## 2012 Market Consistent Embedded Value

Supplementary information – 15 March 2013



### Market Consistent Embedded Value

Supplementary information regarding Market Consistent Embedded Value 2012 of Storebrand Life Group.

#### **MAIN FEATURES**

- Embedded value of Storebrand Life Group was NOK 21,802 million at year-end 2012.
- The total embedded value earnings for the financial year 2012 were NOK -3,056 million, representing -12.4% return on the opening embedded value. The operating earnings were NOK 530 million, representing an operating return of 2.2%.
- The value of new business written in 2012 was NOK 426 million (at point of sale).
- The embedded value calculations are compliant with EEV Principles using a market consistent approach.
- An external review of the embedded value has been carried out by Towers Watson.

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#### I. INTRODUCTION

This document discloses the 2012 Market Consistent Embedded Value (MCEV), hereby denoted embedded value, for Storebrand Life Group. It includes business written in Storebrand Livsforsikring AS (SBL) and the Swedish life insurance companies SPP Livförsäkring AB and SPP Liv Fondförsäkring AB (jointly referred to as SPP).

The Embedded Value is a measure of the consolidated value of shareholders' interests in the covered business.

The calculation of embedded values requires a number of assumptions with respect to the business, operating, demographic, and economic conditions, as well as factors determined by financial markets. Although the operating and

demographic assumptions used represent estimates which Storebrand considers reasonable, actual future operating conditions and actual future experience may vary from those assumed in the calculation of the embedded value, and such variations may be material. Consequently, the inclusion of embedded value information herein should not be regarded as a statement by Storebrand, Towers Watson, or any other person, that the stream of future after-tax profits used to determine the embedded value will be achieved with certainty.

#### II. RESULTS FOR STOREBRAND LIFE GROUP

All results are presented in NOK.

The total embedded value as at 31 December 2012 for the life insurance business of Storebrand Life Group after capital movements is NOK 21,802 million. The value of in-force business (VIF) at year-end 2012 is NOK 11,385 million while shareholder surplus is NOK 10,417 million. The VIF includes the present value of future shareholder profits (PVFP) in a certainty equivalent scenario (including profits arising in the

asset management companies of Storebrand Group induced by its life insurance business), an allowance for the time value of options and guarantees (TVOG), frictional costs of holding required capital (FCRC) and an allowance for cost of residual non-hedgeable risks (CNHR).

#### **Embedded value for Storebrand Life Group**

The following table shows the embedded value at year-end 2012 as well as the published and the restated embedded value at year-end 2011:

	Published	Restated	
NOK mill.	MCEV 2011	MCEV 2011	MCEV 2012
Total shareholder surplus at market value	8,575	8,575	10,417
comprising			
- Free surplus	606	606	2,407
- Required capital	7,969	7,969	8,010
Value of In-force business	16,406	16,184	11,385
comprising			
- PVFP	29,778	29,463	22,290
- TVOG	-8,543	-8,498	-6,847
- FCRC	-186	-182	-975
- CNHR	-4,643	-4,598	-3,084
Total embedded value	24,981	24,759	21,802
Look through value included in the PVFP	3,098	3,098	2,245

Due to low materiality compared to the effort of production, the value of in-force of Euroben Life & Pension Limited has not been included in the embedded value for Storebrand Life Group 2012. The restated MCEV 2011 represents the embedded value for Storebrand Life Group as of 31 December 2011, excluding value of in-force for Euroben.

An implied discount rate (IDR) of 10.0% at year-end 2012 has been derived for Storebrand Life Group (10.5% for SBL and 9.2% for SPP). The approach for deriving the IDR is described in Section V.

In 2012, the Norwegian Ministry of Finance published new tax regulations with effect as of 1<sup>st</sup> January 2012. At publication of embedded value 2011 uncertainties regarding implementation of the tax regulation remained, and embedded value for 2012 is the first where the change in the effective tax rate is reflected. The Storebrand Group has a tax loss carried forward of NOK 7.2 billion. However, this has not been accounted for in the embedded value given the low effect in the risk neutral valuation approach of the embedded value calculation, and that the major part of it is assumed being consumed by other business lines within the Storebrand Group.

#### 2012 Embedded value earnings analysis

The following chart shows the embedded value earnings:



The following table shows the movements in the embedded value in 2012:

	Analysis of MCEV Earnings							
NOK mill.	Free Surplus	Required Capital	Value of In-force	Total MCEV				
(1) Published MCEV 2011	606	7,969	16,406	24,981				
(2) Restatement	0	0	-223	-223				
(3) Restated MCEV 2011	606	7,969	16,183	24,759				
(4) Opening adjustments	0	0	-206	-206				
(5) Opening MCEV	606	7,969	15,977	24,552				
(6) New business value	-440	91	780	431				
(7) Expected existing business contribution (reference rate)	209	0	334	542				
(8) Expected existing business contribution (in excess of ref. rate)	955	8	223	1,186				
(9) Transfers from VIF and required capital to free surplus	970	-18	-952	0				
(10) Experience variances	-134	0	1,694	1,561				
(11) Assumption changes	0	0	-4,394	-4,394				
(12) Other operating variance	1,842	-1,842	1,204	1,204				
(13) Operating MCEV earnings	3,402	-1,761	-1,111	530				
(14) Economic variances	321	-55	930	1,196				
(15) Other non operating variance	-451	0	-4,331	-4,782				
(16) Total MCEV earnings	3,272	-1,815	-4,512	-3,056				
(17) Closing adjustments	-1,471	1,856	-80	305				
(18) Closing MCEV	2,407	8,010	11,385	21,802				

#### Detailed description of embedded value earnings

Technical terms are described in section V. Methodology

**Taxation:** Due to new tax regulations as of  $1^{st}$  January 2012, a change in the effective tax rate is included in the Embedded Value calculation for 2012. The effect of the new regulation is shown in step 15 (Other non-operating variances). For consistency, all movements shown after step 5 (Opening MCEV) are after the change in the effective taxation.

