

FINANCIAL STATEMENTS

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CONSOLIDATED INCOME STATEMENT

For the year ended 31 December 2019

	Notes	2019 £m	2018 £m
Revenue ¹	2	16,587	15,729
Cost of sales ¹		(15,645)	(14,531)
Gross profit		942	1,198
Commercial and administrative costs ¹		(1,128)	(1,595)
Research and development costs	3	(770)	(768)
Share of results of joint ventures and associates	12	104	4
Operating loss		(852)	(1,161)
Gain arising on disposal of businesses ²	27	139	358
Loss before financing and taxation	2	(713)	(803)
Financing income	4	252	271
Financing costs	4	(430)	(2,415)
Net financing costs		(178)	(2,144)
Loss before taxation ³		(891)	(2,947)
Taxation	5	(420)	554
Loss for the year		(1,311)	(2,393)
Attributable to:			
Ordinary shareholders		(1,315)	(2,401)
Non-controlling interests		4	8
Loss for the year		(1,311)	(2,393)
Other comprehensive (expense)/income		(1,013)	182
Total comprehensive expense for the year		(2,324)	(2,211)
Loss per ordinary share attributable to ordinary shareholders:	6		
Basic		(69.07)p	(129.15)p
Diluted		(69.07)p	(129.15)p
Payments to ordinary shareholders in respect of the year:	19		
Pence per share		11.7p	11.7p
Total		224	220
Underlying profit before taxation ³	2	583	466

¹ Included within revenue, cost of sales and commercial and administrative costs are exceptional charges relating to Civil Aerospace programmes, impairment charges and restructuring costs. Further details can be found in note 2.

² Commercial Marine was disposed of on 1 April 2019 and Rolls-Royce Power Development Limited was disposed of on 15 April 2019. L'Orange was disposed of on 1 June 2018.

³ (Loss)/profit before taxation disclosed on a statutory and underlying basis.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

For the year ended 31 December 2019

	Notes	2019 £m	2018 £m
Loss for the year		(1,311)	(2,393)
Other comprehensive (expense)/income (OCI)			
Actuarial movements on post-retirement schemes ¹	21	(934)	27
Share of OCI of joint ventures and associates	12	(1)	(1)
Related tax movements	5	324	(2)
Items that will not be reclassified to profit or loss		(611)	24
Foreign exchange translation differences on foreign operations		(313)	171
Reclassified to income statement on disposal of businesses	27	(98)	(19)
Cash flow hedge reserve movements		22	(17)
Share of OCI of joint ventures and associates	12	(7)	18
Related tax movements	5	(6)	5
Items that may be reclassified to profit or loss		(402)	158
Total other comprehensive (expense)/income		(1,013)	182
Total comprehensive expense for the year		(2,324)	(2,211)
Attributable to:			
Ordinary shareholders		(2,328)	(2,219)
Non-controlling interests		4	8
Total comprehensive expense for the year		(2,324)	(2,211)

¹ Includes an asset re-measurement net loss estimated at £600m following the agreement to transfer the future pension obligations of circa 33,000 pensions in the UK scheme to Legal & General Assurance Society Limited. See note 21 for further information.

CONSOLIDATED BALANCE SHEET

At 31 December 2019

	Notes	2019 £m	2018 £m
ASSETS			
Intangible assets	9	5,442	5,295
Property, plant and equipment	10	4,803	4,929
Right-of-use assets ¹	11	2,009	–
Investments – joint ventures and associates	12	402	412
Investments – other	12	14	22
Other financial assets	19	467	343
Deferred tax assets	5	1,887	2,092
Post-retirement scheme surpluses	21	1,170	1,944
Non-current assets		16,194	15,037
Inventories	13	4,320	4,287
Trade receivables and other assets	14	5,065	4,690
Contract assets	15	2,095	2,057
Taxation recoverable		39	34
Other financial assets	19	86	22
Short-term investments	19	6	6
Cash and cash equivalents	16	4,443	4,974
Current assets		16,054	16,070
Assets held for sale	27	18	750
TOTAL ASSETS		32,266	31,857
LIABILITIES			
Borrowings and lease liabilities	17	(775)	(858)
Other financial liabilities	19	(493)	(647)
Trade payables and other liabilities	18	(8,450)	(8,292)
Contract liabilities	15	(4,228)	(3,794)
Current tax liabilities		(172)	(138)
Provisions for liabilities and charges	20	(858)	(1,122)
Current liabilities		(14,976)	(14,851)
Borrowings and lease liabilities	17	(4,910)	(3,804)
Other financial liabilities	19	(3,094)	(3,542)
Trade payables and other liabilities	18	(2,071)	(1,940)
Contract liabilities	15	(6,612)	(5,336)
Deferred tax liabilities	5	(618)	(962)
Provisions for liabilities and charges	20	(1,946)	(795)
Post-retirement scheme deficits	21	(1,378)	(1,303)
Non-current liabilities		(20,629)	(17,682)
Liabilities associated with assets held for sale	27	(15)	(376)
TOTAL LIABILITIES		(35,620)	(32,909)
NET LIABILITIES		(3,354)	(1,052)
EQUITY			
Called-up share capital	22	386	379
Share premium account		319	268
Capital redemption reserve		159	161
Cash flow hedging reserve		(96)	(106)
Merger reserve		650	406
Translation reserve		397	809
Accumulated losses		(5,191)	(2,991)
Equity attributable to ordinary shareholders		(3,376)	(1,074)
Non-controlling interests		22	22
TOTAL EQUITY		(3,354)	(1,052)

¹ IFRS 16 Leases has been adopted from 1 January 2019 and under the transitional arrangements the Group has adopted IFRS 16 on a modified retrospective basis. There has been no restatement of 2018 comparatives. See notes 1 and 29 for more details.

The financial statements on pages 116 to 182 were approved by the Board on 28 February 2020 and signed on its behalf by:

Warren East Stephen Daintith
Chief Executive Chief Financial Officer

CONSOLIDATED CASH FLOW STATEMENT

For the year ended 31 December 2019

	Notes	2019 £m	2018 £m
Reconciliation of cash flows from operating activities			
Operating loss		(852)	(1,161)
(Profit)/loss on disposal of property, plant and equipment		(13)	11
Share of results of joint ventures and associates	12	(104)	(4)
Dividends received from joint ventures and associates	12	92	105
Amortisation and impairment of intangible assets ¹	9	372	565
Depreciation and impairment of property, plant and equipment ¹	10	532	521
Depreciation and impairment of right-of-use assets	11	411	-
Impairment of and other movements on investments	12	1	6
Increase in provisions		1,108	1,003
Increase in inventories		(43)	(616)
Increase in trade receivables and other assets		(610)	(469)
Increase in contract assets		(41)	(112)
Penalties paid on agreements with investigating bodies		(102)	-
Increase in trade payables and other liabilities		683	1,732
Increase in contract liabilities		1,778	1,419
Cash flows on other financial assets and liabilities held for operating purposes		(757)	(732)
Interest received		31	-
Net defined benefit post-retirement cost recognised in loss before financing	21	222	352
Cash funding of defined benefit post-retirement schemes	21	(266)	(181)
Share-based payments	23	30	35
Net cash inflow from operating activities before taxation		2,472	2,474
Taxation paid		(175)	(248)
Net cash inflow from operating activities ²		2,297	2,226
Cash flows from investing activities			
Net movement in unlisted investments	12	3	(6)
Additions of intangible assets	9	(640)	(680)
Disposals of intangible assets	9	13	13
Purchases of property, plant and equipment		(747)	(905)
Disposals of property, plant and equipment		50	43
Acquisitions of businesses	27	(43)	-
Disposal of businesses	27	453	573
Movement in investments in joint ventures and associates and other movements on investments	12	(8)	(13)
Disposals of joint ventures		1	-
Net cash outflow from investing activities		(918)	(975)
Cash flows from financing activities			
Repayment of loans		(1,136)	(37)
Proceeds from increase in loans		22	1,054
Capital element of lease payments (2018: Capital element of finance lease payments)		(271)	(23)
Net cash flow from (decrease)/increase in borrowings and leases		(1,385)	994
Interest received		-	27
Interest paid		(104)	(92)
Interest element of lease payments (2018: Interest element of finance lease payments)		(88)	(5)
Increase in short-term investments		-	(3)
Issue of ordinary shares (net of expenses)		24	1
Purchase of ordinary shares		(15)	(1)
Dividends to NCI		(4)	(3)
Redemption of C Shares		(220)	(216)
Net cash (outflow)/inflow from financing activities		(1,792)	702
Change in cash and cash equivalents		(413)	1,953
Cash and cash equivalents at 1 January		4,952	2,933
Exchange (losses)/gains on cash and cash equivalents		(104)	66
Cash and cash equivalents at 31 December ³		4,435	4,952

¹ In 2019, an impairment of £58m in respect of Bergen Engines AS was included in these lines (2018: £160m in respect of Commercial Marine).

² Operating cash flow includes Trent 1000 insurance receipts of £173m.

³ The Group considers overdrafts (repayable on demand) to be an integral part of its cash management activities and these are included in cash and cash equivalents for the purposes of the cash flow statement.

In deriving the consolidated cash flow statement, movements in balance sheet line items have been adjusted for non-cash items. The cash flow in the year includes the sale of goods and services to joint ventures and associates – see note 26.

CONSOLIDATED CASH FLOW STATEMENT CONTINUED

For the year ended 31 December 2019

	2019 £m	2018 £m
Reconciliation of movements in cash and cash equivalents to movements in net funds/(debt)		
Change in cash and cash equivalents	(413)	1,953
Cash flow from decrease/(increase) in borrowings and leases	1,385	(994)
Cash flow from increase in short-term investments	–	3
Change in net funds resulting from cash flows	972	962
New leases in the year (2018: new finance leases in the year)	(217)	(97)
Net debt (excluding cash and cash equivalents) of previously unconsolidated subsidiary	(1)	–
Exchange (losses)/gains on net funds	(32)	54
Fair value adjustments	48	(69)
Transferred to liabilities associated with assets held for sale	3	–
Movement in net funds	773	850
Net funds/(debt) at 1 January excluding the fair value of swaps	318	(532)
Reclassifications ¹	(79)	–
Adoption of IFRS 16 (see note 29)	(2,248)	–
Net debt at 1 January restated	(2,009)	(532)
Net (debt)/funds at 31 December excluding the fair value of swaps	(1,236)	318
Fair value of swaps hedging fixed rate borrowings	243	293
Net (debt)/funds at 31 December	(993)	611

¹ In 2019, the Group has reclassified £79m as borrowings previously included in other financial liabilities. These borrowings mature between 2019 and 2029 – see note 17.

