

# **THAMESWEY SOLAR LIMITED**

## **BUSINESS PLAN 2018**

**Covering the period 2018-2020**

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VAT Number: 129 5595 78

Table of Contents

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<b>TABLE OF CONTENTS</b>	<b>2</b>
<b>1. EXECUTIVE SUMMARY</b>	<b>4</b>
Introduction	4
Purpose	4
Financial Features	4
Financial Requirements	4
Current Business Position	5
<b>2. GENERAL COMPANY DESCRIPTION</b>	<b>5</b>
Legal Entity	5
Ownership & Subsidiary Company	5
Board of Directors	5
Significant Assets	6
Goals and Objectives	6
<b>3. THE OPPORTUNITY &amp; INDUSTRY</b>	<b>6</b>
The Opportunity	6
The Industry	6
<b>4. THE BUSINESS MODEL</b>	<b>7</b>
Sources of Revenue	7
Major Operational Costs	7
Operational Plan	7
Capital Investment	8
Assumptions and Critical Factors in Model	8
<b>5. FINANCIAL PLAN</b>	<b>8</b>
Finance Structure	8
Shareholder Return on Investment	8
Profit & Loss Account	9
Risks and Sensitivities	9
Cash Flow	9
<b>APPENDIX 1: BENEFITS TO WBC FOR 2014 TO 2017</b>	<b>10</b>
<b>APPENDIX 2: PROFIT AND LOSS FORECAST TO 2038</b>	<b>11</b>

**APPENDIX 3: CASH FLOW FORECAST TO 2038**

**12**

## 1. Executive Summary

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### Introduction

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- 1.1 This business plan sets out the proposed strategies for delivering the Thameswey Group companies' activities for the next year and seeks to define their strategic direction for the period up to 2020.
- 1.2 The strategic plan ensures that the focus of activity within each company is clearly aligned with those of Thameswey Limited, and ultimately with the shareholders' strategic objectives. This plan reflects the Board's views on the medium and long term objectives set out in the proposed strategic plans.
- 1.3 This business plan refreshes the 2017 to 2019 business plan. As an established business the plan details expected financial returns for the plan period, and discusses long term projections. Future investment appraisals will be subject to specific business cases.

### Purpose

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- 1.4 Thameswey Solar Limited (TSL) was established in 2011 to further the installation, commissioning and operation of solar photovoltaic (PV) panels throughout the Borough of Woking on Council owned housing, community buildings, and third party owned buildings.

### Financial Features

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- 1.5 In establishing TSL in December 2011 a long term financial target was set at 5.29% annual equivalent return on its investment over the 25 year business plan period. Expected financial returns within the business plan period are commented on in section 4 – Financial Plan.
- 1.6 TSL has the use of intellectual property owned by Thameswey Limited (TL). It is obliged to pay an annual licence fee of £1,000 for the Trademark.
- 1.7 WBC established a framework for financial support by way of share capital (from the ultimate owner and from the Joint Venture partner Total Gas Contracts Ltd) and loan investment to enable TSL to invest in PV. WBC charges a margin over its borrowing costs for the loans to the Group and this directly benefits residents by contributing to the revenue income of WBC. In 2016 Total Gas Contracts Ltd sold their shares to Thameswey Limited (TL) at a discount of circa 50%.

### Financial Requirements

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- 1.8 This business plan sets out the financing requirements for TSL. Additional loan finance will be required in 2021, until 2021, no additional loan finance is required.
- 1.9 This business plan does not propose further investment in new installations. If the company is to make additional capital investment, approval would be sought from the TSL Board, shareholders and the Council before commencement of works.

## Current Business Position

- 1.10 TSL operates roof-mounted PV installations on buildings owned by the Council, local schools, community buildings, Peacocks and the Wolsey Place shopping centre.
- 1.11 The company's PV installations generated 1,028,131 kWh of electricity in 2016, compared with 946,211 kWh in 2015 (an 8.56% increase). The power generated saved approximately 424 tonnes of carbon dioxide (CO<sub>2</sub>) equivalent emissions. The renewable electricity generated by TSL has contributed towards a reduction in the Carbon Reduction Commitment (CRC) of WBC and helped the council reduce its CRC payments.
- 1.12 Over the course of 2016 Thameswey Maintenance Services Ltd. has taken on responsibility for maintenance of the PV installations. This has included converting the remote monitoring of the installations to remove reliance on SunPower for data and performance monitoring.

