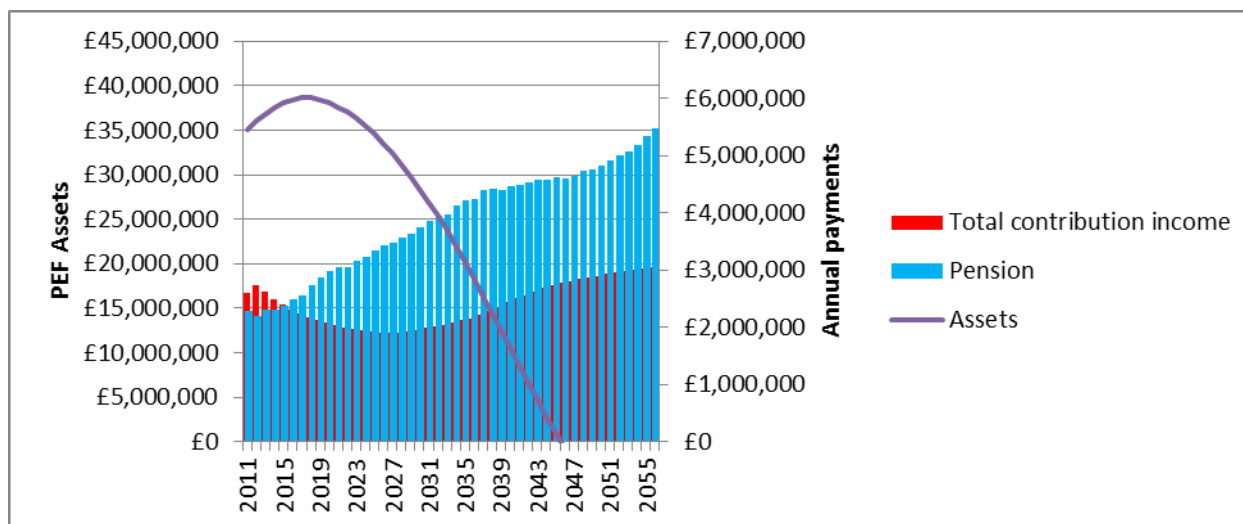
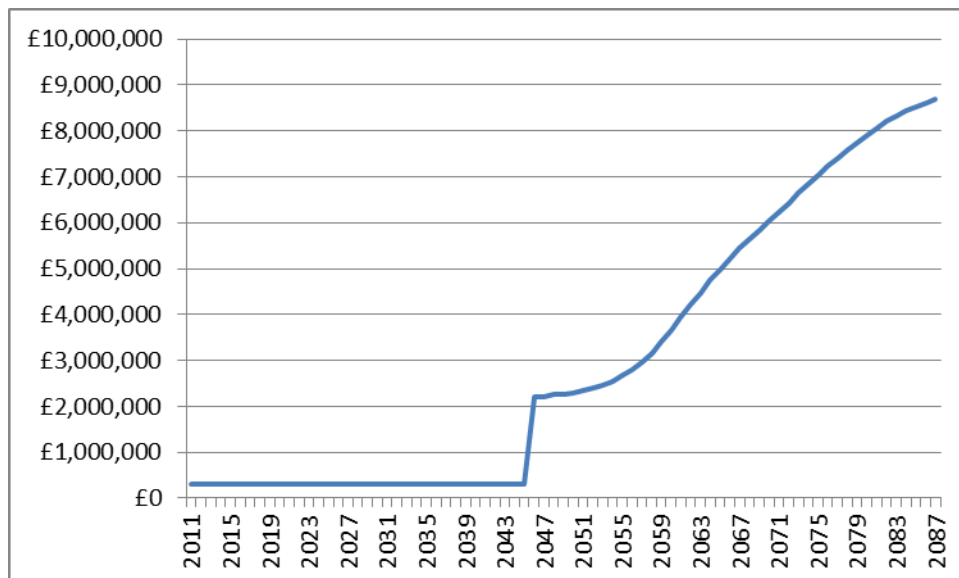
**Chart 4 Projection of RPF assets, benefits and contributions under central scenario**

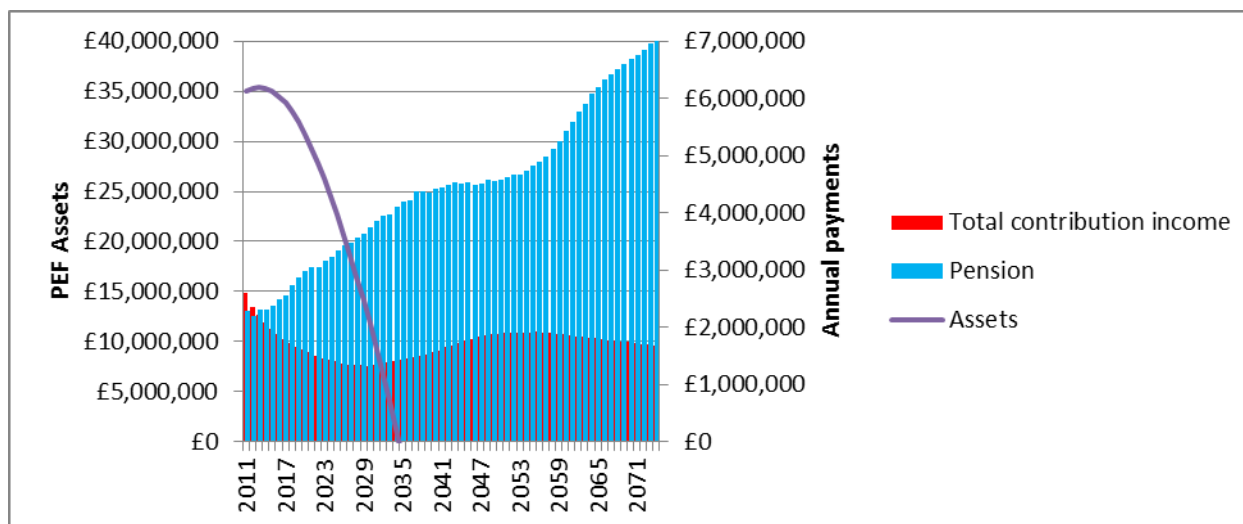
Chart 4 shows that the contributions are currently higher than the benefit payments. However, the contributions slowly decline whereas benefit payments increase rapidly. This causes the PEF assets to increase initially, peaking at £38.6m in 2017, before rapidly declining, becoming exhausted by 2046.

The effect on the FIG subsidy are shown on Chart 5.

**Chart 5 FIG subsidy under central scenario**

The current policy is that FIG are paying a fixed subsidy of £300,000<sup>12</sup>. When the PEF assets are exhausted by 2046, FIG will have to pay all pensions and expenses, less the contributions received, at this time, which will cause a sudden jump in the subsidy levels to meet these extra costs – this is projected to occur in 2046 when the FIG subsidy would increase to £2.2 million per annum. The FIG subsidy will then steadily increase as the benefit payments increase through time.

The results of the 3 other scenarios are shown in Charts 6-8.

**Chart 6 Projection of RPF assets, benefits and contributions under low growth scenario**

<sup>12</sup> assumed to increase in line with inflation

Chart 6 shows that the contributions rapidly decline whereas benefit payments increase rapidly. This causes the PEF assets to rapidly declining, becoming exhausted by 2035.