CONSOLIDATED CASH FLOW STATEMENT CONTINUED

For the year ended 31 December 2019

The movement in net funds/(debt) (defined by the Group as including the items shown below) is as follows:

	At 31 December 2018 £m	Transition to IFRS 16 and reclassi- fications ¹ £m	1 January £m	At Funds flow £m	Net funds on acquisition/ disposal £m	Exchange differences £m	Fair value adjustments £m	Reclassi- fications £m	Other movements on leases £m	At 31 December £m
2019										
Cash at bank and in hand	1,023	-	1,023	(179)	-	(19)	-	-	-	825
Money market funds	1,222	-	1,222	(124)	-	(3)	-	-	-	1,095
Short-term deposits	2,729	-	2,729	(124)	-	(82)	-	-	-	2,523
Cash and cash equivalents ² (per balance sheet)	4,974	-	4,974	(427)	-	(104)	-	-	-	4,443
Overdrafts	(22)	-	(22)	14	-	-	-	-	-	(8)
Cash and cash equivalents (per cash flow statement)	4,952	-	4,952	(413)	-	(104)	-	-	-	4,435
Short-term investments	6	-	6	-	-	-	-	-	-	6
Other current borrowings	(802)	(14)	(816)	799	-	2	5	(417)	-	(427)
Non-current borrowings	(3,609)	(65)	(3,674)	315	(1)	4	43	417	-	(2,896)
Finance leases	(229)	229	-	-	-	-	-	-	-	-
Lease liabilities	-	(2,477)	(2,477)	271	-	66	-	3	(217)	(2,354)
Financial liabilities	(4,640)	(2,327)	(6,967)	1,385	(1)	72	48	3	(217)	(5,677)
Net funds/(debt) excluding fair value swaps	318	(2,327)	(2,009)	972	(1)	(32)	48	3	(217)	(1,236)
Fair value of swaps hedging fixed rate borrowings ³	293	-	293	-	-	-	(50)	-	-	243
Net funds/(debt)	611	(2,327)	(1,716)	972	(1)	(32)	(2)	3	(217)	(993)
<i>Net funds (excluding lease liabilities)</i>	<i>840</i>	<i>(79)</i>	<i>761</i>							<i>1,361</i>
2018										
Cash at bank and in hand			838	170	-	15	-	-	-	1,023
Money market funds			589	630	-	3	-	-	-	1,222
Short-term deposits			1,526	1,155	-	48	-	-	-	2,729
Cash and cash equivalents (per balance sheet)			2,953	1,955	-	66	-	-	-	4,974
Overdrafts			(20)	(2)	-	-	-	-	-	(22)
Cash and cash equivalents (per cash flow statement)			2,933	1,953	-	66	-	-	-	4,952
Short-term investments			3	3	-	-	-	-	-	6
Other current borrowings			(39)	(38)	-	(1)	15	(739)	-	(802)
Non-current borrowings			(3,292)	(972)	-	-	(84)	739	-	(3,609)
Finance leases			(137)	(81)	-	(11)	-	-	-	(229)
Financial liabilities			(3,468)	(1,091)	-	(12)	(69)	-	-	(4,640)
Net (debt)/funds excluding fair value swaps			(532)	865	-	54	(69)	-	-	318
Fair value of swaps hedging fixed rate borrowings ³			227	-	-	-	66	-	-	293
Net (debt)/funds			(305)	865	-	54	(3)	-	-	611

¹ In 2019, the Group has reclassified £79m as borrowings previously included in other financial liabilities. These borrowings mature between 2019 and 2029 – see note 17.

² Includes Trent 1000 insurance receipts of £173m.

³ All interest rate swaps are entered into for risk management purposes, although these may not be designated into hedging relationships for accounting purposes – see note 19.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

For the year ended 31 December 2019

	Notes	Attributable to ordinary shareholders							Non-controlling interests (NCI) £m	Total equity £m
		Share capital £m	Share premium £m	Capital redemption reserve £m	Cash flow hedging reserve ¹ £m	Merger reserve £m	Translation reserve £m	Accumulated losses ² £m		
At 31 December 2017		368	195	162	(112)	3	657	(343)	930	933
Impact of adopting IFRS 9		–	–	–	–	–	–	(15)	(15)	(15)
At 1 January 2018		368	195	162	(112)	3	657	(358)	915	918
(Loss)/profit for the year		–	–	–	–	–	–	(2,401)	(2,401)	8 (2,393)
Foreign exchange translation differences on foreign operations		–	–	–	–	–	171	–	171	171
Reclassified to income statement on disposal of L'Orange		–	–	–	–	–	(19)	–	(19)	(19)
Movements on post-retirement schemes	21	–	–	–	–	–	–	27	27	27
Debited to cash flow hedge reserve		–	–	–	(17)	–	–	–	(17)	(17)
OCI of joint ventures and associates	12	–	–	–	18	–	–	(1)	17	17
Related tax movements	5	–	–	–	5	–	–	(2)	3	3
Total comprehensive income/(expense) for the year		–	–	–	6	–	152	(2,377)	(2,219)	8 (2,211)
Shares issued in respect of acquisition of ITP Aero		10	–	–	–	403	–	–	413	413
Other issues of ordinary shares	22	1	73	–	–	–	–	–	74	74
Issue of C Shares ³		–	–	(217)	–	–	–	1	(216)	(216)
Redemption of C Shares		–	–	216	–	–	–	(216)	–	–
Shares issued to employee share trust		–	–	–	–	–	–	(75)	(75)	(75)
Share-based payments – direct to equity ⁴		–	–	–	–	–	–	32	32	32
Transfer of joint operations to subsidiaries		–	–	–	–	–	–	–	15	15
Transactions with NCI		–	–	–	–	–	–	–	(4)	(4)
Related tax movements	5	–	–	–	–	–	–	2	2	2
Other changes in equity in the year		11	73	(1)	–	403	–	(256)	230	11 241
At 31 December 2018		379	268	161	(106)	406	809	(2,991)	(1,074)	22 (1,052)
Impact of adopting IFRS 16		–	–	–	–	–	–	(40)	(40)	(40)
At 1 January 2019		379	268	161	(106)	406	809	(3,031)	(1,114)	22 (1,092)
(Loss)/profit for the year		–	–	–	–	–	–	(1,315)	(1,315)	4 (1,311)
Foreign exchange translation differences on foreign operations		–	–	–	–	–	(313)	–	(313)	– (313)
Reclassified to income statement on disposal of Commercial Marine		–	–	–	–	–	(98)	–	(98)	– (98)
Movements on post-retirement schemes	21	–	–	–	–	–	–	(934)	(934)	– (934)
Credited to cash flow hedge reserve		–	–	–	22	–	–	–	22	22
OCI of joint ventures and associates	12	–	–	–	(7)	–	–	(1)	(8)	– (8)
Related tax movements	5	–	–	–	(5)	–	(1)	324	318	– 318
Total comprehensive income/(expense) for the year		–	–	–	10	–	(412)	(1,926)	(2,328)	4 (2,324)
Arising on issues of ordinary shares	22	1	51	–	–	–	–	–	52	– 52
Shares issued in respect of acquisition of ITP Aero		6	–	–	–	244	–	–	250	– 250
Issue of C Shares ³		–	–	(222)	–	–	–	1	(221)	– (221)
Redemption of C Shares		–	–	220	–	–	–	(220)	–	–
Ordinary shares purchased		–	–	–	–	–	–	(15)	(15)	– (15)
Shares issued to employee share trust		–	–	–	–	–	–	(51)	(51)	– (51)
Share-based payments – direct to equity ⁴		–	–	–	–	–	–	50	50	– 50
Transactions with NCI		–	–	–	–	–	–	–	(4)	(4)
Related tax movements	5	–	–	–	–	–	–	1	1	– 1
Other changes in equity in the year		7	51	(2)	–	244	–	(234)	66	(4) 62
At 31 December 2019		386	319	159	(96)	650	397	(5,191)	(3,376)	22 (3,354)

¹ See accounting policies note 1.

² At 31 December 2019, 12,476,576 ordinary shares with a net book value of £108m (2018: 13,538,921, 2017: 6,466,153 ordinary shares with net book values of £123m and £52m respectively) were held for the purpose of share-based payment plans and included in accumulated losses. During the year, 8,984,219 ordinary shares with a net book value of £82m (2018: 468,165 shares with a net book value of £4m) vested in share-based payment plans. During the year, the Company acquired 118,831 (2018: 80,810) of its ordinary shares via reinvestment of dividends received on its own shares and purchased 1,673,143 (2018: nil) of its ordinary shares through purchases on the London Stock Exchange. During the year, the Company issued 28,973,262 new ordinary shares relating to the remaining three instalments for the acquisition of ITP Aero (2018: 47,556,914 new ordinary shares relating to the first five instalments) and 7,803,043 new ordinary shares (2018: 7,460,173) to the Group's share trust for its employee share-based payment plans with a net book value of £66m (2018: £74m).

³ In Rolls-Royce Holdings plc's Company Financial Statements, C Shares are issued from the merger reserve, this reserve was created by a scheme of arrangement in 2011. As this reserve is eliminated on consolidation, in the Consolidated Financial Statements, the C Shares are shown as being issued from the capital redemption reserve.

⁴ Share-based payments – direct to equity is the share-based payment charge for the year less the actual cost of vesting excluding those vesting from own shares and cash received on share-based schemes vesting.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1 Accounting policies

The Company

Rolls-Royce Holdings plc (the 'Company') is a public company incorporated under the Companies Act 2006 and domiciled in the United Kingdom. The Consolidated Financial Statements of the Company for the year ended 31 December 2019 consist of the consolidation of the Financial Statements of the Company and its subsidiaries (together referred to as the Group) and include the Group's interest in jointly controlled and associated entities.

Basis of preparation and statement of compliance

In accordance with the Companies Act 2006 and European Union (EU) regulations, these Consolidated Financial Statements have been prepared in accordance with International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB) and interpretations issued by the IFRS Interpretations Committee (IFRIC), as adopted for use in the EU effective at 31 December 2019 (Adopted IFRS).

The Company has elected to prepare its individual Company Financial Statements under FRS 101 *Reduced Disclosure Framework*. They are set out on pages 183 to 186 and the accounting policies in respect of its individual Company Financial Statements are set out on page 184.

The Consolidated Financial Statements have been prepared on the historical cost basis except where Adopted IFRS requires the revaluation of financial instruments to fair value and certain other assets and liabilities on an alternative basis – most significantly post-retirement scheme obligations are valued on the basis required by IAS 19 *Employee Benefits* – and on a going concern basis as described on page 55.

The Consolidated Financial Statements are presented in sterling which is the Company's functional currency.

The preparation of Consolidated Financial Statements in conformity with Adopted IFRS requires management to make judgements and estimates that affect the reported amounts of assets and liabilities at the date of the Consolidated Financial Statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Revisions to Adopted IFRS in 2019

IFRS 16 Leases

The Group adopted IFRS 16 on 1 January 2019 using the modified retrospective approach. Under the specific transitional provisions in the standard, comparative information has not been restated. The reclassifications and the adjustments arising from the new leasing rules have been recognised in the opening balance sheet on 1 January 2019 (see note 29).

Until 31 December 2018, leases of aircraft and engines, plant and equipment and land and buildings were classified as either finance or operating leases. Payments made under operating leases were charged to profit or loss on a straight-line basis over the period of the lease. From 1 January 2019, leases are recognised as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Group. Each lease payment is allocated between reducing the liability and a finance cost. The finance cost is charged to the income statement over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period.