- **1) Published MCEV 2011:** *Published embedded value at vear-end 2011.*
- **2) Restatement:** Changes from published to restated Embedded Value.

For materiality reasons it has been decided to exclude value of in-force from Euroben from the scope of the MCEV. The impact on the published MCEV 2011 is NOK -223 million.

- **3) Restated MCEV 2011:** Restated embedded value at year-end 2011 after exclusion of value of in-force for Euroben.
- **4) Opening adjustments:** Adjustments to the restated embedded value from the previous year-end.

In 2012, the Swedish operations have been restructured: SPP Liv Fondförsäkring AB has changed from being a subsidiary company of SPP Livförsäkring to being its sister company. This led to an increase in cost of non-hedgeable risk (CNHR) of NOK 206 million caused by reduced diversification as the CNHR calculation had been performed on an aggregated level in the previous calculations.

- **5) Opening MCEV:** Embedded value at year-end 2011 after restatement and opening adjustments.
- **6) New business value:** Value of new business (VNB) in 2012 based on year-end 2012 assumptions.

VNB at point of sale and using year-end 2012 exchange rates is NOK 426 million. VNB as shown in the embedded value earnings of NOK 431 million is based on year-end 2011 exchange rates and includes the unwinding to year-end 2012.

**7) Expected existing business contribution (reference rate):** This item reflects the unwinding of the discounting included in the present value components. Additionally, the risk free return on the shareholder surplus is shown in the free surplus column.

The total expected existing business contribution of NOK 542 million comprises the unwinding of the value of in-force of NOK 334 million and the risk free return on the shareholder surplus of NOK 209 million.

8) Expected existing business contribution (in excess of reference rate): The existing business contribution in excess of reference rate reflects the additional return on the opening MCEV in line with management expectations for the business. In this step, "real world" returns described in Section VI are assumed for the first year (2012). Also, the excess return includes the release of the allowance for options and guarantees (TVOG) and non-hedgeable risks (CNHR) for the year 2012.

The total expected return over risk-free rate at the end of 2012 was NOK 1,186 million.

In total, the expected existing business contribution (points 7 and 8 above) amounts to NOK 1,728 million which represents an expected return of 7,0% on the opening MCEV.

9) Transfers from VIF and required capital to free surplus: Profits for 2012 that were capitalized at the previous year-end are moved from the VIF into the shareholder surplus. There is no impact on the embedded value earnings as these profits were expected to emerge at the previous year-end. This item also includes the expected development of the required capital with a corresponding movement in the free surplus.

The transfer from VIF to the free surplus amounts to NOK 952 million. Additionally, the required capital has decreased by NOK -18 million with a corresponding increase in the free surplus.

**10) Experience variances:** These variances result from deviations between actual and expected profits due to operational and actuarial considerations. Experience variances consist of effects on the 2012 profits (shown in the column "Free surplus") and effects on the future profits (shown in the column "Value of In-force").

The total experience variances amount to NOK 1,561 million, comprising NOK 1,631 million from SBL and NOK -70 million from SPP.

The positive variance for SBL is mainly caused by better than expected persistency (including growth in business volume from new members on existing schemes in DC business) and increased buffers for guaranteed business as a result of management decisions, with a total effect on future profits of NOK 1,897 million. Implementation of the new cost program caused one-off expenses which led to a lower than expected administration result for 2012 of NOK -106 million.

For SPP, better than expected risk results led to a positive variance of NOK 109 million. Increased lapse experience and other changes in customer behavior have a negative effect of NOK -202 million.

**11) Assumption changes:** Changes in actuarial and operational assumptions from 2011 to 2012, which affects the VIF only.

The total effect of changes in assumptions for the group in 2012 amounts to NOK -4,394 million comprising NOK -4,119 million from SBL and NOK -276 million from SPP.

For SBL, expectations of higher lapse on public DB business, in accordance to strategy, and no new members on existing DB schemes lead to a negative effect of NOK -2,385 million. Increased reserve strengthening due to new longevity assumptions leads to a negative effect of NOK -2,048 million. A positive effect of NOK 576 million comes from higher turnover on DC business which leads to increased number of profitable paid-up policies.

Negative assumption changes in SPP can mainly be explained by lower expectations regarding future levels of new members on existing DB schemes and increased lapse assumptions for DC and Unit Linked business which have a joint negative effect of NOK -406 million. Updated life expectations have a positive effect of NOK 155 million.