## 2. General Company Description

### Legal Entity

- 2.1 Thameswey Solar Ltd is a private Limited Company registered in the United Kingdom.

### Ownership & Subsidiary Company

- 2.2 Thameswey Limited originally held 75% of the shares in Thameswey Solar Ltd under a joint venture (JV) agreement with Total Gas Contracts Ltd (TGC) who held the remaining 25% of the share capital. All shares were transferred to TL by the end of January 2016. TL is the holding company of the Thameswey Group and is a 100% subsidiary of Woking Borough Council.
- 2.3 Shareholdings are shown below:

Table 1: Thameswey Solar Ltd Shareholder Equity

Company	Equity Share	Number of £1 Ordinary Shares
Thameswey Limited	100%	1,182,688

### Board of Directors

- 2.4 The current board of Directors is set out below:

Barry Maunders	Independent Director (Chairman)
Cllr. John Kingsbury	Councillor Director
Douglas Spinks	Officer Director
Peter Bryant	Officer Director

- 2.5 The above board composition meets the requirements of the Thameswey Group Protocols as approved by the Council on 8<sup>th</sup> December 2011. In order to be quorate a board meeting must have at least one independent, one Councillor and one officer Director in attendance.

### Significant Assets

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- 2.6 TSL has over 4,900 PV panels located across 35 sites in the Borough. They have a total capacity of 1,238 kWp (kilowatt peak). All installations include telemetry for remote monitoring of components and meter reading.

### Goals and Objectives

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- 2.7 TSL has three primary objectives:
- To support greater use of renewable energy in order to achieve a reduction in carbon dioxide emissions;
  - To promote awareness of the benefits of solar energy to the users of public buildings; and
  - To promote the use of PV and develop projects that help stimulate further investment in the solar energy market locally.
- 2.8 TSL was established to assist WBC in meeting the Councils' Climate Change Strategy. The key principles of the strategy are as follows:
- Reduction of Borough-wide CO<sub>2</sub> equivalent emissions;
  - Adaptation to climate change; and
  - Promotion of sustainable development
- 2.9 TSL will continue to support WBC in achievement of the Climate Change Strategy, which adopted the Government's Climate Change Act (2008) targets for carbon emission reductions i.e. to reduce greenhouse gas emissions by 80% by 2050 against a 1990 baseline.
- 2.10 To facilitate future objectives, due diligence will be channelled through TL.

## 3. The Opportunity & Industry

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### The Opportunity

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- 3.1 There may be opportunities for TSL to assist the Council further in achievement of its Climate Change Strategy.
- 3.2 TSL may provide or tender for new PV or renewable energy installations and may respond positively to invitations to participate in partnership business opportunities to develop new renewable energy installations where the capital for the surveys and installation costs is secured from third parties and a project fee for TSL is secured for intellectual property.

### The Industry

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- 3.3 The PV industry currently requires a high capital upfront investment in a sector with relatively low annual returns and therefore requires a long term business plan.
- 3.4 The UK government has maintained its policy of cutting the financial support for solar power provided through the Feed in Tariff, with large reductions introduced in early 2016. In addition, the

effects of the Brexit referendum on the solar industry are open to speculation. Whilst there is the potential to secure new trade agreements with China and other large manufacturers of components, the general short term view within the industry is that the wider political changes expected as a result of the referendum will fail to lend new support to the renewable energy sector.