On adoption of IFRS 16, the Group recognised additional lease liabilities in relation to leases which had previously been classified as operating leases under the previous principles of IAS 17 *Leases*. These liabilities were measured at the present value of the remaining lease payments, discounted using the Group's incremental borrowing rate as of 1 January 2019. The weighted average incremental borrowing rate applied by the Group to the lease liabilities on 1 January 2019 was 3.7%.

The associated right-of-use assets for certain high value property leases are measured on a retrospective basis as if the new rules had always been applied. As above, the Group's incremental borrowing rate has been used. Other right-of-use assets are measured at the amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments relating to that lease recognised in the balance sheet as at 1 January 2019. In applying IFRS 16 for the first time, the Group has used the following practical expedients permitted by the standard:

- on initial application, IFRS 16 was only applied to contracts that were previously classified as leases, the Group has elected not to reassess whether a contract is, or contains, a lease at the date of initial application. Instead, for contracts entered into before the transition date the Group has relied on its assessment made applying IAS 17 and IFRIC 4 *Determining whether an Arrangement contains a Lease*;
- lease contracts with a duration of less than 12 months will continue to be expensed to the income statement on a straight-line basis over the lease term;
- the lease term has been determined with the use of hindsight where the contract contains options to extend the lease; and
- reliance on previous assessments on whether or not leases are onerous.

Note 29 sets out the adjustments made on transition to IFRS 16 on 1 January 2019. The most significant changes are where the Group is a lessee as the standard has not significantly changed the accounting where the Group is a lessor in a lease arrangement.

IFRIC 23 Uncertainty over Income Tax Treatment

The Group adopted IFRIC 23 on 1 January 2019. The interpretation clarifies how to apply the recognition and measurement requirements in IAS 12 *Income Taxes* when there is uncertainty over income tax treatments. Adoption of this interpretation did not have a material impact on the Group's financial statements.

Amendments to IFRS 9, IAS 39 and IFRS 7 Interest Rate Benchmark Reform

The Group has elected to early adopt the amendments in accordance with the transition provisions. Details of the impact to the Group are given on page 129.

1 Accounting policies *continued*

Key areas of judgement and sources of estimation uncertainty

The determination of the Group's accounting policies requires judgement. The subsequent application of these policies requires estimates; the actual outcome may differ from that calculated. The key judgements and key sources of estimation uncertainty at the balance sheet date, that have a significant risk of causing material adjustment to the carrying amounts of assets and liabilities within the next financial year, are summarised below. Further details are included within the significant accounting policies as indicated.

Area	Key judgements	Key sources of estimation uncertainty	Page
Revenue recognition	- Whether Civil Aerospace OE and aftermarket contracts should be combined - How performance on long-term aftermarket contracts should be measured - Whether any costs should be treated as wastage - Whether sales of spare engines to joint ventures are at fair value	Estimates of future revenue and costs of long-term contractual arrangements	125
Risk and revenue sharing arrangements	Determination of the nature of entry fees received		127
Taxation	Whether deferred tax assets should be recognised	Estimates necessary to assess whether it is probable that sufficient suitable taxable profits will arise in the UK to utilise the deferred tax assets	127
Financial instruments	Application of the business model and 'solely principal and interest' test		128
Business combinations	Identification of acquired assets and liabilities		129
Research and development	- Determination of the point in time where costs incurred on an internal programme development meet the criteria for capitalisation or ceasing capitalisation - Determination of the basis for amortising capitalised development costs		130
Leases	Determination of lease term	Estimates of the payments required to meet residual value guarantees at the end of engine leases	131
Impairment of goodwill	Determination of cash-generating units for assessing impairment of goodwill		131
Impairment of intangible assets (including programme-related intangible assets)		Estimates of cash flow forecasts and discount rates to support the carrying value of intangible assets (including programme-related intangible assets)	131
Provisions	Assessment of satisfying the criteria for the recognition and measurement of provisions	Estimates of expenditure required to settle the obligation relating to Trent 1000 claims and to settle long-term contracts assessed as onerous	132
Post-retirement benefits		Estimates of the assumptions applied for valuing the defined benefit obligation	133

Sensitivities for key sources of estimation risk are disclosed in the relevant notes where this is appropriate and practicable.

Significant accounting policies

The Group's significant accounting policies are set out below. With the exception of IFRS 16 and IFRIC 23, which have been adopted with effect from 1 January 2019, these accounting policies have been applied consistently to all periods presented in these Consolidated Financial Statements.

Presentation of underlying results

We measure financial performance on an underlying basis. We believe this is the most appropriate basis to measure our in-year performance as underlying results reflect the substance of trading activity, including the impact of the Group's foreign exchange forward contracts, which lock in transactions at predetermined exchange rates. In addition, underlying results exclude the accounting impact of business acquisitions and disposals, impairment charges and exceptional items. It is also consistent with the way that financial performance is measured by management and reported to the Board in accordance with IFRS 8 *Operating Segments*. Further details are given in note 2.

Basis of consolidation

The Consolidated Financial Statements include the Company Financial Statements and its subsidiary undertakings together with the Group's share of the results in joint arrangements and associates made up to 31 December.

A subsidiary is an entity controlled by the Company. Control exists when the Company has power over an entity, exposure to variable returns from its involvement with an entity and the ability to use its power over an entity so as to affect the Company's returns.

1 Accounting policies continued

A joint arrangement is an entity in which the Group holds a long-term interest and which is jointly controlled by the Group and one or more other venturers under a contractual arrangement. Joint arrangements may be either joint ventures or joint operations. An associate is an entity, being neither a subsidiary nor a joint arrangement, in which the Group holds a long-term interest and where the Group has a significant influence. The results of joint ventures and associates are accounted for using the equity method of accounting. Joint operations are accounted for using proportionate accounting.

Any subsidiary undertaking, joint arrangement or associate sold or acquired during the year are included up to, or from, the date of change of control. Transactions with non-controlling interests are recorded directly in equity.

The Commercial Marine business was disposed of on 1 April 2019 and Rolls-Royce Power Development Limited was disposed of on 15 April 2019. We announced the proposed disposal of the North America Civil Nuclear business on 26 September 2019, and the Knowledge Management System business on 17 December 2019. Both North America Civil Nuclear and Knowledge Management System have been treated as a disposal group held for sale at 31 December 2019, with their assets and liabilities presented separately in the balance sheet. These disposals were completed on 31 January 2020 and 3 February 2020 respectively. In 2018, L'Orange was disposed of on 1 June and Commercial Marine was treated as a disposal group and held for sale (see note 27).

On 30 September 2019, we acquired Siemens' eAircraft business and in accordance with IFRS 3 *Business Combinations*, the fair value of the assets and liabilities acquired have been consolidated in the Group's results from the date of acquisition (see note 27).

All intra-group transactions, balances, income and expenses are eliminated on consolidation. Adjustments are made to eliminate the profit or loss arising on transactions with joint arrangements and associates to the extent of the Group's interest in the entity.

Revenue recognition

Key judgement – Whether Civil Aerospace OE and aftermarket contracts should be combined

In the Civil Aerospace business, OE contracts are with the airframers (except for spare engines), while the aftermarket contracts are with the aircraft operators, although there may be interdependencies between them. IFRS 15 *Revenue from Contracts with Customers* includes guidance on the combination of contracts, in particular that contracts with unrelated parties should not be combined. Notwithstanding the interdependencies, the Directors consider that, as the operators are ultimately purchasing an aircraft from the airframer, of which the engines are part, the engine contract should be considered separately from the aftermarket contract. In making this judgement, they also took account of industry practice.

Key judgement – How performance on long-term aftermarket contracts should be measured

The Group generates a significant proportion of its revenue from aftermarket arrangements. These aftermarket contracts, such as TotalCare and CorporateCare agreements in the Civil Aerospace business, cover a range of services and generally have contractual terms covering more than one year. Under these contracts, the Group's primary obligation is to maintain customers' engines in an operational condition and this is achieved by undertaking various activities, such as maintenance, repair and overhaul, and engine monitoring over the period of the contract. Revenue on these contracts is recognised over the period of the contract and the basis for measuring progress is a matter of judgement. The Directors consider that the stage of completion of the contract is best measured by using the actual costs incurred to date compared to the estimated costs to complete the performance obligations, as this reflects the extent of completion of the activities performed.

Key judgement – Whether any costs should be treated as wastage

In rare circumstances, the Group may incur costs of wasted material, labour or other resources to fulfil a contract where the level of cost was not reflected in the contract price. The identification of such costs is a matter of judgement and would only be expected to arise where there has been a series of abnormal events which give rise to a significant level of cost which is also of a nature that the Group would not expect to incur and hence is not reflected in the contract price. For example: where there are technical issues that require resolution to meet regulatory requirements; have a wide-ranging impact across a product type; and cause significant operational disruption to customers. Similarly, in these rare circumstances, significant disruption costs to support customers resulting from the actual performance of a delivered good or service may be treated as a cost in the period. Any costs identified as wastage are expensed when the obligation to incur them arises – see note 2.

Key judgement – Whether sales of spare engines to joint ventures are at fair value

The Civil Aerospace business maintains a pool of spare engines to support its customers. Some of these engines are sold to, and held by, joint venture companies. The assessment of whether the sales price reflects fair value is a key judgement. The Group considers that based upon its assessment, and by comparison to the sales price of spare engines to other third parties, the sales made to joint ventures reflect the fair value of the goods sold.

Key estimate – Estimates of future revenue and costs on long-term contractual arrangements

The Group has long-term contracts that fall into different accounting periods and which can extend over significant periods (generally up to 25 years) – the most significant of these are long-term service arrangements (LTSAs) in the Civil Aerospace business. The estimated revenue and costs are inherently imprecise and significant estimates are required to assess: engine flying hours, time-on-wing and other operating parameters; the pattern of future maintenance activity and the costs to be incurred; lifecycle cost improvements over the term of the contracts; and escalation of revenue and costs. The estimates take account of the inherent uncertainties, constraining the expected level of revenue as appropriate. In addition, many of the revenues and costs are denominated in currencies other than that of the relevant Group undertaking. These are translated at an estimated long-term exchange rates, based on historical trends and economic forecasts.

1 Accounting policies *continued*

Key estimate – Estimates of future revenue and costs on long-term contractual arrangements (continued)

As previously explained, under IFRS 15 the Group, most significantly in Civil Aerospace, experiences volatility in revenue recognition and contract accounting adjustments of £33m have been recognised in 2019 (2018: £(276)m). Based upon the stage of completion of all widebody programmes as at 31 December 2019 within Civil Aerospace, the following changes in key estimates would result in the following catch-up adjustments recognised in 2020 (at underlying rates):

- 5% increase/decrease in shop visit costs over the life of the programmes – £142m impact
- 2% increase/decrease in revenue over the life of the programmes – £200m impact

Revenue recognised comprises sales to the Group's customers after discounts and amounts payable to customers. Revenue excludes value added taxes. The transaction price of a contract is typically clearly stated within the contract, although the absolute amount may be dependent on escalation indices and long-term contracts require the key estimates highlighted above. Refund liabilities where sales are made with a right of return are not typical in the Group's contracts. Where they do exist, and consideration has been received, a portion, based on an assessment of the expected refund liability is recognised within other payables. The Group has elected to use the practical expedient not to adjust revenue for the effect of financing components, where the expectation is that the period between the transfer of goods and services to customers and the receipt of payment is less than a year.