While some one-off expenses have been excluded from the derivation of expense assumptions (see 10 above), it should be noted that no future cost reductions due to the cost program have been taken into account.

**12) Other operating variances:** This item comprises changes in management policies for profit sharing, investment strategy, etc. Additionally, this item includes model improvements and corrections.

The total other operating variances amount to NOK 1,204 million. For SBL, the effect is NOK 1,182 million. This comes from asset de-risking of guaranteed business and more detailed modeling of non-guaranteed business which shows lower future expenses.

For SPP, implemented de-risking measures and updated management actions lead to a positive effect of NOK 55 million. Corrections to underlying models have a negative effect of NOK -176 million.

**13) Operating MCEV earnings:** Sum of items 6) to 12). These earnings are under management control in contrast to economic earnings.

The total operating MCEV earnings amount to NOK 530 million representing a return on the opening MCEV of 2.2%.

**14) Economic variances:** The economic variances are divided into effects on the 2012 profit and all future profits. The variances in the shareholder surplus comprise the impact of the investment performance in 2012 on shareholder profits and movements in the required capital. The change in VIF represents the effect on future profits from the change in the economic environment during 2012.

Total economic variances in 2012 amount to NOK 1,196 million. Lower interest rates have a negative effect which is more than offset by the higher than expected investment performance in 2012. The 10-year spot rate derived from the swap curve has decreased from 3.6% to 3.2% in Norway and from 2.3% to 2.1% in Sweden.

For SBL, economic variances are NOK 361 million, divided into NOK 86 million from increased value of in-force and NOK 275 million from higher results than expected in 2012. The value of in-force for guaranteed business is negatively affected by lower interest rates, whereas the value of non-guaranteed business has increased due to the corresponding lower discount rates and high financial return in 2012.

For SPP, economic variances are NOK 640 million. As for SBL, the lower yield curve leads to a negative effect while positive investment returns and the associated increase in policyholder buffers have a positive effect.

**15) Other non-operating variances:** Regulatory changes implemented in 2012 and other non-operating changes are shown in this item (e.g. changes in tax laws or other business related laws).

For SBL, the effect of other non-operating variances is NOK -4,088 million, mainly caused by new tax regulations. An effective tax rate of 27% has been applied on all value of inforce elements as well as on the return on required capital.

For SPP, new tax regulations have caused a change in the assumed effective tax rate which has previously been 0%. The new regulation implies company tax of 22% on returns on shareholder capital and on profits from risk business, with an effect of NOK -694 million.

**16) Total MCEV earnings:** Sum of items 13) to 15).

The movements from 31 December 2011 to 31 December 2012 show MCEV total earnings of NOK –3,056 million. This represents a return of opening MCEV of -12.4%, divided into economic variances and other non-operating variances of -14.6% and operating earnings of 2.2%.

**17) Closing adjustments:** Under this item, changes in the exchange rate to NOK, dividends and other capital movements are shown.

Aggregated closing adjustments amount to NOK 305 million, comprising a capital injection of NOK 550 million from Storebrand ASA to SBL, look through profits retained by asset management of NOK -31 million and finally the effect of the change in the exchange rate between the Norwegian and the Swedish currency with NOK -212 million.

**18) Closing MCEV:** MCEV for the Storebrand Life Group at year-end 2012.

#### Value of new business (VNB)

The following table shows the consolidated value of new business written in 2012:

NOK mill.	
Value of New Business	
comprising	
- PVFP	641
- TVOG	-98
- FCRC	-18
- CNHR	-99
Total value of new business	426
Look through	105

#### New business margins

The following table shows the new business margins for the business written in 2012:

NOK mill.	
Value of New Business	426
PVNBP Margin 2012	2.9 %
- PVNBP	14,579
APE Margin 2012	24%
- New Regular premiums	1,171
- New Single premiums	5,885
- Annual Premium Equivalent (APE)	1,760
PVNBP Margin 2011	2.8 %
APE Margin 2011	25%

The implied discount rate for the new business amounts to 6.8%, the internal rate of return 15.6%.

#### Sensitivities for Storebrand Life Group

The following sensitivities have been carried out for the embedded value. The sensitivities reflect changes in single assumptions unless stated otherwise.

#### Sensitivities 1 & 2:

A parallel shift of 100 basis points is applied to the starting yield curve. The market values of bonds are adjusted accordingly. It should be noted that a 100 basis points parallel shift for the entire yield curve has been reflected. (The extrapolation method described in Section VI has not been applied to the shifted curve.)

#### Sensitivities 3 & 4:

The initial market values of all equity and property holdings are reduced by 10% (in Sensitivity 4 only equity market values have been reduced). Dynamic risk management does not apply to this sudden shock, but contributes to reduced risk in the portfolios for the remaining projection period.

#### Sensitivity 5:

Mortality rates are reduced by 5% going forward for annuity business only.

#### Sensitivity 6:

Mortality rates are reduced by 5% going forward for life business only.

#### Sensitivity 7:

Future maintenance expenses are reduced by 10%.