**Chart 7 Projection of RPF assets, benefits and contributions under high growth scenario**

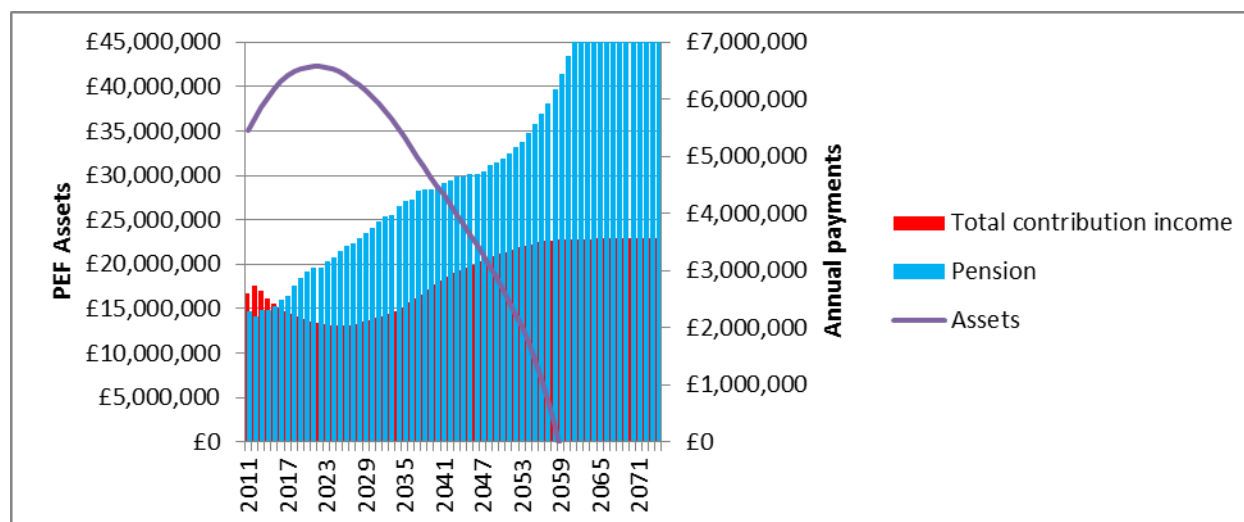


Chart 7 shows the contributions slowly decline before increasing again as the higher level of immigration starts to have an effect. The benefit payments increase rapidly. This causes the PEF assets to increase initially, peaking at £42.3m in 2022, before rapidly declining with the PEF ultimately becomes exhausted in 2059.

**Chart 8 Projection of RPF assets, benefits and contributions under oil development scenario**

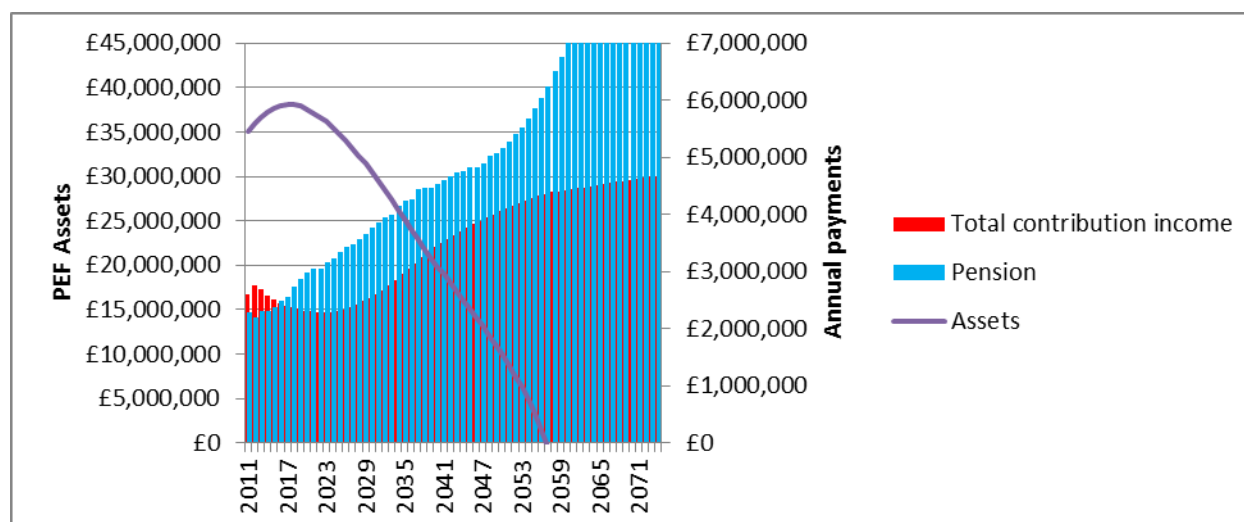


Chart 8 shows the contributions slowly decline before increasing again as the higher level of immigration starts to have an effect. The benefit payments increase rapidly and progressively. This causes the PEF assets to increase initially, peaking at £38m in 2017, before rapidly declining. With the PEF ultimately becomes exhausted by 2057.

Chart 9 compares the PEF assets under the different scenarios in one chart.

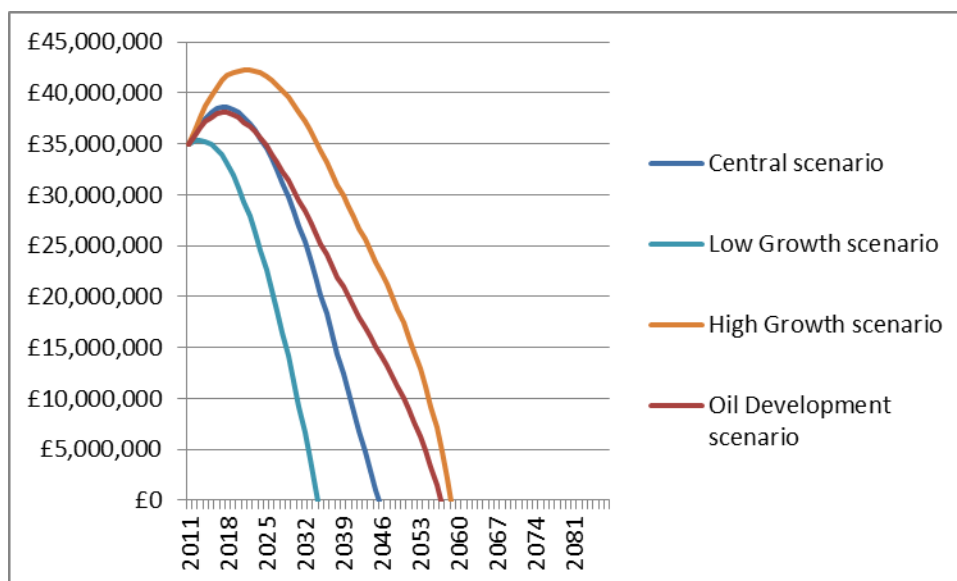
**Chart 9 PEF Assets under different scenarios**

Chart 9 serves the dual purpose of showing the sensitivity of the outcomes to different assumptions, and investigating the behaviour of the assets under different realistic scenarios. Under all scenarios PEF assets are exhausted. There is however a wide variation in how long the assets will last depending on what set of assumptions are used. In the low growth scenario, assets receive low returns and contributions decline, predominantly because of the cessation of non-aligned contributions. The result is that the PEF's assets are exhausted by 2035. In the high growth and oil development scenarios, the PEF assets last into the end of the 2050s. This is caused by a mixture of inward migration, good fund performance in the high growth scenario and increased non-aligned contributions in the oil development scenarios. The exhaustion date is co-incidentally similar in these two scenarios as the better fund performance in the high growth scenario is matched by the effects of higher immigration and non-aligned contributions in the oil development scenario.