Sales of standard OE, spare parts and time and material overhaul services are generally recognised on transfer of control to the customer. This is generally on delivery to the customer, unless the specific contractual terms indicate a different point. The Directors consider whether there is a need to constrain the amount of revenue to be recognised on delivery based on the contractual position and any relevant facts, however, this is not typically required.

Sales of services and OE specifically designed for the contract (most significantly in the Defence business) are recognised by reference to the progress towards completion of the performance obligation, using the cost method described in the key judgements, provided the outcome of contracts can be assessed with reasonable certainty.

The Group generates a significant portion of its revenue and profit on aftermarket arrangements arising from the installed OE fleet. As a consequence, in particular in the Civil Aerospace large engine business, the Group will often agree contractual prices for OE deliveries that take into account the anticipated aftermarket arrangements and therefore sometimes this may result in losses being incurred on OE. As described in the key judgements, these contracts are not combined. The consideration in the OE contract is therefore allocated to OE performance obligations and the consideration in the aftermarket contract to aftermarket performance obligations.

- Future variable revenue from long-term contracts is constrained to take account of the risk of non-recovery of resulting contract balances from reduced utilisation e.g. engine flying hours, based on historical forecasting experience and the risk of aircraft being parked by the customer.
- A significant amount of revenue and cost related to long-term contract accounting is denominated in currencies other than that of the relevant Group undertaking, most significantly US dollar transactions in sterling and euro denominated undertakings. These are translated at estimated long-term exchange rates.
- The assessment of stage of completion is generally measured for each contract. However, in certain cases, such as for CorporateCare agreements where there are many contracts covering aftermarket services, each for a small number of engines, the Group accounts for a portfolio of contracts together as the effect on the Consolidated Financial Statements would not differ materially from applying the standard to the individual contracts in the portfolio. When accounting for a portfolio of long-term service arrangements the Group uses estimates and assumptions that reflect the size and composition of the portfolio.
- A contract asset/liability is recognised where payment is received in arrears/advance of the costs incurred to meet performance obligations.
- Where material, wastage costs (see key judgements on page 125) are recorded as an exceptional non-underlying expense.

If the expected costs to fulfil a contract exceed the expected revenue, a contract loss provision is recognised for the excess costs.

The Group pays participation fees to airframe manufacturers, its customers for OE, on certain programmes. Amounts paid are initially treated as contract assets and subsequently charged as a reduction to the OE revenue when the engine is transferred to the customer.

The Group has elected to use the practical expedient to expense as incurred any incremental costs of obtaining or fulfilling a contract if the amortisation period of an asset created would have been one year or less. Where costs to obtain a contract are recognised in the balance sheet they are amortised over the performance of the related contract (average of three years).

1 Accounting policies *continued*

Risk and revenue sharing arrangements (RRSAs)

Key judgement – Determination of the nature of entry fees received

RRSAs with key suppliers (workshare partners) are a feature of the Civil Aerospace business. Under these contractual arrangements, the key commercial objectives are that: (i) during the development phase the workshare partner shares in the risks of developing an engine by performing its own development work, providing development parts and paying a non-refundable cash entry fee; and (ii) during the production phase it supplies components in return for a share of the programme cash flows as a 'life of type' supplier (i.e. as long as the engine remains in service).

The non-refundable cash entry fee is judged by the Group to be a contribution towards the development expenditure incurred. These receipts are deferred on the balance sheet and recognised against the cost of sales over the estimated number of units to be delivered.

The payments to suppliers of their shares of the programme cash flows for their production components are charged to cost of sales as programme revenue arises. Cash entry fees received are initially deferred on the balance sheet and recognised as a reduction in cost of sales incurred, on a 15-year straight-line basis pro rata over the estimated number of units produced.

The Group has arrangements with third parties who invest in a programme and receive a return based on its performance, but do not undertake development work or supply parts. Such arrangements (financial RRSAs) are financial instruments as defined by IAS 32 *Financial Instruments: Presentation* and are accounted for using the amortised cost method.

Royalty payments

Where a government or similar body has previously acquired an interest in the intellectual property of a programme, royalty payments are matched to the related sales.

Government grants

Government grants are recognised in the income statement so as to match them with the related expenses that they are intended to compensate. Where grants are received in advance of the related expenses, they are initially recognised in the balance sheet and released to match the related expenditure. Non-monetary grants are recognised at fair value.

Interest

Interest receivable/payable is credited/charged to the income statement using the effective interest method. Where borrowing costs are attributable to the acquisition, construction or production of a qualifying asset, such costs are capitalised as part of the specific asset.

Taxation

Key judgement – Whether deferred tax assets should be recognised

Deferred tax assets are recognised to the extent it is probable that future taxable profits will be available, against which the deductible temporary difference can be utilised, based on management's assumptions relating to the quantum of future taxable profits.

Key estimate – Estimates necessary to assess whether it is probable that sufficient suitable taxable profits will arise in the UK to utilise the deferred tax assets

Future taxable profits require significant estimates to be made, including: the pattern of future maintenance activity and the costs to be incurred; lifecycle cost improvements over the term of the contracts; and escalation of revenue and costs. The estimates take account of the inherent uncertainties, constraining the expected level of profit as appropriate. Changes in these estimates will affect future profits and therefore the recoverability of the deferred tax assets. Further details can be found in note 5.

A 5% change in margin in the main Civil Aerospace widebody programmes would result in an increase/decrease in profits by circa £2bn (increase/decrease the deferred tax asset by £170m).

The tax charge/credit on the profit or loss for the year comprises current and deferred tax:

- Current tax is the expected tax payable for the year, using tax rates enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in respect of previous years.
- Deferred tax is provided using the balance sheet liability method, providing for temporary differences between the carrying amounts of the assets and liabilities for financial reporting purposes and the amounts used for tax purposes and is calculated using the enacted or substantively enacted rates that are expected to apply when the asset or liability is settled. In the UK, the deferred tax liability on the pension scheme surplus is recognised consistently with the basis for recognising the surplus, i.e. at the rate applicable to refunds from a trust.

Tax is charged or credited to the income statement or OCI as appropriate, except when it relates to items credited or charged directly to equity in which case the tax is also dealt with in equity.

Deferred tax liabilities are recognised for taxable temporary differences arising on investments in subsidiaries and joint arrangements, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax is not recognised on taxable temporary differences arising on the initial recognition of goodwill or for temporary differences arising from the initial recognition of assets and liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit.

1 Accounting policies *continued*

Deferred tax assets are recognised only to the extent that it is probable that future taxable profits will be available against which the assets can be utilised. Further details on the Group's tax position can be found on page 204.

Foreign currency translation

Transactions denominated in currencies other than the functional currency of the transacting Group undertaking are translated into the functional currency at the average monthly exchange rate when the transaction occurs. Monetary assets and liabilities denominated in foreign currencies are translated into the relevant functional currency at the rate prevailing at the year end. Exchange differences arising on foreign exchange transactions and the retranslation of assets and liabilities into functional currencies at the rate prevailing at the year end are included in profit/(loss) before taxation.

The trading results of Group undertakings are translated into sterling at the average exchange rates for the year. The assets and liabilities of overseas undertakings, including goodwill and fair value adjustments arising on acquisition, are translated at the exchange rates prevailing at the year end. Exchange adjustments arising from the retranslation of the opening net investments, and from the translation of the profits or losses at average rates, are recognised in OCI. The cumulative amount of exchange adjustments was, on transition to IFRS in 2004, deemed to be nil.

Financial instruments

Key judgement – Application of the business model and 'solely payments of principal and interest' test

The Group's customer invoices have relatively short payment terms and the related contracts are exposed to basic credit risk and time value of money and therefore the associated financial assets are held as payments of principal and interest.

The Group's customer invoices are ordinarily settled at their due date, in accordance with the contractual payment terms. For certain customers, the Group has the right to discount invoices before their due date to accelerate payment. Where this occurs, customer balances are classified as 'held to collect and sell'. Fair value movements are recognised in OCI, if material (see note 14).

Financial instruments – Classification and measurement

Financial assets

Financial assets primarily include trade receivables, cash and cash equivalents (comprising cash at bank, money market funds and short-term deposits), short-term investments, derivatives (foreign exchange, commodity and interest rate contracts), and unlisted investments.

- Trade receivables are classified either as held to collect and measured at amortised cost or as held to collect and sell and measured at fair value through other comprehensive income (FVOCI). The Group may sell trade receivables due from certain customers before the due date. Any trade receivables from such customers that are not sold at the reporting date are classified as 'held to collect and sell'.
- Cash and cash equivalents (consisting of balances with banks and other financial institutions, money-market funds, short-term deposits) and short-term investments are subject to low market risk. Cash balances and short-term investments are measured at fair value through profit and loss (FVPL). Money market funds and short-term deposits are measured at FVOCI.
- Derivatives and unlisted investments are measured at FVPL.

Financial liabilities

Financial liabilities primarily consist of trade payables, borrowings, derivatives, financial RRSA's and C Shares.

- Derivatives are classified and measured at FVPL.
- All other financial liabilities are classified and measured at amortised cost.

Financial instruments – Impairment of financial assets and contract assets

IFRS 9 *Financial Instruments* sets out the basis for the accounting of expected credit losses (ECLs) on financial assets and contract assets resulting from transactions within the scope of IFRS 15. The Group has adopted the simplified approach to provide for ECLs, measuring the loss allowance at a probability weighted amount that considers reasonable and supportable information about past events, current conditions and forecasts of future economic conditions of customers. These are incorporated in the simplified model adopted by using credit ratings which are publicly available or through internal risk assessments derived using the customer's latest available financial information. The ECLs are updated at each reporting date to reflect changes in credit risk since initial recognition. ECLs are calculated for all financial assets in scope, regardless of whether or not they are overdue.

Financial instruments – Hedge accounting

Forward foreign exchange contracts and commodity swaps (derivative financial instruments) are held to manage the cash flow exposures of forecast transactions denominated in foreign currencies or in commodities respectively. In general, the Group has chosen to not apply hedge accounting in respect of these exposures. Prior to its acquisition in 2017, ITP Aero adopted hedge accounting for its equivalent exposures. It has continued to do so, although the value of the derivatives is not material, relative to those held by the rest of the Group.

The Group economically hedges the fair value and cash flow exposures of its borrowings. Cross-currency interest rate swaps are held to manage the fair value exposures of borrowings denominated in foreign currencies and are designated as fair value hedges. Interest rate swaps are held to manage the interest rate exposures of fixed and floating rate borrowings and may be designated as fair value hedges, cash flow hedges or FVPL as appropriate.

1 Accounting policies continued

Derivative financial instruments qualify for hedge accounting when: (i) there is a formal designation and documentation at inception of the hedge of the hedging relationship and the Group's risk management objective and strategy for undertaking the hedge; and (ii) the hedge is expected to be effective.