#### Sensitivity 8:

Macro extrapolation methodology as in Solvency II.\*

The following table shows the sensitivity results for the embedded value at year-end 2012:

NOK mill.	Total MCEV	Total Change	Change SBL	Change SPP	Total change in %
Base	21,802	Change	3DL	SFF	change iii /
1. 100 basis point pa increase in the interest rate	23,418	1,617	1,345	272	7%
2. 100 basis point pa decrease in the interest rate	17,557	-4,244	-3,252	-992	-19%
3. 10% decrease in equity/property capital	20,001	-1,800	-1,054	-747	-8%
4. 10% decrease in equity capital	20,967	-835	-212	-623	-4%
5. Mortality rates -5% - annuity business	20,894	-908	-378	-530	-4%
6. Mortality rates -5% - life business	21,930	128	128	0	1%
7. 10% decrease in maintenance expenses	23,325	1,523	788	735	7%
8. Solvency II interest rate curve*	17,948	-3,854	-2,205	-1,648	-18%

\*In addition to the standard sensitivities, a macro extrapolation sensitivity is presented above:

The macro extrapolation sensitivity has been performed with regards to a potential change of the macro extrapolation methodology that Storebrand currently uses for embedded value calculations. For this sensitivity, the preliminary methodology of Solvency II, according to Storebrand's latest interpretation, is used to create the base scenario for the interest rate curve: The liquid part of the Solvency II curve is derived from swap rates with a 10 basis point adjustment for credit risk. The last liquid point is 10 years, and the convergence window to the ultimate forward rate of 4.2% is 10 years. No other adjustments to the yield curve have been applied.

The effect on MCEV for Storebrand Life Group of a change to this interest rate curve would be NOK -3,854 million (decrease on embedded value of -18%). Note that this sensitivity does not include updated CNHR or other secondary effects.

EIOPA proposes to use such a curve to represent markets that are not "deep and liquid". In constructing the curve, parameters must be set to specify the last liquid point of the market curve and both the level of long rates and at what point in time one should expect the long rate to materialize. This process should still be regarded as work in progress, as methodology and level of these parameters may change from EIOPA.

#### **III. RESULTS BY COMPANY**

In this section the values of in-force and values of new business are shown for SBL and SPP separately on a legal entity basis.

#### **Results for SBL**

The following table shows the VIF for SBL at year-end 2011 (restated) and 2012, and by portfolio:

2	•			•			
NOK mill.	VIF 2011	VIF 2012	Fee	20/80	35/65	DC/UL	Risk
Value of In-force business							
comprising							
- PVFP	22,680	16,043	2,943	2,942	322	8,121	1,715
- TVOG	-7,742	-6,710	-1,404	-5,058	-248	0	0
- FCRC	-92	-585	-168	-337	-36	-25	-18
- CNHR	-3,405	-1,885	-328	-731	-78	-732	-16
Total Value of in-force business	11,440	6,863	1,043	-3,184	-41	7,364	1,681
Look through value included in the PVFP	2,314	1,543	193	390	42	917	2

The following table shows the VNB for SBL by portfolio:

NOK mill.	Total	Fee	20/80	DC/UL	Risk
Value of New Business					
comprising					
- PVFP	509	85	39	347	38
- TVOG	-98	-45	-53	0	0
- FCRC	-10	-5	-4	-1	0
- CNHR	-62	-11	-8	-42	-1
Total value of new business	338	23	-26	304	37
Look through value included in the PVFP	63	6	4	53	0

The following table shows the new business margins for 2011 (restated) and 2012:

The following date shows the new business margins for 2011 (restated) and 2012.						
Total	Fee	20/80	DC/UL	Risk		
338	23	-26	304	37		
3.4 %	0.7 %	-14.4 %	5.1 %	10.6 %		
10,010	3,554	181	5,914	350		
37%	6%	-157%	63%	60%		
457	125	0	270	62		
4,684	2,353	167	2,161	0		
926	360	17	486	62		
2.5 %	1.4 %	-5.0 %	2.8 %	25.1 %		
32%	23%	-48%	29%	191%		
	Total  338  3.4 % 10,010  37% 457 4,684 926  2.5 %	Total         Fee           338         23           3.4 %         0.7 %           10,010         3,554           37%         6%           457         125           4,684         2,353           926         360           2.5 %         1.4 %	Total         Fee         20/80           338         23         -26           3.4 %         0.7 %         -14.4 %           10,010         3,554         181           37%         6%         -157%           457         125         0           4,684         2,353         167           926         360         17           2.5 %         1.4 %         -5.0 %	Total         Fee         20/80         DC/UL           338         23         -26         304           3.4 %         0.7 %         -14.4 %         5.1 %           10,010         3,554         181         5,914           37%         6%         -157%         63%           457         125         0         270           4,684         2,353         167         2,161           926         360         17         486           2.5 %         1.4 %         -5.0 %         2.8 %		

Fee based business: Defined benefit group pension schemes 20/80: Paid-up policies from DB schemes with 20/80 profit sharing

35/65: Traditional life and saving business with 35/65 profit sharing

DC/UL: Defined contribution and Unit Link

Risk: Individual risk products and group life

#### **Results for SPP**

The VIF for SPP at year-end 2011 (restated) and 2012, and by product, are shown below.