## Past Service Liabilities

To check the funding level of the PEF, a past service liability calculation has also been undertaken on the central scenario. The results of this past service liability calculation are presented in Table 11.

The Project Unit Credit actuarial method has been used to value the liabilities of the RPF. Under this method, the value of each member's total liabilities is apportioned equally over his expected years of service to retirement age. The intention is that the annual contribution payable, known as the actuarial cost, will exactly provide each year for the cost of the members' benefits accruing over that same year. Following on from this, if the RPF were to be fully funded the assets held in the PEF should exactly cover the liability for members' benefits relating to service completed before the valuation date.

The contribution rates are expressed as a percentage of pension. This method does not explicitly allow for future new entrants.

**Table 11: Calculated assets and liabilities**

	£ '000	£ '000
<b>Assets at Market Value</b>		<b>35,006</b>
<b>Past service liabilities</b>		
<b>Pensioners</b>	39,165	
<b>MCS</b>	811	
<b>Contributors</b>	65,463	
<b>Total</b>	<b>105,439</b>	
<b>Surplus (deficit)</b>		<b>(70,433)</b>
<b>Funding level</b>		33.2%
<b>Actuarial Cost</b>		<b>33.6%</b>

Thus, at the date of the review, the accrued liabilities of the Fund were £70 million more than the assets of the Fund, giving a funding level of 33% of liabilities. At the last valuation the funding level was 50%. Therefore, the funding position has deteriorated since the last valuation.

The reasons for the deterioration are that the Fund's investment returns have been lower than the increase in the standard pension rate, and that the actuarial basis has changed; the discount rate assumption is lower than in the 2006 review to reflect changed global economic conditions. Also, life expectancies have continued to improve.

### **Actuarial contribution rate**

The future contribution rate required to meet the actuarial cost of benefits as accrued is calculated using the actuarial assumptions of the central scenario and the Projected Unit Credit Method. This rate is 33.6% of the current standard weekly rate of pension. This is considerably more than the rate currently paid, £33.50.

The reason for the increase is similar to the reason for the past service liability calculation, namely because of the change of actuarial basis and improving life expectancy.

In the 2006 Review, the split if the contribution paid between FIG and the contributor was justified on the basis that the contributions are compulsory, yet not all benefits will be received. Our analysis shows that the situation is more complex now than that would suggest. In the event, the split proposed by the 2006 Review has not been paid in practice. The Government have been contributing at a fixed rate subsidy of £300,000 and in addition there are "non-aligned" contributions of £368,435. Table 12 compares the actual contribution rates in 2011, with what the 2006 Review implied, and what this Review is proposing, assuming the split between FIG and contributor is maintained in line with current practice.

**Table 12: Comparison of actual rates of contribution with recommended rates (2006 Review) and proposed rates (current review) based on 2011 Standard Pension (£119 per week)**

	<b>Actual 2011 contributions</b>	<b>Contributions implied by 2006 Review</b>	<b>Contributions implied by 2011 Review</b>
<b>Local</b>	£27	£29.51	£32.22
<b>Overseas</b>	£33.50	£31.77	£39.98
<b>FIG Subsidy</b>	£300,000 per annum	£2.26 per contribution	£7.76 per contribution

Paying the actuarial contribution rate would not mean that the RPF becomes sustainable or fully funded, as the actuarial rate covers the cost of accruing benefits alone, but will not compensate for the actuarial deficit. However it would maintain the principle that contributions paid in match the cost of the benefits.

The pay-as-you-go contribution rate has not been presented as has been calculated in previous reviews, as the FIG Treasury have indicated that they do not intend to convert the RPF into a pay-as-you-go system<sup>13</sup>.

## Replacement Ratios

Chart 10 shows the replacement ratio under different scenarios. That is the proportion of average pension compared to the average salary of people immediately prior to retirement.

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<sup>13</sup> These have been calculated and are presented in Annex 2. The rate is broadly consistent with the 2006 Review, under the central scenario increasing from a weekly rate of £32.73 in 2011 to £57.41 in 2046. The equivalent figures in 2006 Review, medium immigration scenario are £26.46 and £59.19 respectively (the 2006 Review runs four scenarios, one of which is called the “medium immigration scenario”). The rate then continues to increase, reaching £133.81 at the end of the projection period.

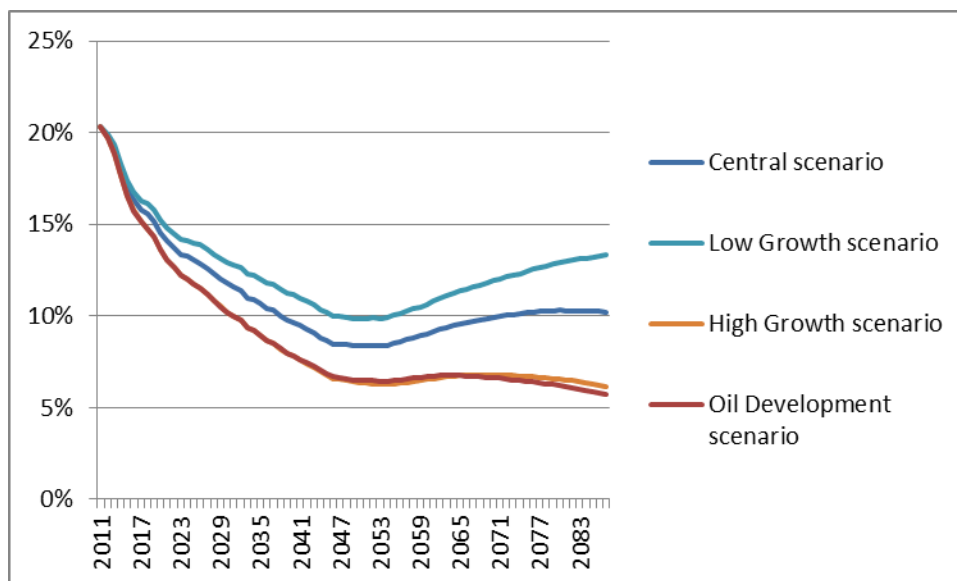
**Chart 10 Projected replacement ratios**

Chart 10 shows that the pension currently pays a replacement ratio of around 20%; that is a pension is 20% of the salary, immediately prior to retirement, of a pre-retirement contributor with an average salary for that age. The RPF therefore provides a basic relatively low level pension, as opposed to a replacement of salary. However, in future this will decline to between 7% and 13% depending on the scenario. The low growth scenario produces the higher replacement ratios – this is because salaries do not increase by as much as the other scenarios, so a fixed pension is proportionately more valuable. The main cause of this decline in replacement ratios is because the standard rate pension receives (assumed) prices inflation increases, which are lower than the (assumed) salary increases<sup>14</sup>.