#### 4. The Business Model

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##### Sources of Revenue

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- 4.1 TSL receives the following types of income for its operations:
- 4.2 FiT income is paid by energy suppliers for every kWh of electricity generated. The current rates of FiT that TSL receives (as at April 2017) varies between 16.96p/kWh and 38.50p/kWh depending mainly on the registration date. This income is RPI linked and was uplifted in April 2017.
- 4.3 Export tariffs for electricity supplied directly to the National Grid vary depending on the size of the site. Small sites below 30 kWp receive deemed export at 3.57 p/kWh for 50% of the energy generated which is RPI linked. Larger sites receive export income under a Power Purchase Agreement based on metered export to the grid;
- 4.4 Electricity income is received from building owners/occupiers for the sale of a proportion of the electricity consumed onsite; and
- 4.5 A contribution is received from building owners for the cost of maintenance of the PV panels through a service charge.

##### Major Operational Costs

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- 4.6 Apart from depreciation and finance charges the most significant costs that the company incurs are for the operation and maintenance (O&M) of the panels.
- 4.7 Insurance costs are significant and due to the insurance claim for the Goldwater Lodge site the cost of insuring the PV panels has increased in the last year. Since the fire the company has taken out additional insurance to insure against loss of income in the event of arson or other damage.

##### Operational Plan

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- 4.8 TSL will continue to operate the PV panels. During the Business Plan period TMSL will take on greater responsibility for routine maintenance of the installations, including a fault response service and assistance in the optimisation of power output from the installations.
- 4.9 During 2017 approximately half of the company's installations were cleaned. This was carried out as a trial to assess the cost-benefit of cleaning. The performance of these installations will be monitored in comparison to the other installations to assess the impact of cleaning the panels in terms of improved electrical output.

## Capital Investment

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- 4.10 No major additional capital investment has been identified in this plan. However, the company will respond to opportunities to purchase and install PV equipment monitoring system if the business case is favourable.

## Assumptions and Critical Factors in Model

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- 4.11 TSL has a financial model which has been used to make the financial projections in the Business Plan (shown in Schedules 2 and 3). The model is updated annually to reflect the previous year's activity and any updates on performance and inflation forecasts.
- 4.12 The original model that was used as the basis for approval of the project in 2011 has been updated to bring it in line with actual income streams currently anticipated.
- 4.13 The model assumes that inflation will run at 2.5% for the full period of the business plan. In practice short term inflation will vary. Increased inflation will provide an improvement in the return for the company due to increasing revenues and margins.
- 4.14 The performance of solar panels is expected to gradually reduce annually; to account for this the model assumes degradation of PV panels at 0.25% per annum
- 4.15 TSL has not forecast any further investment in new solar PV installations.

## 5. Financial Plan

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### Finance Structure

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- 5.1 TSL is financed by both share capital and loan finance. TL (ultimately WBC) has a total of £1,182,688 in share capital finance in TSL. Approval was given for loan finance of £2,196,000 under a 14 year annuity loan from WBC at an annual interest rate of 6.0%. Up to May 2014, £2,126,000 of the available loan had been drawn down, so TSL has the facility to draw down a further £70,000.
- 5.2 In 2017 TSL will contribute £95,783 to WBC in the form of loan interest; the Council uses this to help reduce Council tax charges to residents of the Borough.
- 5.3 The Council will also benefit from reduced energy charges totalling £17k for the General Fund properties and the housing sites.
- 5.4 Over the 25 year business plan period the net benefit to WBC is expected to generate a shareholder return of over £3m.

**Appendix 1 shows the key financial benefits to WBC of TSL over the plan period.**

### Shareholder Return on Investment

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- 5.5 This business plan is forecasting returns of 3.95%.
- 5.6 A summary of the shareholders returns is below:



**Table 2: Financial Returns**

	£
Shareholders Return	£3,076,739
Less Share Capital	(1,182,688)
Net Shareholders Return	1,894,051
Return on Investment	3.95%
NPV of Shareholders Returns	£714,876

#### Profit & Loss Account

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- 5.7 The budget has been based on historical costs, expected inflation and modelled revenue and expenditure. TSL has a good level of confidence in the budget.

#### Risks and Sensitivities

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- 5.8 One of the biggest risks to the company is variation in the annual output of the panels due to local weather and general atmospheric conditions. The output of the PV panels is directly affected by the level of solar irradiation (insolation) at ground level. It is anticipated that solar irradiance levels will rise at a rate of approximately 1% per annum (ref: EUCAARI (European Integrated project on Aerosol Cloud Climate and Air Quality Interaction) project funded by the European Commission). However, it is considered prudent to forecast solar irradiance to remain at constant levels throughout the plan period. If in future years the annual output of the panels improves due to higher irradiance levels then it may be brought into the plan at a later date and will lead to improved shareholders' returns.