NOK mill.	VIF 2011	VIF 2012	DB	DC	UL	Risk
Value of In-force business						
comprising						
- PVFP	7,098	6,247	1,803	445	3,683	316
- TVOG	-801	-137	-61	-76	0	0
- FCRC	-94	-390	-145	-219	-23	-3
- CNHR	-1,237	-1,198	-446	-271	-477	-5
Total Value of in-force business	4,966	4,521	1,151	-121	3,183	308
Look through value included in the PVFP	784	702	65	61	576	0

The following table shows the VNB for SPP by product:

NOK mill.	Total	DC	UL	Risk
Value of New Business				
comprising				
- PVFP	132	-43	170	5
- TVOG	-1	-1	0	0
- FCRC	-8	-2	-6	0
- CNHR	-36	-3	-33	0
Total Value of in-force business	88	-48	131	4
Look through value included in the PVFP	42	1	41	0

The following table shows the 2011 (restated) and 2012 new business margins for SPP:

NOK mill.	Total	DC	UL	Risk
Value of New Business	88	-48	131	4
PVNBP Margin 2012	1.9 %	-9.7 %	3.3 %	3.3 %
- PVNBP	4,570	496	3,942	132
APE Margin 2012	10%	-56%	18%	13%
- New Regular premiums	714	63	619	32
- New Single premiums	1,202	238	964	0
- Annual Premium Equivalent (APE)	834	86	716	32
PVNBP Margin 2011	3.3 %	-13.8 %	4.2 %	13.0 %
APE Margin 2011	20%	-91%	25%	78%

DB: Defined benefit business with profit sharing

DC: Defined contribution business with guarantees and profit sharing

UL: Unit linked products Risk: Disability policies

#### IV. IFRS RECONCILIATION AND STOREBRAND GROUP MCEV

#### Storebrand Group MCEV 2012 and IFRS reconciliation

The following table shows a reconciliation of the IFRS equity for the life insurance business to embedded value at year-end 2012:

NOK mill.	
IFRS Equity Storebrand Life (incl. book value SPP)	17,262
NGAAP adjustments	
- Security reserve non-life	-117
- Administration reserve non-life	0
- Group contribution NGAAP (provision)	0
NGAAP Equity Life (incl. SPP)	17,145
- Total consolidation SBL Group	1,047
NGAAP Equity Storebrand Life (incl. book value SPP)	18,192
MCEV adjustments	
- Risk smoothing fund	-640
- Market value debt	-24
- Intangible assets	-108
- Other consolidation factors	-73
Shareholders Surplus Storebrand Life (incl. book value of SPP)	17,347
- Book value of SPP in SBL acocunts	-15,016
- Shareholder surplus SPP	8,087
Group Shareholder surplus in MCEV	10,417
- Value of In-force SPP	4,521
- Value of In-force SBL	6,863
Total Life MCEV	21,802

The table below shows the derivation of the group MCEV for the Storebrand Group (including the covered and non-covered business, see Section V) as well as the movements in the group MCEV in the year 2012. The movements of the group MCEV are shown separately for the covered and the non-covered business. The IFRS life segment is the covered life business. Other segments such as the banking, asset management and other businesses (including eliminations) have been similarly included at their IFRS value.

The earnings for the Asset Management business reflect NOK 31 million less profit than IFRS reporting. This represents asset management profits for managing covered business assets that has been modelled with the covered business MCEV.

	IFRS Segment Life	Banking, Asset Management	Group MCEV
NOK mill.		and Other (incl eliminations)	
Published Group MCEV 2011	24,981	3,156	28,138
Restatement	-223	0	-223
Restated Group MCEV 2011	24,759	3,156	27,915
Opening adjustments	-206	0	-206
Restated and adjusted opening values	24,552	3,156	27,709
Operating Earnings	530	-123	408
Non-operating Earnings	-3,586	0	-3,586
Total Earnings	-3,056	-123	-3,178
Other movements in IFRS equity	0	-379	-379
Closing adjustments	305	19	324
Closing Group MCEV	21,802	2,674	24,476

#### V. METHODOLOGY

**Embedded Value:** Is a present value of cash flow calculation estimating the value of the company excluding any value attributable to future new business. It comprises the sum of shareholder surplus and the value of business in force (VIF). The VIF comprises the present value of future profits in a certainty equivalent scenario (PVFP) (including profits arising in the asset management companies of Storebrand Group which are induced by its life insurance business), an allowance for the time value of options and guarantees (TVOG), frictional costs of holding required capital (FCRC) and an allowance for cost of residual non-hedgeable risks (CNHR).

The shareholder surplus for Storebrand Life Group is based on the published shareholder assets under NGAAP, less intangible assets, deferred acquisition costs and risk smoothing fund.

The PVFP is the present value of the projected stream of future after-tax profits that are expected to be generated by the policies in force at the valuation date, taking into account all assets backing policyholder liabilities. The profits are determined on local GAAP using a deterministic projection (with a certainty equivalent scenario).

The stream of future after-tax profits is determined using best estimate assumptions for future operating conditions regarding such items as expenses, taxation, lapse, mortality, and morbidity rates. Economic assumptions are further described in Section VI.

No value (for the shareholder) is assigned to residual assets at the end of the projection period.