### Comparison with 2006 review

The key outputs are compared in Table 13. In comparison, the central scenario is compared to the “medium immigration” scenario of the 2006 Review, as these are approximately equivalent. The year 2046 has been chosen as this was the last projection year of the 2006 Review.

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<sup>14</sup> I understand that over the last 15 years in the Falkland Islands this has not been the case, i.e. prices inflation has exceeded salary inflation. However, in the long term and, assuming that the economy maintains growth in excess of inflation, I have assumed that salaries will grow in excess of prices inflation.

**Table 13 Comparison of key outputs with 2006 Review**

Key parameter	2006 Review	2011 Review	Comment
<b>Support ratio (2046)</b>	1.88	1.82	Similar
<b>Contributors/full rate pensions (2046)</b>	2.2	3.0	There are more contributors at the start of the period compared to the 2006 projections and a different definition of contributors is used
<b>Fund balance (2046)</b>	£8.8m	0	Lower expected investment returns
<b>Actuarial contribution rate (current)</b>	26.7%	33.6%	Lower discount rate, higher life expectancy
<b>Funding Level (current)</b>	50%	33.2%	Lower discount rate, higher life expectancy and recent low investment returns

Table 13 shows that the 2006 and 2011 projects are broadly consistent. The projected support ratio in 2046 is very similar, which shows that the population projections are consistent. The ratio of contributors to full rate pensions are higher in the 2011 review. This can be explained as the starting conditions are different – the 2006 review projects 1,690 contributors in 2011, whereas there are actually 1,900 contributors, but with lower average pension, and as has already been described the current review makes allowance for “transitory” contributors, to reflect that some contributions are not registered in the year of contribution, and some contributors pay infrequently with large gaps in their records. This could be expected to result in a higher number of contributors and hence a higher ratio.

Although the difference between fund balances in 2046 appears high this is actually a relatively small difference – these are fund values projected over 35 years and therefore any slight difference is exaggerated. A better comparison would be the year the fund is exhausted, but this is not available from the 2006 Review; but from the trend of the fund in the 2006 Review this would occur in the late 2040s which means that the projections are indeed similar to the central scenario. This similarity does disguise two compensating differences; the lower assumed investment return in the current review results in a lower fund, but this is compensated by the “non-aligned” contributions which did not exist in the 2006 Review, which results in a higher fund.

As discussed previously, the actuarial contribution rate is significantly higher and the funding level significantly lower in the current review, this is because of improved life expectancy and a lower discount rate/investment return assumption.



## 8. Recommendations and Options

In formulating options it is first important to ascertain the aims of the RPF and PEF. From discussions with FIG Treasury and from surveying the RPF documentation, there are limited explicit funding aims. However, some implicit aims can be deduced and are desirable:

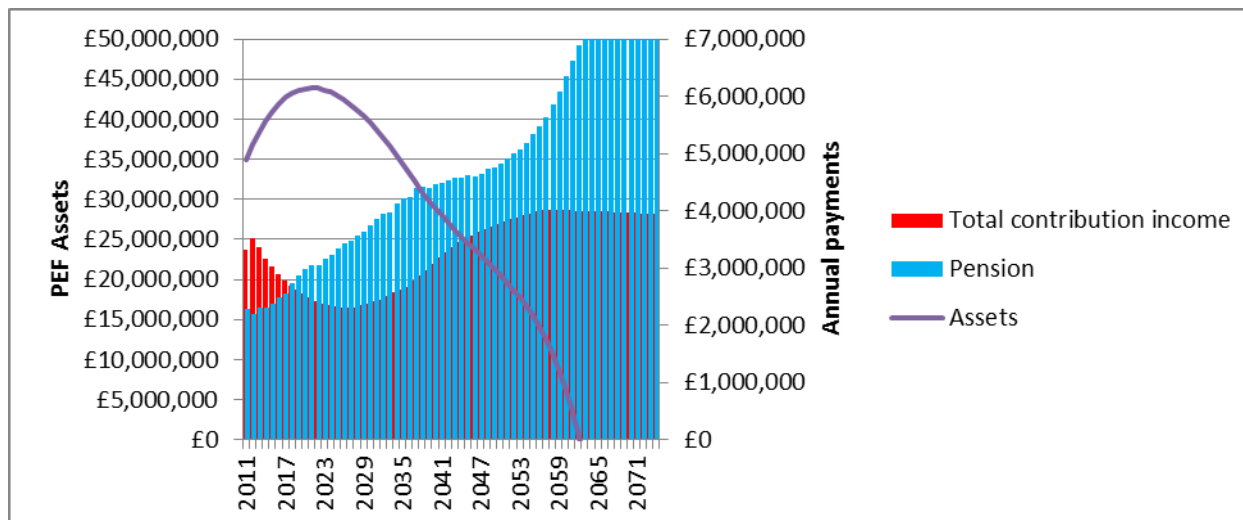
1. To pay contributions equivalent to the actuarial cost of benefits accrued: this has been the assumption of previous reviews. Members and employers pay a rate that has been recommended, the subsidy from the Consolidated Fund appears to have been fixed a while ago, but this does not seem to have been the original intention. Because of the effective subsidy from “non-aligned” contributions, the actuarial rate has been approximately paid in recent years.
2. Buffer fund: it does not appear that the RPF was intended to be fully funded. However, it also does not appear to be desirable for the PEF to run out of money. A happy medium would be for the PEF to have a positive balance throughout the projection period. Maintaining a buffer fund has the added expedient of making the fund resilient to adverse shocks.
3. Livable pension: The RPF appears to be intended to pay a minimum pension which, combined with other savings vehicles offered to Falkland Islanders, should provide a livable income.

In considering the recommendations and options, I have also considered what might be politically viable. In this section, 1 and 2 are covered. 3 is not part of the review, but the issues to be considered are outlined in Annex 1.

### Recommendation - actuarial rate contributions

The contribution rate should be increased to 33.6% of the current standard weekly pension for overseas contributors and 27.1% for local contributors. This rate reflects the actuarial cost of accruing the pension; that is each contribution paid is enough to meet the extra cost of pension incurred from that contribution. FIG should pay a subsidy of 6.5% of the current standard weekly pension rate for all local contributors. For 2011, this would have represented a subsidy from the Government of £644,000.

Paying the actuarial contribution rate will not in itself be enough to stop the PEF from becoming exhausted as can be seen from Chart 11, which projects the PEF, contributions and pensions on the central scenario with the actuarial contributions being paid. The PEF is exhausted by 2063 under the central scenario, which is an improvement on the current situation, but the RPF is still not sustainable. Further options should be considered, of which 2 are presented below.

**Chart 11 – contributions paid at the actuarial cost rate, central scenario****Option 1 – Increased contributions**

Under this option FIG contributes actuarial rate contributions as recommended; that is pays 6.5% of the current standard weekly pension rate for all contributions paid. In addition, FIG pays an extra annual £300,000 subsidy from the Consolidated Fund, but increasing with inflation plus 1% per annum. In subsequent reviews, the RPF targets that the PEF is not exhausted within 60 years under a central scenario. This means that the subsidy should increase every 5 years, but if experience is better than expected it will not.