**Appendix 2 shows the forecast Profit & Loss until 2038.**

#### Cash Flow

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**Appendix 3 shows the forecast Cash Flow until 2038.**

Appendix 1: Benefits to WBC for 2014 to 2017

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Description	2016	2017	2018	2019
Net Interest Margin	£75,372	£74,638	£57,981	£52,487
Carbon Dioxide Emission Savings	536 tonnes	522.6 tonnes		
Electricity provided to WBC buildings Free of charge	205,000 KWh	199,000 KWh		
Assist WBC in its Climate Change Strategy				

## Appendix 2: Profit and Loss Forecast to 2038

Year	FIT	Export	Electricity	Maintenance	Total Income	O&M Costs	Insurance	Total Direct Costs	Gross Profit	Indirect Costs	EBITDA	Interest Income	Interest Cost	Profit Before Depreciation	Depreciation	Amortisation of Grant	Net profit	Corporation Tax and C. Tax Relief	Profit After Tax
					£	£	£	£	£	£	£	£	£	£	£		£	£	£
2011	0	0	0	0	0	0	0	0	0	1,028	-1,028	0	0	-1,028	0		-1,028	0	-1,028
2012	118,143	10,149	9,232	14,343	151,867	10,096	5,463	15,559	136,308	28,604	107,704	4,638	48,526	63,816	61,936		1,880	0	1,880
2013	160,598	14,742	23,695	10,778	209,812	8,478	11,159	19,637	190,175	32,755	157,419	410	122,232	35,597	127,424		-91,827	-51,671	-40,156
2014	171,107	16,695	17,897	-6,853	198,846	5,361	12,029	17,390	181,456	18,144	163,312	465	117,808	45,969	31,129	21,055	35,895	-41,936	77,831
2015	160,668	17,809	17,897	6,889	203,263	6,950	8,253	15,203	188,060	25,728	162,332	874	111,465	51,741	65,014	4,785	-8,488	-6,936	-1,552
2016	174,600	15,846	25,504	12,367	228,317	11,263	8,768	20,031	208,286	19,279	189,007	789	103,457	86,339	86,962	4,785	4,162	17,268	-13,106
2017	181,551	15,045	23,387	-13,124	206,860	17,453	12,734	30,187	176,673	17,951	158,722	16	95,783	62,955	80,272	4,785	-12,532	0	-12,532
2018	186,530	15,458	23,825	8,326	234,139	17,418	12,798	30,216	203,923	30,342	183,581	58	87,684	95,955	80,272	4,785	20,468	0	20,468
2019	191,646	15,882	24,275	8,437	240,240	15,804	12,862	28,665	211,575	20,439	191,136	38	78,848	112,327	80,272	4,785	36,840	0	36,840
2020	196,902	16,317	24,739	8,551	246,508	16,199	12,926	29,125	217,383	20,536	196,848	22	69,474	127,395	80,272	4,785	51,908	0	51,908
2021	202,302	16,765	25,215	8,666	252,948	16,604	12,991	29,594	223,353	20,633	202,720	7	60,542	142,185	80,272	4,785	66,698	0	66,698