**Embedded value earnings:** The embedded value earnings are defined as the change in embedded value, after adjustments for any capital movement, such as dividends or capital injections. The embedded value earnings are divided into the following categories: the expected return (unwinding of discounting and excess return above the reference rate), the value of new business and experience variances, assumption changes, other operational variances, economic variances, and other non-operating variances. The sum of the first five components listed above is referred to as embedded value operating earnings.

**Covered business:** The business covered in the embedded value reporting is the business written within and legally contained in Storebrand Livsforsikring AS and SPP. It should be noted that other life insurance business in the Storebrand Group is included in the consolidated embedded value at their respective book value.

Additionally, profits arising in the group's asset management companies, Storebrand Kapitalforvaltning AS and Storebrand

Eiendom, which arise from the life insurance business of Storebrand Group, have been included (look-though profits). No other sources of profits from the life insurance business within Storebrand Group are considered.

**In-force business:** For the purposes of the embedded value, the in-force business is defined as existing policies including future renewals on existing policies for individual business, and existing schemes for group business.

For SBL, future new members of existing group schemes have implicitly been allowed for in defined contribution business' value of in-force by assuming leaving members are replaced by new members joining (steady state). Steady state has not been taken into account for SBL's private sector defined benefit business because of expected changes in the Norwegian private pension system: A new defined contribution product is expected to replace the existing defined benefit product for future new business. As this new defined contribution product has not yet been formalized, we have not taken into account future new business for this. SBL's public defined benefit business has been closed during 2012, and hence we do not expect any future new business.

For SPP, future new members on existing schemes are only taken into account for the defined benefit part of the business.

**New business:** New business in 2012 is defined as new policies on individual business, new schemes or schemes which are transferred to the Storebrand Group within group business, and new policies on existing defined contribution schemes for SPP.

New business value: The new business value is defined as the after-tax value derived from new business excluding funds that are not yet booked, including the impact of initial acquisition expenses, an allowance for TVOG, FCRC, and CNHR, and the present value of profits arising in Storebrand Group's asset management companies which are induced by the new business written. The time value of options and guarantees has been derived as the marginal impact of the new business on the time value of options and guarantees (as described in more detail below) of business in-force. It is calculated at point of sale and based on end-year assumptions.

**Frictional cost of holding required capital:** The frictional cost of holding required capital reflects the taxation on expected return and the frictional investment management costs in relation to the required capital (see section VI for further details on taxation).

Required capital: The amount of required capital for SBL has been set as the greater of Norwegian regulatory capital and internal capital requirements. Life insurance in Norway is subject to two solvency requirement tests, the EU requirement (Solvency I) and the banking requirement (Basel I), both of which must be satisfied. For both SBL and SPP the internal capital requirement is equivalent to 150% of the EU minimum solvency requirements. For SBL, the internal capital requirement is higher than the banking requirement (Basel 1).

In the consolidated embedded value at year-end 2012, the required capital shown reflects the actual group solvency requirement (150% of the EU minimum requirement) and not the sum of the required capital of SBL and SPP. The group requirement represents 88% of the sum of solo requirements. The required capital is assumed to be released in line with the run off of the business in-force.

Cost of residual non-hedgeable risks (CNHR): The CNHR is an allowance for risks that have not been allowed for elsewhere in the calculations. Where possible, the estimated impact of these risks on the embedded value has been assessed and included directly in the CNHR. Where no direct assessment of the impact of these risks has been possible, a cost of capital approach has been applied based on an estimated risk capital for the risks. The risk capital has mainly been estimated based on recent calculations of Solvency II capital requirements, and a charge of 4% per annum has been applied for most risks.

The CNHR includes an allowance for the illiquidity of the Norwegian and Swedish swap markets based on a cost of capital approach. The corresponding risk capital is calculated by shifting the illiquid part of the yield curve.

The total CNHR is equivalent to an annual charge of 2.0% on the diversified risk capital for non-hedgeable risks (2.6% at year-end 2011).

**Participating business:** Bonuses to policyholders are derived based on the companies' individual profit sharing strategy. Regulatory constraints are appropriately reflected.

Time value of options and guarantees (TVOG): The TVOG (including guaranteed return and the right of policyholders to receive minimum profit sharing) has been determined using a stochastic model of the underlying with-profit business. It is defined as the difference between the present value of future profits in a certainty equivalent scenario and the average over 1,000 market-consistent stochastic scenarios.

For the new business, the TVOG is determined by means of a marginal method, i.e. by attributing to the new business the impact of the new business written during the year on the TVOG of the entire portfolio. The financial options evaluated comprise the interest rate guarantees and the impact of local profit-sharing regulations. No other financial options have been evaluated; specifically, no dynamic policyholder behaviour has been assumed but instead has been considered as part of the allowance for residual non-hedgeable risks.

**Reinsurance and debt:** There are only non-material amounts of reinsurance in Storebrand Life Group which have not been considered in the valuation. An adjustment has been made to the shareholder surplus to reflect the difference between the book value of the subordinated loans in SBL and the corresponding market value. The adjustment to the shareholder surplus at year-end 2012 amounts to NOK -24 million.

**Look-through adjustments:** Profits arising in Storebrand's asset management companies which are induced by the group's life insurance business have been considered in the value of in-force and in the value of new business.

**Deterministic projections:** A detailed deterministic model has been used to determine the projected future shareholder cash flows based on a certainty equivalent scenario, where it is assumed that all assets earn the risk-free rate of return and all cash flows are discounted with the risk-free rate.