Changes in the fair values of derivatives that are designated as fair value hedges are recognised directly in the income statement. The fair value changes of effective cash flow hedge derivatives are recognised in OCI and subsequently recycled in the income statement to match the recognition of the hedged item. Any ineffectiveness in the hedging relationships is included in the income statement.

Hedge accounting is discontinued when the hedging instrument expires or is sold, terminated, exercised, or no longer qualifies for hedge accounting. At that time, for cash flow hedges and if the forecast transaction remains probable, any cumulative gain or loss on the hedging instrument recognised in OCI is retained until the forecast transaction occurs. If a hedged transaction is no longer expected to occur, the net cumulative gain or loss is recycled to the income statement.

Financial instruments – Replacement of benchmark interest rates

Following the financial crisis, the reform and replacement of benchmark interest rates such as GBP LIBOR and other interbank offered rates (IBORs) has become a priority for global regulators. There is currently uncertainty around the timing and precise nature of these changes. The Group's risk exposure that is directly affected by the interest rate benchmark reform is its portfolio of long-term borrowings of £3.0bn. These borrowings are hedged, using interest rate swaps and cross-currency interest rate swaps, for changes in fair value attributable to the relevant benchmark interest rate. However, as part of the reforms noted above, the UK Financial Conduct Authority has decided to no longer compel panel banks to participate in the IBOR submission process after the end of 2021 and to cease oversight of these benchmark interest rates. Regulatory authorities and private sector working groups have been discussing alternative benchmark rates for IBOR. It is currently anticipated that IBOR rates will be replaced with a backward looking risk-free rate based on actual transactions.

Management is in the process of establishing a committee to oversee the Group's IBOR transition plan. This transition project will include changes to systems, processes, risk and valuation models, as well as managing related tax and accounting implications. The Group currently anticipates that the areas of greatest change will be amendments to the contractual terms of IBOR-referenced floating-rate debt and swaps, and updating hedge designations.

Due to the uncertainty around these changes the Group has elected to early adopt the Amendments to IFRS 9, IAS 39 and IFRS 7 *Interest Rate Benchmark Reform* issued in September 2019. In accordance with the transition provisions, the amendments have been adopted retrospectively to hedging relationships that existed at the start of the reporting period or were designated thereafter. The amendments provide temporary relief from applying specific hedge accounting requirements to hedging relationships directly affected by IBOR reform.

The reliefs have the effect that IBOR reform should not generally cause hedge accounting to terminate. However, any hedge ineffectiveness should continue to be recorded in the income statement. Furthermore, the amendments set out triggers for when the reliefs will end, which include the uncertainty arising from interest rate benchmark reform no longer being present.

In summary, the reliefs provided by the amendments that apply to the Group are:

- In assessing whether the hedge is expected to be highly effective on a forward-looking basis, the Group has assumed that the relevant IBOR interest rate on which the cash flows of the interest rate swap that hedges fixed-rate borrowings is not altered by IBOR reform.
- The Group has assessed whether the hedged IBOR risk component is a separately identifiable risk only when it first designates a borrowing as included in a hedging relationship and not on an ongoing basis. Any hedge ineffectiveness relating to fair value hedges is recognised immediately in the income statement.

Business combinations and goodwill

Key judgement – Identification of acquired assets and liabilities

In allocating the purchase price to the acquired assets and liabilities, such as technology, patents and licences, customer relationships, trademarks and in-process development, judgement is required. The allocations based on the Group's industry experience and the advice of third party valuers, if required.

Goodwill recognised represents the excess of the fair value of the purchase consideration over the fair value to the Group of the net of the identifiable assets acquired and the liabilities assumed. On transition to IFRS on 1 January 2004, business combinations were not retrospectively adjusted to comply with Adopted IFRS and goodwill was recognised based on the carrying value under the previous accounting policies. Goodwill in respect of the acquisition of a subsidiary is recognised as an intangible asset. Goodwill arising on the acquisition of joint arrangements and associates is included in the carrying value of the investment.

Customer relationships

The fair value of customer relationships recognised as a result of a business combination relate to the acquired company's established relationships with its existing customers that result in repeat purchases and customer loyalty. Amortisation is charged on a straight-line basis over its useful economic life, up to a maximum of 15 years.

Certification costs

Costs incurred in respect of meeting regulatory certification requirements for new Civil Aerospace aero engine/aircraft combinations including payments made to airframe manufacturers for this are recognised as intangible assets to the extent that they can be recovered out of future sales. They are charged to the income statement over the programme life on a 15-year straight-line basis pro rata over the estimated number of units produced.

1 Accounting policies *continued*

Research and development

Key judgement – Determination of the point in time where costs incurred on an internal programme development meet the criteria for capitalisation or ceasing capitalisation

The Group incurs significant research and development expenditure in respect of various development programmes. Determining when capitalisation should commence and cease is a critical judgement, as is the determination of when subsequent expenditure on the programme assets should be capitalised.

Within the Group there is an established Product Introduction and Lifecycle Management process (PILM) in place. Within this process, the technical feasibility, the commercial viability and financial assessment of the programme is assessed at certain milestones. When these are met, development expenditure is capitalised. Prior to this, expenditure is expensed as incurred.

Subsequent expenditure after entry into service which enhances the performance of the engine and the economic benefits to the Group is capitalised. This expenditure is referred to as enhanced performance and is governed by the PILM process referred to above. All other development costs are expensed as incurred.

Key judgement – Determination of the basis for amortising capitalised development costs

The economic benefits of the development costs are primarily those cash inflows arising from long-term service agreements, which are expected to be relatively consistent for each engine. Amortisation of development costs is recognised on a straight-line basis over 15 years on a proportional basis to aircraft delivery.

Expenditure incurred on research and development is distinguished as relating either to a research phase or to a development phase. All research phase expenditure is charged to the income statement. Development expenditure is recognised as an internally generated intangible asset (programme asset) only if it meets strict criteria, relating in particular to technical feasibility and generation of future economic benefits.

More specifically, development costs are capitalised from the point at which the following conditions have been met:

- the technical feasibility of completing the programme and the intention and ability (availability of technical, financial and other resources) to complete the programme asset and use or sell it;
- the probability that future economic benefits will flow from the programme asset; and
- the ability to measure reliably the expenditure attributable to the programme asset during its development.

Capitalisation continues until the point at which the programme asset meets its originally contracted technical specification (defined internally as the point at which the asset is capable of operating in the manner intended by management).

Subsequent expenditure is capitalised where it enhances the functionality of the programme asset and demonstrably generates an enhanced economic benefit to the Group. All other subsequent expenditure on programme assets is expensed as incurred.

The development costs associated with each engine are amortised on a straight-line basis, over a 15-year period from its delivery. The period of 15 years is an estimate of the period of operation of the engine by its initial operator. In accordance with IAS 38, the basis on which programme assets are amortised is assessed annually.

Software

Software that is not specific to an item of property, plant and equipment is classified as an intangible asset, recognised at its acquisition cost and amortised on a straight-line basis over its useful economic life, up to a maximum of five years. The cost of internally developed software includes direct labour and an appropriate proportion of overheads.

Other intangible assets

These principally include intangible assets arising on acquisition of businesses, such as technology, patents and licences which are amortised on a straight-line basis over a maximum of 15 years and trademarks which are not amortised.

Property, plant and equipment

Property, plant and equipment are stated at acquisition cost less accumulated depreciation and any provision for impairment in value. The cost of self-constructed assets includes the cost of materials, direct labour and an appropriate proportion of overheads and, where appropriate, interest.

Depreciation is provided on a straight-line basis to write off the cost, less the estimated residual value, of property, plant and equipment over their estimated useful lives. No depreciation is recorded on assets in the course of construction. Estimated useful lives are reassessed annually and are as follows:

- Land and buildings, as advised by the Group's professional advisers:
 - freehold buildings – five to 45 years (average 25 years);
 - leasehold buildings – lower of adviser's estimates or period of lease; and
 - no depreciation is provided on freehold land.
- Plant and equipment – five to 25 years (average 12 years).
- Aircraft and engines – five to 20 years (average 14 years).

1 Accounting policies continued

Leases

Key judgement – Determination of lease term

In determining the lease term, the Group considers all facts and circumstances that create an economic incentive to exercise an extension option, or not exercise a termination option. Extension options (or periods after termination) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated). Certain land and building leases have renewal options with renewal dates for the most significant property leases evenly spread between 2022–2028 and in 2041. The Group reviews its judgements on lease terms annually, including the operational significance of the site, especially where utilised for manufacturing activities.

Key estimates – Estimates of the payments required to meet residual value guarantees at the end of engine leases

Engine leases in the Civil Aerospace segment often include clauses that require the engines to be returned to the lessor with specific levels of useable life remaining or cash payments to the lessor. The costs of meeting these requirements are included in the lease payments. The amounts payable are calculated based upon an estimate of the utilisation of the engines over the lease term, whether the engine is restored to the required condition by performing an overhaul at our own cost or through the payments of amounts specified in the contract and any new contractual arrangements arising when the current lease contracts end. At 31 December 2019, the lease liability included £401m relating to the cost of meeting these residual value guarantees, with up to £80m in 2020 and £112m due over the following four years. Where estimates of payments change, an adjustment is made to the lease liability and the right-of-use asset.

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- fixed payments less any lease incentive receivable;
- variable lease payments that are based on an index or a rate;
- amounts expected to be payable by the Group under residual value guarantees;
- the exercise price of a purchase option if the Group is reasonably certain to exercise that option; and
- payments of penalties for termination of the lease, if the lease term reflects the Group exercising that option.

Where leases commence after the initial transition date, the lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the Group's incremental borrowing rate is used, being the rate that the Group would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions. Lease liabilities are revalued at each reporting date using the spot exchange rate.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability or a revaluation of the liability;
- any lease payments made at or before the commencement date less any lease incentives received;
- any initial direct costs; and
- restoration costs.

Each right-of-use asset is depreciated over the shorter of its useful economic life and the lease term on a straight-line basis unless the lease is expected to transfer ownership of the underlying asset to the Group, in which case the asset is depreciated to the end of the useful life of the asset.

Payments associated with the short-term leases are recognised on a straight-line basis as an expense in the income statement. Short-term leases are leases with a lease term of 12 months or less.

Impairment of non-current assets

Key judgement – Determination of cash-generating units for assessing impairment of goodwill

The Group conducts impairment reviews at the cash generating unit (CGU) level. As permitted by IAS 36 *Impairment of assets*, impairment reviews for goodwill are performed at the groups of CGUs level, representing the lowest level at which the Group monitors goodwill for internal management purposes and no higher than the Group's operating segments. The level at which goodwill impairment reviews was performed was at the Rolls-Royce Deutschland Ltd & Co KG and Rolls-Royce Power Systems AG aggregated level.

Key estimate – Estimates of cash flow forecasts and discount rates to support the carrying value of intangible assets (including programme related intangible assets)

The carrying value of intangible assets on the balance sheet is dependent on the estimates of future cash flows arising from the Group's operations, in particular:

- The assessment as to whether there are any indications of impairment of development expenditure, certification costs, and customer relationships recognised as intangible assets (31 December 2019: £3,612m, 31 December 2018: £3,427m) is dependent on estimates of cash flows generated by the relevant programme, the discount rate used to calculate a present value and assumptions on foreign exchange rates.
- In addition, in relation to programme intangible assets, estimates comprise: product performance related estimates (including flying hours and time-on-wing); and estimates for future market share, pricing and cost for uncontracted business. Sensitivities have been disclosed in note 9.