Under this option the costs start off lower, but increase through the lifetime of the RPF, but the cost is smoothed compared to the PEF becoming exhausted and therefore converting into a pay-as-you-go system. The Government's total subsidy for 2011 would have been £944,000 under this option. The results of this option are presented in Chart 12.

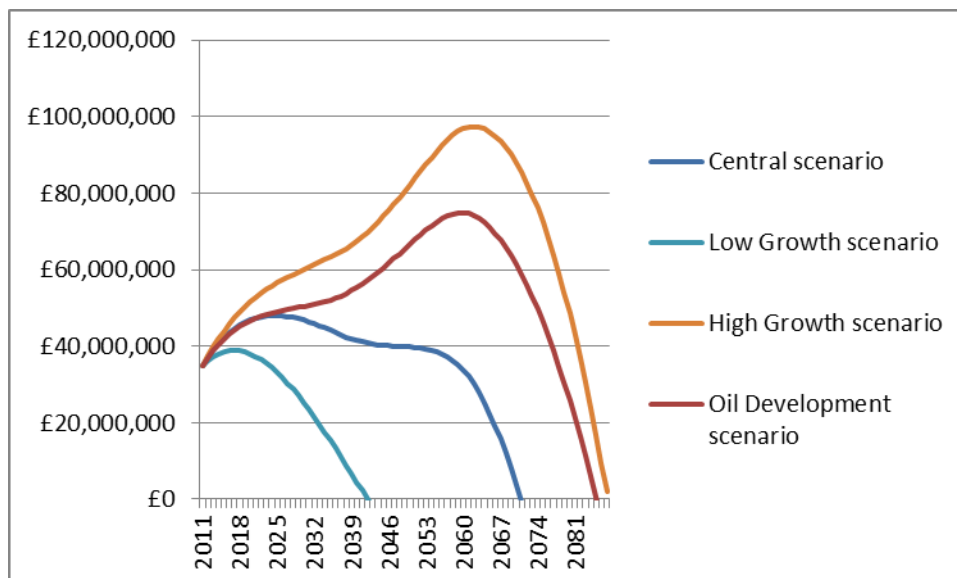
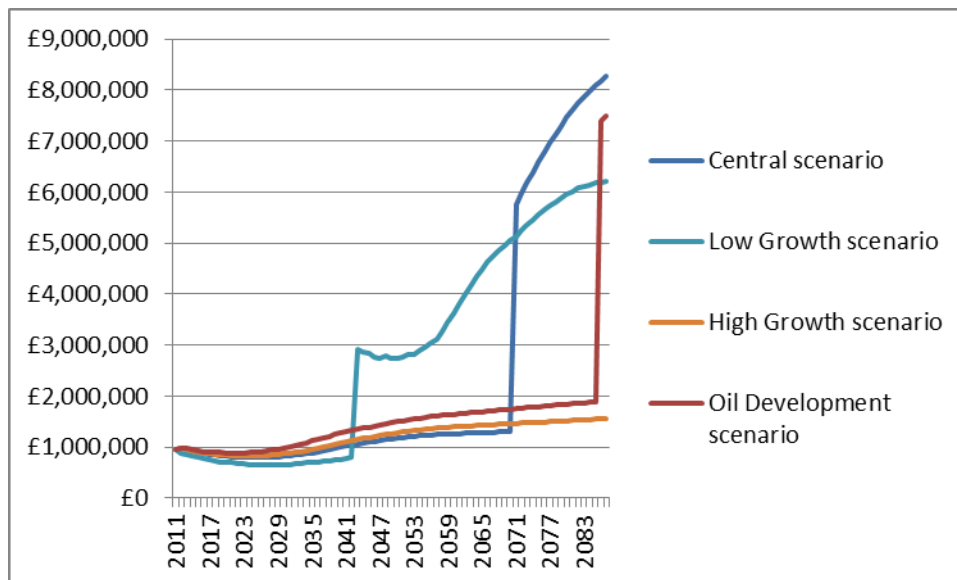
**Chart 12 Fund developments under Option 1**

Chart 12 shows that, under the central scenario, the PEF is projected to be exhausted towards the end of the projection period, after 60 years in the central scenario. Under the oil development and high growth scenarios, the PEF is not exhausted till the end of the projection period. The PEF is not therefore sustainable over the projection period, but FIG has a very long time to monitor experience and further increase contributions as recommended at a future Review dates to maintain the 60 year buffer.

The RPF does remain vulnerable to future shocks though, as shown by the low growth scenario, where the PEF is exhausted in the early 2040s. Chart 13 shows that this scenario could be politically feasible, as the government subsidy is affordable, as the subsidy rises slowly from below £1m per annum, but staying below £2m in all scenarios until the PEF becomes exhausted. Under the low growth scenario, the subsidy jump when the fund becomes exhausted in the early 2040s. In the central scenario, this occurs in the 2070s – but this jump can be avoided by increasing contributions at subsequent reviews (not shown). Under this option, in each subsequent review, the FIG subsidy should be reappraised in the light of experience and increased (or reduced) such that the projected date of exhaustion is continually pushed back beyond the 60 year time horizon.

**Chart 13 FIG subsidy under Option 1**



## **Option 2 – Slow retirement age increase**

Under this option FIG contributes actuarial rate contributions as recommended; that is pays 6.5% of the current standard weekly pension rate for all contributions paid. As an alternative to increasing the subsidy further (as in Option 1) is to reduce the effective cost of the RPF and the fairest and most feasible way of achieving this is through an increase in the retirement age.

Most developed countries are facing increased longevity which is causing pressure on their social security and pensions systems. Many countries are undergoing a programme of reform, which includes increasing their retirement age. For example the UK will raise the pension age from its current level of 65 to 66 by 2020, 67 between 2034 and 2036 and 69 between 2044 and 2046.

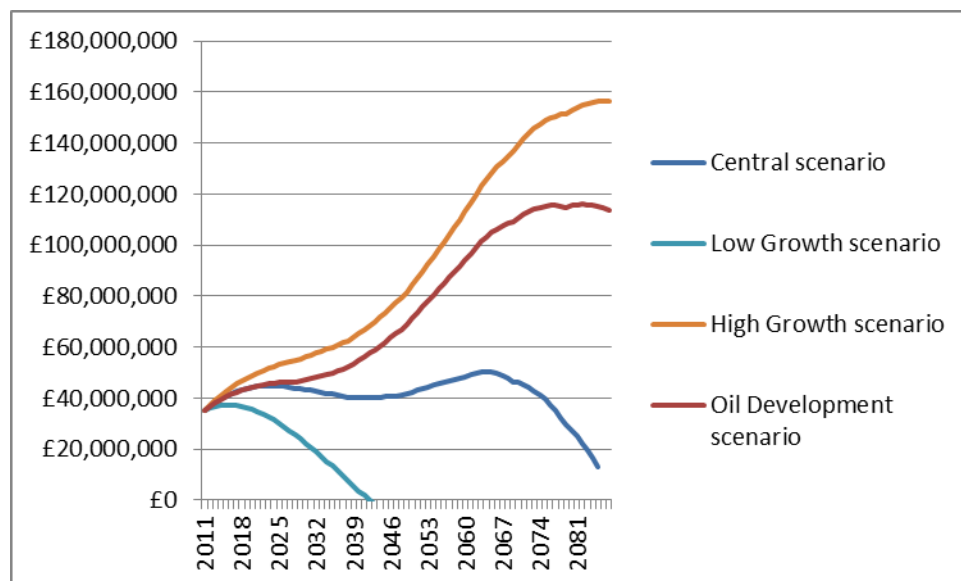
The Falkland Islands faces similar challenges as is demonstrated by Chart 4 above. The ratio of workers to pensioners is projected to decline from its current level of over 5 to around 1.5 under all scenarios. This means that if people continue to retire at 64, there will be fewer and fewer workers available for key jobs, besides any affordability issues of the RPF.