**Stochastic projections:** A Monte-Carlo simulation using market consistent scenarios was used to evaluate the effect of volatility in the capital markets on the earnings of the covered business.

Allowance is made for management actions, including the investment strategy and solvency based dynamic risk management, as well as crediting and buffer capital strategy based on the current profit-sharing strategy adopted by the Storebrand Life Group. The underlying principles are in line with the strategies developed and executed in recent years.

#### Implied discount rate (IDR) and internal rate of return

(IRR): The implied discount rate is derived as the discount rate which, if applied to projected shareholder profits using real world economic assumptions as described in Section VI including an allowance for the cost of holding capital, leads to the same embedded value or VNB calculated via a direct MCEV approach as described above.

The IRR is derived as the discount rate which, if applied to projected shareholder profits generated by the new business using real world economic assumptions and including an allowance for the cost of holding capital, leads to a discounted value of zero.

#### VI. ASSUMPTIONS

#### **Economic assumptions**

In accordance with current best practice, consistent with MCEV Principles, swap rates are used to derive the risk-free reference rates. However, Storebrand does not consider the quoted swap rates for NOK and SEK beyond 10 years as a robust basis for embedded value calculations or other valuations. Research performed by Storebrand shows a lack of liquidity in the Norwegian and the Swedish swap market. In 2008, the following approach was developed by Storebrand, and has been adopted for statutory reserving in SPP (note that the solvency accounting does not reflect this). Consequently, this approach has also been adopted for the embedded value calculations.

The following approach to deriving the risk-free reference rates (for NOK and SEK) has been adopted in the embedded value at year-end 2012:

- Swap market interest rates are applied from the liquid part of the risk-free interest rate curve up to 10 years.
   No adjustment is made for credit risk.
- A long-term equilibrium level for spot rates is applied from 20 years and onwards, where the market is not functioning well. This equilibrium level is based on assumptions for growth in real economy, inflation and a term premium.
- Linear interpolation of the spot rate is used between 10 years and 20 years.

No liquidity premiums have been added to the risk-free reference rate derived as described above.

The spot yield curve table below shows the risk free yields by currency (including the quoted 20-year and 30-year rates which are assumed to be non-liquid):

2011			2012					
Year	NC	DΚ	SE	EK	NO	DΚ	SE	EK
	mark to market	mark to model						
1	2.6 %	2.6 %	2.0 %	2.0 %	2.0 %	2.0 %	1.2 %	1.2 %
2	2.7 %	2.7 %	1.8 %	1.8 %	2.1 %	2.1 %	1.2 %	1.2 %
3	2.8 %	2.8 %	1.8 %	1.8 %	2.2 %	2.2 %	1.3 %	1.3 %
5	3.2 %	3.2 %	2.0 %	2.0 %	2.5 %	2.5 %	1.5 %	1.5 %
10	3.6 %	3.6 %	2.3 %	2.3 %	3.2 %	3.2 %	2.1 %	2.1 %
20	3.7 %	4.8 %	2.3 %	4.1 %	3.4 %	4.7 %	2.4 %	4.0 %
30	3.7 %	4.8 %	2.2 %	4.1 %	3.4 %	4.7 %	2.4 %	4.0 %

The stochastic scenarios have been calibrated to implied volatilities of swaptions at the money. The economic scenario generator (ESG) used for generating the scenarios simulates rates and returns on a monthly basis. A set of correlated normal random samples is created based on a specified correlation matrix. The first random sample generated at each time is for the short rate process (a Cox-Ingersoll-Ross model), which in turn guides the movement of the other asset classes. Asset class returns are produced with no allowance for an asset class specific risk. The stochastic element is then applied by means of the multivariate standard normal samples already derived.

The model parameters are usually calibrated to the market conditions at the valuation dates, i.e. swaption prices and equity option prices. The table below shows implied volatilities for options on 1 year swaps at the money for various option maturities:

	2011			12
Year	NOK	SEK	NOK	SEK
1	24.6 %	34.7 %	23.3 %	36.8 %
5	21.0 %	29.6 %	21.0 %	29.8 %
10	16.8 %	25.9 %	15.9 %	23.3 %

Various equity indices are considered in the stochastic models. Equity volatilities are based on implied volatilities of equity options at the money. Real estate volatility is based on historic market data.

The following table shows volatility assumptions used for generating stochastic scenarios:

2011			2012					
		SBL		SPP		SBL		SPP
Year	Int eq	Dom eq	Real estate	Int and dom eq	Int eq	Dom eq	Real estate	Int and dom eq
1	23.8 %	22.7 %	7.0 %	23.1 %	19.0 %	20.1 %	7.0 %	18.0 %
10	28.9 %	23.7 %	6.5 %	27.1 %	24.8 %	21.5 %	6.5 %	23.5 %

Int eq: International equities Dom eq: Domestic equities

#### Real world assumptions for IDR and IRR calculations

For the calculation of IDRs and IRRs the following risk premiums have been added to the interest rates used in the certainty equivalent projection:

Capital requirements	2011	2012
Risk premiums by asset class		
- equity	3.5 %	4.0 %
- corporate bonds / loans	0.5 %	0.3 %
- real estate	1.8 %	2.5 %
- cash	-0.5 %	-0.5 %

#### Inflation

Price inflation for SPP has been set equal to implied inflation for the Swedish market. This implied inflation in Sweden equals approximately 50% of the implied forward rates. For SBL, price inflation is set to be 50% of the 1-year forward rate as a proxy for implied inflation which is not available for the Norwegian market.