1 Accounting policies continued

Impairment of non-current assets is considered in accordance with IAS 36. Where the asset does not generate cash flows that are independent of other assets, impairment is considered for the cash-generating unit to which the asset belongs. Goodwill, indefinite life intangible assets and intangible assets not yet available for use are tested for impairment annually. Other intangible assets (including programme related intangible assets), property, plant and equipment and investments are assessed for any indications of impairment annually. If any indication of impairment is identified, an impairment test is performed to estimate the recoverable amount.

If the recoverable amount of an asset (or cash-generating unit) is estimated to be below the carrying value, the carrying value is reduced to the recoverable amount and the impairment loss is recognised as an expense. The recoverable amount is the higher of value in use or fair value less costs to dispose, if this is readily available. The value in use is the present value of future cash flows using a pre-tax discount rate that reflects the time value of money and the risk specific to the asset.

Inventories

Inventories are valued on a first-in, first-out basis, at the lower of cost and net realisable value. Cost comprises direct materials and, where applicable, direct labour costs and those direct and indirect overheads, including depreciation of property, plant and equipment, that have been incurred in bringing the inventories to their present location and condition. Net realisable value represents the estimated selling prices less all estimated costs of completion and costs to be incurred in marketing, selling and distribution. All inventories are classified as current as it is expected that they will be used in the Group's operating cycle, regardless of whether this is expected to be within 12 months of the balance sheet date.

Cash and cash equivalents

Cash and cash equivalents include cash at bank and in hand, investments in money-market funds and short-term deposits with a maturity of three months or less on inception. The Group considers overdrafts (repayable on demand) to be an integral part of its cash management activities and these are included in cash and cash equivalents for the purposes of the cash flow statement. Where the Group operates pooled banking arrangements across multiple accounts, these are presented on a net basis when it has both a legal right and intention to settle the balances on a net basis.

Invoice discounting – The Group on a periodic basis undertakes the sale of certain trade receivables to banks. These trade receivables are factored on a non-recourse basis and therefore are derecognised from the Group's balance sheet at the point of sale to the bank. Further details are disclosed in note 14.

Supply chain financing (SCF) – The Group offers a SCF programme in partnership with banks to enable suppliers who are on our standard 75 day or more payment terms to receive their payment sooner. As the Group continues to have a contractual obligation to pay its suppliers and it does not retain any ongoing involvement in the SCF, the related payables are retained on the Group's balance sheet and classified as trade payables. Further details are disclosed in note 18.

Provisions

Key judgement – Assessment of satisfying the criteria for the recognition and measurement of provisions

Judgement is required to determine whether a valid expectation has been created and what costs are allowable to be provided for (especially when measuring contract loss provisions).

Key estimate – Estimates of expenditure required to settle the obligation relating to Trent 1000 claims and to settle long-term contracts assessed as onerous

The Group has provisions at 31 December 2019 of **£2,804m** (31 December 2018: £1,917m). These represent the Directors' best estimate of the expenditure required to settle the obligations at the balance sheet date. These estimates take account of information available and different possible outcomes. The Group considers that at 31 December 2019, the contract loss provision and the Trent 1000 exceptional cost provision are most sensitive to changes in estimates.

The Group has considered two sensitivities which are the impact of a three-month delay on achieving single digit AOGs and a 12-month delay in the availability of the final HPT blade. If either of these two sensitivities materialised the financial impact could be in the range of £60m–£100m.

Provisions are recognised when the Group has a present obligation as a result of a past event, and it is probable that the Group will be required to settle that obligation and are discounted to present value where the effect is material.

1 Accounting policies continued

The principal provisions are recognised as follows:

- Trent 1000 in-service issues – when wastage costs are identified as described on page 125;
- contract losses – based on an assessment of whether the direct costs to fulfil a contract are greater than the expected revenue;
- warranties and guarantees – based on an assessment of future claims with reference to past experience and recognised at the earlier of when the underlying products and services are sold and when the likelihood of a future cost is identified; and
- restructuring – when the Group has approved a detailed and formal restructuring plan, and the restructuring has either commenced or has been publicly announced.

Post-retirement benefits

Key estimate – Estimates of the assumptions for valuing the defined benefit obligation

The Group's defined benefit pension schemes and similar arrangements are assessed annually in accordance with IAS 19 *Employee Benefits*. The valuation, which is based on assumptions determined with independent actuarial advice, resulted in a net deficit of £208m before deferred taxation being recognised on the balance sheet at 31 December 2019 (31 December 2018: surplus of £641m). The size of the net surplus/deficit is sensitive to the actuarial assumptions, which include the discount rate, price inflation, pension and salary increases, transfers, mortality and other demographic assumptions and the levels of contributions. Further details and sensitivities are included in note 21.

Pensions and similar benefits (principally healthcare) are accounted for under IAS 19.

For defined benefit plans, obligations are measured at discounted present value, using a discount rate derived from high-quality corporate bonds denominated in the currency of the plan, whilst plan assets are recorded at fair value. Surpluses in schemes are recognised as assets only if they represent economic benefits available to the Group in the future.

The service and financing costs of such plans are recognised separately in the income statement:

- current service costs are spread systematically over the lives of employees;
- past-service costs and settlements are recognised immediately; and
- financing costs are recognised in the periods in which they arise.

Actuarial gains and losses are recognised immediately in OCI.

In 2018, following clarification provided by the High Court judgement on the Lloyds Banking Group on 26 October 2018, in the UK, the Group recognised the estimated impact of the obligation to equalise pensions for men and women as a past-service cost – see note 21.

Payments to defined contribution schemes are charged as an expense as they fall due.

Share-based payments

The Group provides share-based payment arrangements to certain employees. These are principally equity-settled arrangements and are measured at fair value (excluding the effect of non-market based vesting conditions) at the date of grant. The fair value is expensed on a straight-line basis over the vesting period. The amount recognised as an expense is adjusted to reflect the actual number of shares or options that will vest, except where additional shares vest as a result of the total shareholder return (TSR) performance condition in the long-term incentive plan (LTIP).

Cash-settled share options (grants in the International ShareSave plan) are measured at fair value at the balance sheet date. The Group recognises a liability at the balance sheet date based on these fair values, taking into account the estimated number of options that will actually vest and the relative completion of the vesting period. Changes in the value of this liability are recognised in the income statement for the year.

The cost of shares of Rolls-Royce Holdings plc held by the Group for the purpose of fulfilling obligations in respect of employee share plans is deducted from equity in the consolidated balance sheet. See note 23 for a further description of the share-based payment plans.

Customer financing support

In connection with the sale of its products, the Group will, on occasion, provide financing support for its customers. These arrangements fall into two categories: credit-based guarantees and asset-value guarantees. In accordance with the requirements of IFRS 9 and IFRS 4 *Insurance Contracts*, credit-based guarantees are treated as insurance contracts. The Group considers asset-value guarantees to be non-financial liabilities and accordingly these are also treated as insurance contracts. As described on page 167, the Directors consider the likelihood of crystallisation in assessing whether provision is required for any contingent liabilities.

The Group's contingent liabilities relating to financing arrangements are spread over many years and relate to a number of customers and a broad product portfolio, and are reported on a discounted basis.

Post balance sheet events

Non-adjusting post balance sheet events in relation to pensions and mergers and acquisitions activity are disclosed in notes 21 and 27 respectively.

1 Accounting policies *continued*

Revisions to IFRS not applicable in 2019

Standards and interpretations issued by the IASB are only applicable if endorsed by the EU. Other than IFRS 17 *Insurance Contracts* described below, the Group does not consider that any standards, amendments or interpretations issued by the IASB, but not yet applicable will have a significant impact on the Consolidated Financial Statements.

IFRS 17 *Insurance Contracts*

IFRS 17 is effective from the beginning of 1 January 2021 (although the IASB proposed to delay the effective date by one year to 1 January 2022). IFRS 17 establishes the principles for the recognition, measurement, presentation and disclosure of insurance contracts within the scope of the Standard. The objective of IFRS 17 is to ensure that an entity provides relevant information that faithfully represents those contracts.

The Group is in the process of assessing whether the new standard will impact on the Consolidated Financial Statements.

2 Segmental analysis

The analysis by divisions (business segment) is presented in accordance with IFRS 8 *Operating Segments*, on the basis of those segments whose operating results are regularly reviewed by the Board (which acts as the Chief Operating Decision Maker as defined by IFRS 8). Our four divisions are set out below and referred to collectively as the core businesses.

Civil Aerospace – development, manufacture, marketing and sales of commercial aero engines and aftermarket services

Power Systems – development, manufacture, marketing and sales of reciprocating engines, power systems and nuclear systems for civil power generation

Defence – development, manufacture, marketing and sales of military aero engines, naval engines, submarine nuclear power plants and aftermarket services

ITP Aero – design, research and development, manufacture and casting, assembly and testing of aeronautical engines and gas turbines, and MRO services

Non-core businesses include the trading results of the North America Civil Nuclear business and the Knowledge Management System business which have been treated as a disposal group held for sale at 31 December 2019, the Commercial Marine business until the date of disposal on 1 April 2019, Rolls-Royce Power Development Limited (RRPD) until the date of disposal on 15 April 2019, L'Orange until the date of disposal on 1 June 2018 and other smaller businesses including former Energy businesses not included in the disposal to Siemens in 2014 (Retained Energy). Segmental analysis for 2018 has been restated to reflect the 2019 definition of non-core.

Underlying results

We present the financial performance of our businesses in accordance with IFRS 8 and consistently with the basis on which performance is communicated to the Board each month. Underlying results are presented to reflect the economic impact of the Group's foreign exchange and interest rate risk management activities with interest receivable/(payable) on interest rate swaps not designated into hedging relationships for accounting purposes reclassified from fair value movement on a reported basis to interest receivable/(payable) on an underlying basis – see note 4.

Underlying performance excludes the following:

- the effect of acquisition accounting and business disposals;
- impairment of goodwill and other non-current assets where the reasons for impairment are outside of normal operating activities;
- exceptional items; and
- other items which are market driven and outside the control of management.

Acquisition accounting, business disposals and impairment

We exclude these so that the current year and comparative results are directly comparable.

Exceptional items

We classify items as exceptional where the Directors believe that presentation of our results in this way is more relevant to an understanding of our financial performance, as exceptional items are identified by virtue of their size, nature or incidence.

In determining whether an event or transaction is exceptional, management considers quantitative as well as qualitative factors such as the frequency or predictability of occurrence. Examples of exceptional items include one-time costs and charges in respect of aerospace programmes, costs of restructuring programmes and one-time past-service charges and credits on our post-retirement schemes.