2022	207,850	17,225	25,705	8,784	259,563	17,019	13,056	30,075	229,489	20,732	208,757	31	53,029	155,759	80,272	4,785	80,272	0	80,272
2023	213,550	17,697	26,209	8,904	266,360	17,444	13,121	30,565	235,794	20,830	214,964	172	41,836	173,299	80,272	4,785	97,812	0	97,812
2024	219,407	18,182	26,727	9,026	273,342	17,880	13,187	31,067	242,275	20,929	221,345	98	29,962	191,481	80,272	4,785	115,994	0	115,994
2025	225,424	18,681	27,260	9,150	280,515	18,327	13,253	31,580	248,935	21,029	227,906	46	17,364	210,587	80,272	4,785	135,100	0	135,100
2026	231,606	19,193	27,808	9,276	287,884	18,786	13,319	32,104	255,779	21,129	234,650	32	2,707	231,974	80,272	4,785	156,487	0	156,487
2027	237,958	19,720	28,372	9,405	295,454	19,255	13,385	32,641	262,813	21,230	241,584	216	11,493	230,307	80,272	4,785	154,820	0	154,820
2028	244,484	20,260	28,951	9,536	303,231	19,737	13,452	33,189	270,042	21,331	248,712	5,452	11,493	242,671	80,272	4,785	167,184	0	167,184
2029	251,189	20,816	29,547	9,669	311,221	20,230	13,520	33,750	277,472	21,433	256,039	10,076	0	266,115	80,272	4,785	190,628	0	190,628
2030	258,078	21,387	30,160	9,805	319,430	20,736	13,587	34,323	285,107	21,535	263,572	15,398	0	278,970	80,272	4,785	203,483	0	203,483
2031	265,155	21,974	30,790	9,943	327,862	21,254	13,655	34,909	292,953	21,637	271,316	21,877	11,493	281,700	80,272	4,785	206,213	0	206,213
2032	272,427	22,576	31,438	10,084	336,525	21,785	13,723	35,509	301,016	21,741	279,276	23,671	0	302,947	80,272	4,785	227,460	0	227,460
2033	279,899	23,195	32,104	10,227	345,425	22,330	13,792	36,122	309,303	21,844	287,459	25,606	0	313,065	80,272	4,785	237,578	0	237,578
2034	287,575	23,831	32,789	10,373	354,568	22,888	13,861	36,749	317,819	21,949	295,870	27,318	0	323,189	80,272	4,785	247,702	0	247,702
2035	295,462	24,485	33,493	10,522	363,961	23,461	13,930	37,391	326,570	22,053	304,517	29,030	0	333,547	80,272	4,785	258,060	0	258,060
2036	303,565	25,156	34,217	10,673	373,611	24,047	14,000	38,047	335,564	22,159	313,405	30,747	0	344,153	80,272	4,785	268,666	0	268,666
2037	49,383	25,846	34,961	10,827	121,017	24,648	14,070	38,718	82,299	22,264	60,034	32,469	0	92,503	1,230,546	65,084	-1,072,958	0	-1,072,958
					6,992,769	455,452	326,895	782,347	6,210,422	569,263	5,641,160	229,556	1,075,195	4,795,521	3,208,451	191,409	1,778,480	-83,275	1,861,755