I therefore propose a very gradual increase in the pension age, namely increasing the retirement/pensionable age by 1 year every 10 years commencing in 2020 as set out in Table 14. This approximately keeps pace with increasing life expectancy, and gives FIG and Falkland Islands residents plenty of time to prepare for the increase.

**Table 14 proposed increase in pension age**

Year	Pension age (currently 64)
2012	64
2020	65
2030	66
2040	67
2050	68
2060	69
2070	70

The increase outlined in Table 14 is fairly modest but does render the RPF sustainable, Chart 14 shows that under all except the low growth scenario, the fund should be positive throughout the projection period – that is with contributions increased to the actuarial rate. Again, the RPF is vulnerable to a negative shock, along the lines of the low growth scenario, in which the PEF is projected to become exhausted in 2043 but even under this scenario, the RPF is should be reviewed every 5 years, so even under this scenario. FIG will have the opportunity to monitor the situation and increase contributions to avoid the PEF becoming insolvent if adverse economic or demographic experience dictates that this is required.

**Chart 14 Fund developments under Option 2**

Often when systems increase the retirement age, this is accompanied by equivalent increases in qualification periods. I do not recommend that this is the case here – the qualification period for a maximum period as it stands is 2,200 contributions, which is equivalent to 42 years at the full rate. As many people leave the Falkland Islands for periods of time or do not contribute every week, only a few people will qualify for the maximum pension as it is, and Chart 10 indicates that the average pensioner will only receive a very modest pension, increasing the qualification period will make the situation worse.

## 9. Conclusions

This report presents the findings of the actuarial review as at 31 December 2011.

The review is largely consistent with the 2006 Review carried out by the Government Actuary's Department. Key points are:

1. On a central scenario the PEF's assets will be exhausted by 2046. When the assets are exhausted, FIG will have to cover all of the payments of the RPF which will cause a sudden jump in government support.
2. The year in which the Fund will become exhausted depends on a number of factors, but in particular the impact of the development of oil on the Falkland Islands' economy and number of immigrants, and the long term investment performance of the PEF.
3. The RPF is currently paying a low level of pension (on average 20% of worker's pre-retirement salary) and this is projected to decline to between 7% and 13% of pre-retirement salaries.
4. The Government is currently paying a fixed subsidy of £300,000. In addition, the RPF effectively receives an annual subsidy of around £370,000 from "non-aligned" contributions which are unlikely to be converted into a pension.

The RPF is not sustainable over the projection period, but, if suitable reforms are enacted there is the opportunity to put the RPF on a sustainable footing.

My recommendations are that the contribution rate should be increased to 33.6% of the current pension for Overseas contributors and 27.1% for local contributors. The government should pay a subsidy of 6.5% of the current standard weekly pension rate for all local contributions. For 2011, this would have represented subsidy from FIG of £644,000.

Paying the actuarial contribution rate will not in itself be enough to stop the PEF from becoming exhausted, so the report presents two options, either increasing the FIG subsidy by an extra £300,000 per annum or increasing the retirement/pensionable age by 1 year every 10 years.

### ***Significant risks to the RPF***

Over the projection period, the RPF faces a number of significant risks, which FIG should be aware of and seek to manage. This review cannot hope to identify all possible risks, but the following are highlighted:

***Pension increases:*** The intention of pension increases is to mirror the increase in civil service wages, which increase (approximately) in line with inflation. In 1998 there was a "catch-up" increase when civil servant salaries were reviewed. In this review it is assumed that pensions increase in line with inflation. However, if a future salary reviews is granted along the lines of the 1998 increase, this will have a large impact on the RPF, and actuarial advice should be sought at this time.

***Migration:*** All scenarios, apart from the low growth scenario, assume a level of inward migration to the Falkland Islands to compensate for an ageing population. However, as demonstrated by the low growth scenario, if this is not the case, then the RPF will be in a significantly worse financial situation.

***Non-aligned contributions:*** A significant level of contributions are paid into the PEF which are very unlikely to result in a pension, mainly on behalf of oil workers. This effectively constitutes an additional revenue for the RPF. All scenarios, except for the low growth scenario assume that this practice will continue. However, if this situation changes in the future, then this could put the RPF in a significantly worse financial situation..

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*Note: This report is intended for the Falkland Island Government. The information contained in it relates to the funding position of the Retirement Pension Fund at a particular point in time, taking into account known developments between the valuation date and the date of signing of the report. The impact of subsequent events on the Retirement Pension Fund may cause the position to change significantly.*

## **Annex 1: Discussion of Options for Falkland Islands Pensions Arrangements**

**Provided as separate document**



## **Annex 2: Projections of Retirement Pension Fund and Falkland Islands Population**

**Provided electronically**

## Appendix 1: Benefit and Contribution Structure

Table A1 Benefit and Contribution Structure as at 31 December 2011

Benefit	Details
<b>Retirement Age</b>	64 (60 for widows'/widowers' pension)
<b>Minimum contribution period</b>	250 weeks
<b>Standard weekly rate</b>	Currently Standard pension: £119 Married couple supplement: £67
<b><u>Pension</u></b>	
<b>Joiner post 5 January 1997</b>	Standard weekly rate * number of weeks contributions / 2200
<b>Joiner pre 6 January 1997</b>	Standard weekly rate (provided has > 728 weeks contributions and has made all contributions up to retirement)
<b>Married couple's supplement</b>	Payable if pre 6 January 1997 contributions made and wife below 64 (pro-rated down by same rate as pension, if not receiving a full pension). From age 64, this will be paid if greater than the wife's pension.
<b>Contributions (weekly, as at date of review)</b>	Overseas: £33.50 Local: £27
<b>Earnings limit (weekly, as at date of review)</b>	£180
<b>Death benefit</b>	If over the age of 60, spouse's pension. If in receipt of pension the greater of spouse's or own pension
<b>Categories deemed to contribute under 1952 Ordinance</b>	<ul style="list-style-type: none"> <li>• Woman married pre 6 January 1997</li> <li>• Widow &lt; 60 on 6 January 1997, who contributed in line with 1996 Ordinance, and any contributions pre 6 January 1997</li> <li>• Woman prevented contributing pre 6 January 1997 by reason of age</li> <li>• Late comers: resident pre 6 January 1997 but older than 50.</li> </ul>

## Appendix 2: Actuarial assumptions

All scenarios use the assumptions presented in Table A2. An explanation of the assumptions is provided in the text below the Table.