In 2019, the risk-free discount rate we applied to exceptional onerous contract provisions reduced from between 4%–5% to 2%–3%. This was largely driven by movements in US bonds in the last quarter of 2019. The change in the risk-free rate (US bonds) is market driven and the impact of the reduction in the rate has been included as a reconciling difference between underlying performance and reported performance.

Exceptional items are not allocated to segments and may not be comparable to similarly titled measures used by other companies.

2 Segmental analysis continued

Other items

The financing component of the defined benefit pension scheme cost is determined by market conditions and has therefore been included as a reconciling difference between underlying performance and reported performance.

Penalties paid on agreements with investigating bodies are considered to be one-off in nature and are therefore excluded from underlying performance.

The tax effects of the adjustments above are excluded from the underlying tax charge. In addition, changes in tax rates or changes in the amount of recoverable advance corporation tax recognised are also excluded.

See page 139 for the reconciliation between underlying performance and reported performance.

The following analysis sets out the results of the core businesses on the basis described above and also includes a reconciliation of the underlying results to those reported in the consolidated income statement.

	Civil Aerospace £m	Power Systems ¹ £m	Defence £m	ITP Aero £m	Corporate and inter-segment £m	Core businesses £m
Year ended 31 December 2019						
Underlying revenue from sale of original equipment	3,246	2,386	1,461	782	(502)	7,373
Underlying revenue from aftermarket services	4,861	1,159	1,789	154	(75)	7,888
Total underlying revenue	8,107	3,545	3,250	936	(577)	15,261
Gross profit/(loss)	622	909	669	206	(64)	2,342
Commercial and administrative costs	(299)	(374)	(151)	(61)	(53)	(938)
Restructuring	(7)	–	(7)	(1)	–	(15)
Research and development costs	(374)	(176)	(105)	(33)	–	(688)
Share of results of joint ventures and associates	102	(2)	9	–	–	109
Underlying operating profit/(loss)	44	357	415	111	(117)	810
Segment assets	17,954	3,587	2,743	2,160	(2,476)	23,968
Interests in joint ventures and associates	365	18	19	–	–	402
Segment liabilities	(24,819)	(1,450)	(2,950)	(1,129)	2,645	(27,703)
Net (liabilities)/assets	(6,500)	2,155	(188)	1,031	169	(3,333)
Investment in intangible assets, property, plant and equipment, right-of-use assets and joint ventures and associates	1,274	197	110	53	–	1,634
Depreciation, amortisation and impairment	807	278	109	88	–	1,282
Year ended 31 December 2018						
Underlying revenue from sale of original equipment	3,119	2,310	1,452	666	(375)	7,172
Underlying revenue from aftermarket services	4,259	1,124	1,672	113	(54)	7,114
Total underlying revenue	7,378	3,434	3,124	779	(429)	14,286
Gross profit	493	866	690	156	35	2,240
Commercial and administrative costs	(336)	(363)	(170)	(57)	(51)	(977)
Restructuring	(8)	(1)	(3)	(2)	–	(14)
Research and development costs	(332)	(188)	(100)	(30)	–	(650)
Share of results of joint ventures and associates	21	1	10	–	–	32
Underlying operating (loss)/profit	(162)	315	427	67	(16)	631
Segment assets	14,271	3,692	2,612	2,210	(1,621)	21,164
Interests in joint ventures and associates	380	14	16	–	–	410
Segment liabilities	(21,309)	(1,651)	(2,924)	(1,168)	1,743	(25,309)
Net (liabilities)/assets	(6,658)	2,055	(296)	1,042	122	(3,735)
Investment in intangible assets, property, plant and equipment and joint ventures and associates	1,283	119	151	74	–	1,627
Depreciation, amortisation and impairment	500	234	92	87	–	913

¹ The underlying results for Power Systems for 31 December 2018 have been restated to reclassify the North America Civil Nuclear business as non-core.

2 Segmental analysis continued

Reconciliation to reported results

	Core businesses £m	Non-core businesses ^{1,2} £m	Total underlying £m	Underlying adjustments and adjustments to foreign exchange £m	Group at actual exchange rates £m
Year ended 31 December 2019					
Revenue from sale of original equipment	7,373	83	7,456	596	8,052
Revenue from aftermarket services	7,888	106	7,994	541	8,535
Total revenue	15,261	189	15,450	1,137	16,587
Gross profit/(loss)	2,342	45	2,387	(1,445)	942
Commercial and administrative costs	(938)	(41)	(979)	(149)	(1,128)
Restructuring	(15)	1	(14)	14	-
Research and development costs	(688)	(8)	(696)	(74)	(770)
Share of results of joint ventures and associates	109	1	110	(6)	104
Operating profit/(loss)	810	(2)	808	(1,660)	(852)
Gain arising on disposal of businesses	-	-	-	139	139
Profit/(loss) before financing and taxation	810	(2)	808	(1,521)	(713)
Net financing	(223)	(2)	(225)	47	(178)
Profit/(loss) before taxation	587	(4)	583	(1,474)	(891)
Taxation	(281)	4	(277)	(143)	(420)
Profit/(loss) for the year	306	-	306	(1,617)	(1,311)
Attributable to:					
Ordinary shareholders			302	(1,617)	(1,315)
Non-controlling interests			4	-	4
Year ended 31 December 2018					
Revenue from sale of original equipment	7,172	358	7,530	285	7,815
Revenue from aftermarket services	7,114	423	7,537	377	7,914
Total revenue	14,286	781	15,067	662	15,729
Gross profit/(loss)	2,240	210	2,450	(1,252)	1,198
Commercial and administrative costs	(977)	(184)	(1,161)	(434)	(1,595)
Restructuring	(14)	(2)	(16)	16	-
Research and development costs	(650)	(39)	(689)	(79)	(768)
Share of results of joint ventures and associates	32	-	32	(28)	4
Operating profit/(loss)	631	(15)	616	(1,777)	(1,161)
Gain arising on the disposal of L'Orange	-	-	-	358	358
Profit/(loss) before financing and taxation	631	(15)	616	(1,419)	(803)
Net financing	(148)	(2)	(150)	(1,994)	(2,144)
Profit/(loss) before taxation	483	(17)	466	(3,413)	(2,947)
Taxation	(153)	(8)	(161)	715	554
Profit/(loss) for the year	330	(25)	305	(2,698)	(2,393)
Attributable to:					
Ordinary shareholders			297	(2,698)	(2,401)
Non-controlling interests			8	-	8

¹ Includes the North America Civil Nuclear business and the Knowledge Management System business which have been treated as a disposal group held for sale at 31 December 2019, the Commercial Marine business disposed of on the 1 April 2019, RRPD disposed of on the 15 April 2019, L'Orange until the date of disposal on 1 June 2018 and other smaller non-core businesses including former Energy businesses not included in the disposal to Siemens in 2014 (Retained Energy). See note 27 for more details.

² Non-core businesses for 31 December 2018 has been restated to include the North America Civil Nuclear business.

2 Segmental analysis continued**Disaggregation of revenue from contracts with customers****Analysis by type and basis of recognition**

	Civil Aerospace £m	Power Systems ¹ £m	Defence £m	ITP Aero ² £m	Corporate and inter-segment £m	Core businesses £m
Year ended 31 December 2019						
Original equipment recognised at a point in time	3,246	2,285	567	702	(478)	6,322
Original equipment recognised over time	–	101	894	80	(24)	1,051
Aftermarket services recognised at a point in time	1,599	1,026	696	48	(32)	3,337
Aftermarket services recognised over time	3,138	133	1,093	106	(43)	4,427
Total underlying customer contract revenue³	7,983	3,545	3,250	936	(577)	15,137
Other underlying revenue	124	–	–	–	–	124
Total underlying revenue	8,107	3,545	3,250	936	(577)	15,261
Year ended 31 December 2018						
Original equipment recognised at a point in time	3,119	2,257	694	585	(355)	6,300
Original equipment recognised over time	–	53	758	81	(20)	872
Aftermarket services recognised at a point in time	1,575	996	718	(4)	21	3,306
Aftermarket services recognised over time	2,630	128	954	117	(75)	3,754
Total underlying customer contract revenue³	7,324	3,434	3,124	779	(429)	14,232
Other underlying revenue	54	–	–	–	–	54
Total underlying revenue	7,378	3,434	3,124	779	(429)	14,286

¹ The underlying revenue for Power Systems for 31 December 2018 has been re-presented to reclassify the North America Civil Nuclear business as non-core.

² ITP Aero prior year disaggregation of revenue has been restated to be consistent with current year presentation.

³ Includes £(93)m (2018: £(196)m) of revenue recognised in the year relating to performance obligations satisfied in previous years.

	Core businesses £m	Non-core businesses ^{1,2} £m	Total underlying £m	Underlying adjustments and adjustments to foreign exchange ³ £m	Group at actual exchange rates £m
Year ended 31 December 2019					
Original equipment recognised at a point in time	6,322	40	6,362	596	6,958
Original equipment recognised over time	1,051	43	1,094	–	1,094
Aftermarket services recognised at a point in time	3,337	94	3,431	313	3,744
Aftermarket services recognised over time	4,427	12	4,439	228	4,667
Total customer contract revenue	15,137	189	15,326	1,137	16,463
Other revenue	124	–	124	–	124
Total revenue	15,261	189	15,450	1,137	16,587
Year ended 31 December 2018					
Original equipment recognised at a point in time	6,300	64	6,364	283	6,647
Original equipment recognised over time	872	294	1,166	2	1,168
Aftermarket services recognised at a point in time	3,306	388	3,694	148	3,842
Aftermarket services recognised over time	3,754	35	3,789	229	4,018
Total customer contract revenue	14,232	781	15,013	662	15,675
Other revenue	54	–	54	–	54
Total revenue	14,286	781	15,067	662	15,729

¹ Includes the North America Civil Nuclear business and the Knowledge Management System business which have been treated as a disposal group held for sale at 31 December 2019, the Commercial Marine business disposed of on the 1 April 2019, RRPD disposed of on 15 April 2019, L'Orange until the date of disposal on 1 June 2018 and other smaller non-core businesses including former Energy businesses not included in the disposal to Siemens in 2014 (Retained Energy). See note 27 for more details.

² Non-core businesses for 31 December 2018 has been restated to include North America Civil Nuclear business.

³ Includes £(187)m (2018: £nil) of revenue recognised relating to performance obligations satisfied in previous years over and above that in underlying revenue.