Appendix 3: Cash Flow Forecast to 2038

Year	Period	Total Income	Direct Costs	Indirect Costs	Loans Received	Loan Repayment	Loan Interest	Bank Interest	Grant	Share Capital	Capital Expenditure	Corporation Tax	Dividends	Working Capital	Net Cash Flow	Accumulated Cash Flow
2011	0	£0	£0	-£1,028	£0	£0	£0	£0	£0	£1	-£140,027	£0	£0	£141,054	£0	£0
2012	1	£151,867	-£15,559	-£28,604	£2,046,418	£0	-£17,829	£4,638	£0	£1,182,687	-£3,070,323	£0	£0	-£231,783	£21,512	£21,512
2013	2	£209,812	-£19,637	-£32,755	£80,000	-£102,045	-£121,277	£410	£0	£0	£6,236	£0	£0	£23,299	£44,042	£65,554
2014	3	£198,846	-£17,390	-£18,144	£0	-£110,584	-£121,132	£465	£191,409	£0	-£4,337	£51,671	£0	£30,747	£201,552	£267,106
2015	4	£203,263	-£15,203	-£25,728	£0	-£119,712	-£113,058	£1,870	£0	£0	£0	£41,936	£0	£25,143	-£1,489	£265,617
2016	5	£228,317	-£20,031	-£19,279	£0	-£127,002	-£105,768	£903	£0	£0	£0	-£17,268	£0	-£25,488	-£85,616	£180,001
2017	6	£206,860	-£30,187	-£17,951	£0	-£134,737	-£97,804	£16	£0	£0	£0	£0	£0	£32,029	-£41,774	£138,227
2018	7	£234,139	-£30,216	-£20,342	£0	-£142,942	-£89,828	£55	£0	£0	£0	£0	£0	£0	-£49,134	£89,093
2019	8	£240,240	-£28,665	-£20,439	£0	-£151,647	-£81,123	£36	£0	£0	£0	£0	£0	£0	-£41,598	£47,495
2020	9	£246,508	-£29,125	-£20,536	£0	-£160,883	-£71,887	£19	£0	£0	£0	£0	£0	£0	-£35,903	£11,592
2021	10	£252,948	-£29,594	-£20,633	£90,000	-£170,680	-£62,090	£5	£0	£0	£0	£0	£0	£0	£59,955	£71,546
2022	11	£259,563	-£30,075	-£20,732	£0	-£181,075	-£55,745	£29	£0	£0	£0	£0	£0	£0	-£28,034	£43,512
2023	12	£266,360	-£30,565	-£20,830	£0	-£192,102	-£44,718	£148	£0	£0	£0	£0	£0	£0	-£21,708	£21,804
2024	13	£273,342	-£31,067	-£20,929	£0	-£203,801	-£33,019	£74	£0	£0	£0	£0	£0	£0	-£15,401	£6,403
2025	14	£280,515	-£31,580	-£21,029	£0	-£216,213	-£20,607	£22	£0	£0	£0	£0	£0	£0	-£8,893	-£2,489
2026	15	£287,884	-£32,104	-£21,129	£0	-£202,995	-£5,415	£0	£0	£0	£0	£0	£0	£0	£26,240	£23,751
2027	16	£295,454	-£32,641	-£21,230	£0	£0	£0	£166	£0	£0	£0	£0	£0	£0	£241,750	£265,501
2028	17	£303,231	-£33,189	-£21,331	£0	£0	-£22,985	£5,310	£0	£0	£0	£0	£0	£0	£231,037	£496,537
2029	18	£311,221	-£33,750	-£21,433	£0	£0	£0	£9,931	£0	£0	£0	£0	£0	£0	£265,970	£762,507
2030	19	£319,430	-£34,323	-£21,535	£0	£0	£0	£15,250	£0	£0	£0	£0	£45,448	£0	£324,270	£1,086,777
2031	20	£327,862	-£34,909	-£21,637	£0	£0	£0	£21,736	£0	£0	£0	£0	-£203,335	£0	£89,716	£1,176,493
2032	21	£336,525	-£35,509	-£21,741	£0	£0	£0	£23,530	£0	£0	£0	£0	-£206,072	£0	£96,734	£1,273,227
2033	22	£345,425	-£36,122	-£21,844	£0	£0	£0	£25,465	£0	£0	£0	£0	-£227,319	£0	£85,605	£1,358,832
2034	23	£354,568	-£36,749	-£21,949	£0	£0	£0	£27,177	£0	£0	£0	£0	-£237,436	£0	£85,611	£1,444,442
2035	24	£363,961	-£37,391	-£22,053	£0	£0	£0	£28,889	£0	£0	£0	£0	-£247,560	£0	£85,846	£1,530,288
2036	25	£373,611	-£38,047	-£22,159	£0	£0	£0	£30,606	£0	£0	£0	£0	-£257,919	£0	£86,092	£1,616,380
2037	26	£121,017	-£38,718	-£22,264	£0	£0	£0	£32,328	£0	£0	£0	£0	-£268,524	£0	-£176,162	£1,440,218
2038	27	£0	£0	£0	£0	£0	£0	£28,804	£0	£0	£0	£0	-£1,474,023	£5,000	-£1,440,218	£0
<b>Totals:</b>		<b>£6,992,769</b>	<b>-£782,347</b>	<b>-£569,263</b>	<b>£2,216,418</b>	<b>-£2,216,418</b>	<b>-£1,064,284</b>	<b>£257,879</b>	<b>£191,409</b>	<b>£1,182,688</b>	<b>-£3,208,451</b>	<b>£76,339</b>	<b>-£3,076,739</b>	<b>£0</b>		<b>£0</b>