**Table A2 actuarial assumptions**

<b>Mortality rates</b>	2010 – Based UK population – Principal projection (see below)	
<b>Age retirement:</b>	0% before age 64 and at age 64 is taken as 100%	
<b>Annual Fertility rates AFRs</b>	UK Annual Fertility rates-Constant variant adjusted by factor of 0.7 (see below)	
<b>Leaver rate<sup>15</sup></b>	Number of contributions	% Population leaving (per annum)
	<250	23%
	250-500	17%
	500-750	9%
	>750	5%

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<sup>15</sup> The rates refer to the % of the population with the stated number of contributions, not the % of the overall population.

<b>Re-joiner rate</b>	% of non-active population re-joining:
	Less than 250 contributions: 5%
	More than 250 contributions: 15%

### ***Expenses***

The rate of expenses taken from the fund has historically been around 0.4% and 0.5% as a percentage of the contribution income. We understand that these are just the external expenses, FIG effectively cross subsidise the cost. We have assumed 1% of combined contribution and income and pensions payments.

### ***Mortality***

The country's population is too small in size to elicit statistically significant mortality data.

The United Kingdom, 2010 – Based principal period mortality rates are produced by the Office of the National Statistics as a starting point. However, we have been supplied with a history of the deaths of pensioners (Table A3). The model is predicting approximately 14 deaths a year. Whilst the population is not statistically significant, the model's predictions fall within what actually happens.

Rate of mortality improvement: 1%pa is applied to the mortality rate at each age and for each future year cumulatively. This is consistent with the guidance on mortality projection issued by the UK pension's regulator.

**Table A3 Death of pensioners**

<b>Year</b>	<b>Number of deaths</b>
<b>2004</b>	20
<b>2005</b>	16
<b>2006</b>	20
<b>2007</b>	10
<b>2008</b>	23
<b>2009</b>	15
<b>2010</b>	12
<b>2011</b>	6

***Fertility***

Fertility rates: the United Kingdom, 2010-based Constant fertility variant. This is used to determine the number of births for the child bearing age women between the ages of 16 to 46. This produced 30 births a year per 1000 women. This compares with a total of about 25 -35 births the Falkland Islands over the past 10 years. The Falkland Islands fertility rate has been relatively constant so we have applied a factor of 0.7 to the UK data.

***Investment returns and inflation***

The central scenario assumption is a prudent best estimate assumption based on current financial information. The investment return assumption is quoted as a “real” figure, i.e. inflation has been stripped out, so the assumption represents the return in excess of (Falkland Islands) inflation<sup>16</sup>.

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<sup>16</sup> The inflation assumption will be a negative on the investment return assumption – for a given nominal investment return level, a high inflation assumption will give rise to a lower (real) yield assumption.

**Table A4: Bond yields as at 31 December 2011**

Bond/index	Yield
Over 15 year UK Government bonds:	2.94%
Over 15 year Index linked bonds:	-0.14%
Corporate bond yields:	Gilts + 2-3%

The inflation rate that the market is predicting can be inferred from the difference between the yield on fixed and index linked gilts, which we have rounded to 3%. This is the implied market inflation rate for the UK which will be related but not identical to inflation in the Falkland Islands. Falkland Islands inflation has exceeded UK inflation by around 0.5% per annum (see Table 7 in main report), we understand that oil prices/transport costs have a significant influence on the level of local inflation.

The current gilt yields are implying zero or negative real yields. The PEF is predominantly invested in real assets from which outperformance could be expected for the central scenario<sup>17</sup>. Historically, we would expect an equity risk premium of about 2% pa to 4% p.a. for possible outperformance from equities over gilts. Corporate bond yields are yielding 2-3% above government bond yields.

Given the current economic outlook, for prudence we have therefore used a lower end of the range of 2% above inflation for real (UK) investment returns as a prudent best estimate. However, as Falkland Inflation is persistently higher than that in the UK, we have reduced this by 0.5% to 1.5%.

The low growth and high growth scenarios explore the sensitivity of the PEF to different assumptions if conditions were to turn out differently.

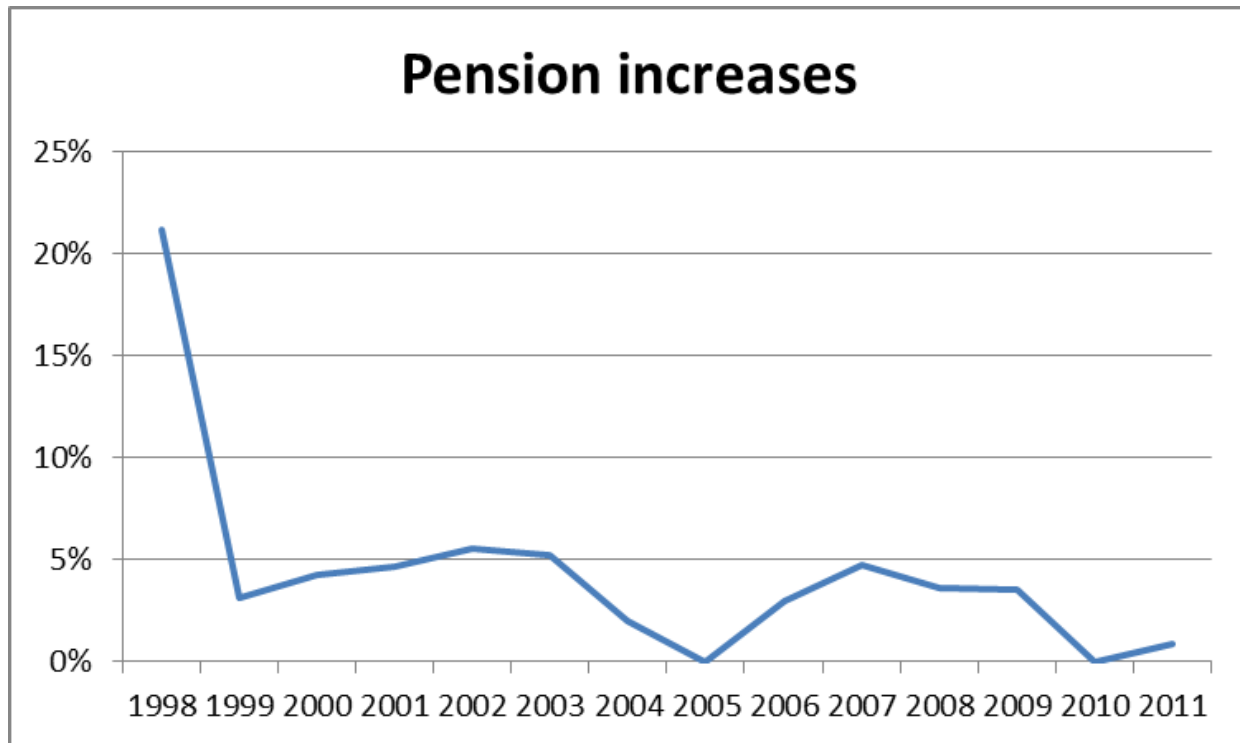
The oil development scenario follows the central scenario. However, under this scenario the Falkland Islands economy grows strongly. This could have two contradictory effects on inflation: the boom will cause inflation, but the expansion of the economy will make transport and hence goods more readily available through economies of scale. We have therefore adjusted the investment return assumption down 0.5% to reflect a net rise inflation of 0.5%.