Salary inflation, used to derive future premiums and benefits, is assumed to be 1.9 percentage points above price inflation and is based on an analysis of historic spreads.

#### **Expenses**

The expenses incurred have been subdivided by line of business and fully allocated into investment, acquisition and maintenance expenses. Maintenance expenses are expressed as per-policy expenses and are assumed to increase with price inflation.

The costs of SPP's and SBL's own pension schemes have been reflected on local GAAP basis (which for SBL and SPP equals the IFRS basis).

There are no material services provided by other group companies other than the one reflected in the look-through value. Also, there are no material expenses at the holding level that would have to be attributed and none have been taken into account.

No productivity gains are anticipated in the embedded value assumptions. There are no material overhead expenses incurred in other entities.

#### **Actuarial assumptions**

The assumptions for mortality and morbidity, lapses and paidup rates are based on recent company experience, and have been reviewed for 2012.

An internal model has been used to quantify and include future expected decrease in mortality for annuity business.

#### Tax

Due to new tax regulations, a change in the effective tax rate is included in the Embedded Value calculation for 2012. An effective tax rate of 27% has been applied for SBL on all value of in-force elements as well as on return on required capital. For SPP, new tax regulations imply company tax of 22% on returns on shareholder capital and on profits from risk business.

The Storebrand Group has a tax loss carried forward of NOK 7.2 billion. However, this has not been accounted for given the low effect in the risk neutral valuation approach of the embedded value calculation, and that the major part of it is assumed being consumed by other business lines within the Storebrand Group.

#### **Exchange rates**

An exchange rate of 0.8706 has been applied to amounts in SEK at year-end 2011 and 0.8555 at year-end 2012 consistent with the annual accounts of Storebrand Group.

#### Statement of the Board of Directors

The Board of Directors confirms that the embedded value as at 31 December 2012, and the embedded value earnings including the value added by new business in 2012, have been determined using methodology and assumptions which are compliant with EEV principles. The embedded value results have been approved by the Board of Directors at the last board meeting.

#### **Towers Watson Opinion**

"Towers Watson has reviewed the methodology and assumptions used to determine the 2012 embedded value results. The review covered the European Embedded Value as at 31 December 2012 and the value of 2012 new business.

Towers Watson has concluded that the methodology and assumptions used comply with the EEV Principles and Guidance, and in particular that:

- the methodology makes allowance for the aggregate risks in the covered business through the methodology as described in this supplementary disclosure document, which includes a stochastic allowance for the cost of financial options and guarantees, and a level of required capital based on regulatory and internal capital requirements and an allowance for the cost of nonhedgeable risks;
- the operating assumptions have been set with appropriate regard to past, current and expected future experience;
- the economic assumptions used are internally consistent and consistent with observable, reliable market data; and
- for participating business, the assumed bonus rates and the allocation of profit between policyholders and shareholders are consistent with the projection assumptions, established company practice and local market practice.

We note that Storebrand has not complied with the requirements of EEV Guidance in relation to the disclosure of sensitivity results, with none provided for the value of new business and a limited number for the embedded value.

Towers Watson has also performed limited high-level checks on the results of the calculations and has confirmed that any issues discovered do not have a material impact on the disclosed embedded value as at 31 December 2012 and the 2012 new business value. Towers Watson has not, however, performed detailed checks on the models and processes involved.

In arriving at these conclusions, Towers Watson has relied on data and information provided by Storebrand ASA. This opinion is made solely to Storebrand ASA in accordance with the terms of Towers Watson's engagement letter. To the fullest extent permitted by applicable law, Towers Watson does not accept or assume any responsibility, duty of care or liability to anyone other than Storebrand ASA for or in connection with its review work, the opinions it has formed, or for any statement set forth in this opinion."

# Important notice: This document may contain forward-looking statements. By their nature, forward-looking statements involve risk and uncertainty because they relate to future events and circumstances that may be beyond the Storebrand Group's control. As a result, the Storebrand Group's actual future financial condition, performance and results may differ materially from the plans, goals and expectations set forth in these forward-looking statements. Important factors that may cause such a difference for the Storebrand Group include, but are not limited to: (i) the macroeconomic development, (ii) change in the competitive

climate, (iii) change in the regulatory environment and other government actions and (iv) market related risks such as changes in equity markets, interest rates and exchange rates, and the performance of financial markets generally. The Storebrand Group assumes no responsibility to update any of the forward-

looking statements contained in this document or any other forward-looking statements it may make.

# 45018 Graffsk Senter 03/2

#### Financial calender 2013

13 February Results 4Q 2012

15 March Embedded Value 2012 Investor and analyst update

17 April Annual General Meeting

18 April Ex dividend date

24 April Results 1Q 2013
 12 July Results 2Q 2013
 30 October Results 3Q 2013
 February 2014 Results 4Q 2013

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