### **Salary growth**

The historic rates of the increase in pension have not exceeded the rate of inflation as is shown by Chart A1 (and Table 7 above), with the exception of 1998.

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<sup>17</sup> Remembering that this is a best estimate scenario, or “budgeting scenario” in the language of Daykin and Patel (2010) *Actuaries and discount rate* Actuarial Profession

**Chart A1: Historic pension increases**

We understand that the intention of pension increases is to mirror the increase in civil service wages, which increase (approximately) in line with inflation. The 1998 increase was a “catch-up” increase when civil servant salaries were reviewed. After discussions with the FIG Treasury, the most suitable assumption will be that pension increase in line with inflation, with the proviso that FIG are alert to the impact of future salary reviews such as the 1998 one will have a large impact on the RPF, which should therefore be reviewed in advance of granting such an increase.

### ***Migration***

We have been supplied with the following immigration data (Table A5).

**Table A5: Immigration into Falkland Islands**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Permanent Residence Permits issued</b>	10	20	40	24	21	4	0	0	21	26	12
<b>Falkland Islands Status granted by application</b>	2	14	23	5	8	2	7	2	2	12	8

<b>Persons who previously had PRP included</b>	1	7	3	4	0	1	3	2	0	7	0
<b>Falkland Islands Status via grant of Naturalisation</b>	2	4	10	12	9	9	16	0	0	0	0
<b>Persons who previously had FIS included</b>	1	4	1	5	2	8	5	0	0	0	0
<b>Persons who previously had PRP</b>	1	0	9	7	7	1	10	0	0	0	0

The data in Table A5 is accurate but not conclusive as we were unable to obtain emigration data and also there appears to be much short term movement in the population. It does appear from the RPF data, that the population has been approximately stable. I have also been supplied by the following projections from the impact of Sea Lion (Table A6).

**Table A6 Impact on population of development of Sea Lion Oilfield**

<b>Year</b>	<b>Projected Impact</b>
<b>2012/13</b>	Minimal on-shore and off-shore increase
<b>2013/14</b>	Minimal on-shore and off-shore increase
<b>2014/15</b>	100 off-shore personnel from July 2014, 300 off-shore personnel from Jan 2015
<b>2015/16</b>	200 off-shore personnel
<b>2016/17</b>	100 off-shore personnel
<b>2017/18</b>	First oil from Sealion 200 personnel off-shore (FPSO) 75 personnel on-shore (office based)

Table A6 predicts that the Sea Lion Oilfield will clearly have some impact on migration rates into and out of the Falkland Islands. Currently the workers on the oil field are temporary and thus classify as “non-aligned”



contributors; these will not affect the migration to and from the permanent population. However, the 75 on-shore personnel projected in 2017/18 will. It is not clear to what extent these jobs will come from existing population or cause immigration. Furthermore, as the current population structure indicates an ageing population, this will cause a need for immigrants to fill the jobs of retirees. These two effects, ageing and the development of oil, is likely to lead to a net immigration in the central scenario. I have therefore used a cautious assumption of 10 per annum. This increases to 15 per annum in the high growth scenario and 0 in the low growth scenario. The oil development scenario envisages more significant development of oil fields, and hence the net immigration assumption is increased to 25 per annum.

### ***Average number of annual contributions***

The central scenario assumes the current average; that is the average number of contributions made per year, as 37. The high growth scenario and oil development scenarios envisage increased economic activity, which will lead to higher rates of contribution, whereas the low growth scenario envisages lower levels of activity and therefore lower rates of contribution.

### ***Non-aligned contribution***

Currently, there are £368,435 of contributions, which have been termed “non-aligned” contributions. These are contributions from mainly foreign companies, in particular oil companies, who do not register their employees; that is they notify FIG Treasury how many employees they have and pay contributions on their behalf. There is very little likelihood that these employees will ever claim a pension as it is not clear they are even entitled to a pension, they are only in the Falkland Islands (or off-shore) for a short space of time, so to qualify they would have to independently return and settle on the Islands which is highly unlikely. It is assumed in the central scenario and high growth scenario that this practice continues at the current rate. It is assumed, in the low growth scenarios that this practice and the contributions disappear. In the oil development scenario there will be an increased number of off-shore workers, who are likely to be non-aligned; the non-aligned contributions are therefore assumed to increase at 1% per annum (real).

### ***Leavers and re-joiners***

From our analysis of the current and past RPF contributor history, it appears that there is a core group of contributors and a relatively transitory population who contribute and re-contribute. Additionally there are relatively high numbers of people who contribute for less than 250 contributions (the minimum required to receive a pension) but who then never return. The history has been used to set realistic leaver and re-joiner decrements to model these phenomena. The proportion of leavers initially is therefore high at 23% (reflecting actual experience) but decreasing with number of contributions as set out in Table A2. Most contributors who leave with less than 250 contributions never re-join, so the assumption of re-joiners is low to reflect this. However, once contributors qualify for a pension and leave, re-joining rates are higher at 15%. This reflects the demographic patterns: that many people migrate to the Falkland Islands for a few years and then leave, whereas many Falkland Islanders live in different countries for a while before returning to settle in the Falkland Islands.

## Appendix 3: Summary of census population data

Table A7 Census population data

	Female	Male	Total
Unknown	9	21	30
0-4	80	72	152
5-9	92	69	161
10-14	84	68	152
15-19	75	68	143
20-24	76	89	165
25-29	115	88	203
30-34	102	116	218
35-39	124	131	255
40-44	108	158	266
45-49	95	130	225
50-54	108	127	235
55-59	80	109	189
60-64	56	90	146
65-69	54	55	109
70-74	30	42	72
75-79	32	30	62
80-84	22	14	36
85-90	6	12	18
>90	1	3	4
<b>Total</b>	<b>1349</b>	<b>1492</b>	<b>2841</b>

This compares to total figures in 2001 and 2006 of 2,379 and 2,478 respectively.

Table A8: working population grouped by earnings

Earnings band (£ per annum)	Total
<0	5
0-5000	151
5000-10000	220
10000-15000	376
15000-20000	317
20000-25000	252
25000-30000	163
30000-35000	118
35000-40000	69
40000-45000	43
45000-50000	27
>50000	101
<b>Grand Total</b>	<b>1842</b>



## Appendix 4: Summary of contributor data

Table A9: Contributor data

Weeks contributions:	<250	250-749	750-1249	1250-1749	1750-2250	>2250	Grand Total
<b>Total active (by age)</b>	<b>846</b>	<b>500</b>	<b>378</b>	<b>138</b>	<b>51</b>	<b>2</b>	<b>1915</b>
<20	25						25
20-29	237	96					333
30-39	253	159	111				523
40-49	183	120	148	69			520
50-60	135	110	110	64	43		462
>60	13	15	9	5	8	2	52
<b>Total non-active (by age)</b>	<b>1113</b>	<b>778</b>	<b>57</b>	<b>23</b>	<b>8</b>		<b>1979</b>
20-29	135	12					147
30-39	352	238	5				595
40-49	331	265	31	3			630
50-60	264	225	19	19	4		531
>60	31	38	2	1	4		76
<b>Total</b>	<b>1959</b>	<b>1278</b>	<b>435</b>	<b>161</b>	<b>59</b>	<b>2</b>	<b>3894</b>