2 Segmental analysis continued

Analysis by geographical destination

The Group's revenue by destination of the ultimate operator is as follows:

	2019 £m	2018 £m
United Kingdom	1,805	1,505
Germany	961	1,177
Switzerland	520	675
Spain	375	343
France	284	251
Italy	235	304
Russia	106	79
Norway	87	246
Rest of Europe	979	815
Europe	5,352	5,395
United States	4,720	5,041
Canada	298	366
North America	5,018	5,407
South America	377	351
United Arab Emirates	438	105
Rest of Middle East	714	584
Middle East	1,152	689
China	1,698	1,483
Singapore	702	452
Japan	607	365
South Korea	252	334
India	82	82
Malaysia	32	111
Rest of Asia	590	588
Asia	3,963	3,415
Africa	246	152
Australasia	361	229
Other	118	91
	16,587	15,729

Order backlog

Contracted consideration that is expected to be recognised as revenue when performance obligations are satisfied in the future (referred to as order backlog) is as follows:

	2019			2018		
	Within five years £bn	After five years £bn	Total £bn	Within five years £bn	After five years £bn	Total £bn
Civil Aerospace	22.9	25.6	48.5	22.1	30.2	52.3
Power Systems	2.6	0.3	2.9	2.9	0.2	3.1
Defence	7.7	0.9	8.6	6.3	0.5	6.8
ITP Aero	0.7	0.2	0.9	0.8	0.1	0.9
	33.9	27.0	60.9	32.1	31.0	63.1

The parties to these contracts have approved the contract and our customers do not have a unilateral enforceable right to terminate the contract without compensation. We exclude Civil Aerospace OE orders (for deliveries beyond the next 7-12 months) that our customers have placed where they retain a right to cancel. Our expectation based on historical experience is that these orders will be fulfilled. Within the 0-5 years category, contracted revenue in: Defence will largely be recognised in the next three years; Power Systems will be recognised over the next two years as it is a short cycle business; and ITP Aero (where internal Group revenues have been eliminated) evenly spread over the next five years.

2 Segmental analysis continued**Underlying adjustments**

	2019			2018		
	Revenue £m	Profit before financing £m	Net financing £m	Revenue £m	Profit before financing £m	Net financing £m
Underlying performance	15,450	808	(225)	15,067	616	(150)
Transactions recognised at exchange rate on date of cash flow and revaluation of trading assets/liabilities ¹	1,137	145	80	781	(23)	163
Impact of unrealised fair value changes to derivative contracts held for trading ²	–	(1)	(6)	–	(1)	(2,144)
Impact of unrealised fair value changes to derivative contracts held for financing ³	–	–	1	–	–	(3)
Exceptional programme charges ^{4,5}	–	(1,409)	–	(119)	(976)	(15)
Impact of discount rate changes ⁶	–	–	(40)	–	–	–
Exceptional restructuring charges ^{4,7}	–	(136)	–	–	(317)	–
(Loss)/gains arising on the acquisitions and disposals ⁸	–	(24)	(8)	–	183	(8)
Impairments and asset write-offs ⁹	–	(84)	–	–	(155)	–
Other ¹⁰	–	(12)	20	–	(130)	13
Total underlying adjustments	1,137	(1,521)	47	662	(1,419)	(1,994)
Reported per consolidated income statement	16,587	(713)	(178)	15,729	(803)	(2,144)

¹ The adjustments for realised gains/(losses) on settled derivative contracts include adjustments to reflect the gains/(losses) in the same period as the related trading cash flows.

² The adjustments for unrealised fair value changes to derivative contracts contain those included in equity accounted joint ventures and exclude those for which the related trading contracts have been cancelled when the fair value changes are recognised immediately in underlying profit before taxation.

³ Includes the losses on hedge ineffectiveness in the period of £13m (2018: losses £3m).

⁴ The table below summarises the exceptional items recorded in 2019 and 2018.

	Year to 31 December	
	2019 £m	2018 £m
Programme charges and associated contract losses ⁵	1,409	976
Related foreign exchange impact ⁵	171	147
Restructuring charges ⁷	136	317
Pension charges ¹⁰	–	121
	1,716	1,561

⁵ Included within programme exceptional items is £1,361m (2018: £790m), £1,531m (2018: £905m) at prevailing exchange rates, in respect of the abnormal wastage costs on the Trent 1000. This includes £0.2bn of insurance receipts in respect of the Trent 1000 in-service issues. In addition, there is an exceptional item of £48m (2018: 186m), £49m (2018: £218m) at prevailing exchange rates that relates to the decision by Airbus to cease A380 deliveries in 2021. For information on the associated provisions – see note 20.

⁶ Included within discount rate changes is £30m relating to Trent 900 and £10m relating to Trent 1000 for the impact from the change in discount rates on contract losses recorded in exceptional items in prior years as a result of the fall in US bonds, which drives the calculation of the risk-free rate.

⁷ The Group recorded an exceptional restructuring charge of £136m (2018: £317m) in the year. The costs include: £88m (2018: £223m) in respect of the Group-wide restructuring programme announced on 14 June 2018; costs relating to ongoing multi-year significant restructuring programmes including restructuring at Power Systems and in respect of Defence, reflecting actions to remove cost and improve operational efficiency.

⁸ (Loss)/gains arising on the acquisitions and disposals of businesses. See note 27 for more details (also including the amortisation of intangible assets arising on previous acquisitions).

⁹ In 2019, there has been an impairment of £58m relating to Bergen Engines AS, and impairment charge and asset write offs of £26m following the announcement to sell the North America Civil Nuclear business within the Power Systems business segment. The impairment charge in 2018 of £155m related to Commercial Marine.

¹⁰ Other includes the 2018 cost of equalisation of pension benefits between men and women – see note 21.

Appropriate rates of tax have been applied to adjustments made to profit before tax in the table above. Adjustments in 2019 which impact the UK tax loss have an effective tax rate of zero. See note 5 for more details. The total underlying adjustments to profit before tax in 2019 are a charge of £143m (2018: credit £715m). The charge in 2019 was £57m plus an additional charge of £86m relating to the derecognition of UK deferred tax assets on foreign exchange and commodity financial assets and liabilities. The credit in 2018 was £672m plus an additional credit of £43m relating to the reduction in the Spanish Basque region tax rate.

2 Segmental analysis continued**Reconciliation to the balance sheet**

	2019 £m	2018 £m
Reportable segment assets	23,968	21,164
Interests in joint ventures and associates	402	412
Non-core businesses	84	188
Assets held for sale	18	750
Cash and cash equivalents and short-term investments	4,449	4,980
Fair value of swaps hedging fixed rate borrowings	249	293
Deferred and income tax assets	1,926	2,126
Post-retirement scheme surpluses	1,170	1,944
Total assets	32,266	31,857
Reportable segment liabilities	(27,703)	(25,309)
Non-core businesses	(43)	(159)
Liabilities associated with assets held for sale	(15)	(376)
Borrowings and lease liabilities	(5,685)	(4,662)
Fair value of swaps hedging fixed rate borrowings	(6)	-
Deferred and income tax liabilities	(790)	(1,100)
Post-retirement scheme deficits	(1,378)	(1,303)
Total liabilities	(35,620)	(32,909)
Net liabilities	(3,354)	(1,052)

The carrying amounts of the Group's non-current assets including investments but excluding financial instruments, deferred tax assets and post-employment benefit surpluses, by the geographical area in which the assets are located, are as follows:

	2019 £m	2018 £m
United Kingdom	6,446	4,626
Germany	2,568	2,604
United States	1,506	1,338
Spain	1,324	1,380
Other	826	710
	12,670	10,658

3 Research and development

	2019 £m	2018 £m
Expenditure in the year	(1,118)	(1,145)
Capitalised as intangible assets	481	498
Amortisation and impairment of capitalised costs ¹	(133)	(121)
Net cost recognised in the income statement	(770)	(768)
Underlying adjustments relating to effects of acquisition accounting and foreign exchange	74	79
Net underlying cost recognised in the income statement	(696)	(689)

¹ See note 9 for analysis of amortisation and impairment.

4 Net financing

	Note	2019		2018	
		Per consolidated income statement £m	Underlying financing ¹ £m	Per consolidated income statement £m	Underlying financing ¹ £m
Interest receivable		31	31	27	27
Net fair value gains on non-hedge accounted interest rate swaps ²	19	14	–	–	–
Financial RRSAs – foreign exchange differences and changes in forecast payments	19	11	–	25	–
Net fair value gains on commodity contracts	19	36	–	–	–
Financing on post-retirement scheme surpluses	21	60	–	56	–
Net foreign exchange gains		100	–	163	–
Financing income		252	31	271	27
Interest payable		(182)	(163)	(107)	(99)
Net fair value losses on foreign currency contracts	19	(43)	–	(2,122)	–
Financial RRSAs – foreign exchange differences and changes in forecast payments	19	(10)	–	(27)	–
Financial charge relating to financial RRSAs	19	(3)	(3)	(8)	(8)
Net fair value losses on commodity contracts	19	–	–	(22)	–
Financing on post-retirement scheme deficits	21	(37)	–	(33)	–
Other financing charges		(155)	(90)	(96)	(70)
Financing costs		(430)	(256)	(2,415)	(177)
Net financing costs		(178)	(225)	(2,144)	(150)
Analysed as:					
Net interest payable		(151)	(132)	(80)	(72)
Net fair value gains/(losses) on derivative contracts		7	–	(2,144)	–
Net post-retirement scheme financing		23	–	23	–
Net other financing		(57)	(93)	57	(78)
Net financing costs		(178)	(225)	(2,144)	(150)

¹ See note 2 for definition of underlying results.

² The consolidated income statement shows the net fair value gain on any interest rate swaps not designated into hedging relationships for accounting purposes. Underlying financing reclassifies the interest receivable on these interest rates swaps from fair value movement to interest payable.

5 Taxation

	UK		Overseas		Total	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
Current tax charge for the year	15	13	228	167	243	180
Adjustments in respect of prior years	(4)	(13)	(3)	15	(7)	2
Current tax	11	–	225	182	236	182
Deferred tax charge/(credit) for the year	117	(630)	(24)	(43)	93	(673)
Adjustments in respect of prior years	20	22	(15)	(42)	5	(20)
Derecognition of deferred tax	86	–	–	–	86	–
Deferred tax credit resulting from reduction in tax rates	–	–	–	(43)	–	(43)
Deferred tax	223	(608)	(39)	(128)	184	(736)
Charged/(credited) in the income statement	234	(608)	186	54	420	(554)

5 Taxation continued**Other tax credits/(charges)**

	OCI				Equity	
	Items that will not be reclassified		Items that may be reclassified			
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
Deferred tax:						
Movement in post-retirement schemes	324	(2)	–	–	–	–
Share-based payments – direct to equity	–	–	–	–	1	2
Cash flow hedge	–	–	(5)	5	–	–
Net investment hedge	–	–	(1)	–	–	–
Other tax credits/(charges)	324	(2)	(6)	5	1	2

Tax reconciliation

	2019 £m	2018 £m
Loss before taxation	(891)	(2,947)
Less share of results of joint ventures and associates (note 12)	(141)	(114)
Loss before taxation excluding joint ventures and associates	(1,032)	(3,061)
Nominal tax credit at UK corporation tax rate 19% (2018: 19%)	(196)	(582)
UK tax rate differential ¹	56	51
Overseas rate differences ²	58	91
Impairment of goodwill	1	29
Exempt gain on the disposal of Commercial Marine	(20)	–
Exempt gain on the disposal of L'Orange	–	(117)
R&D credits	(34)	(23)
Other permanent differences	8	36
Tax losses in year not recognised in deferred tax ³	463	22
Derecognition of deferred tax ⁴	86	–
Adjustments in respect of prior years	(2)	(18)
Reduction in closing deferred taxes resulting from decrease in tax rate in the Spanish Basque region	–	(43)
	420	(554)
Underlying items (note 2)	277	161
Non-underlying items	143	(715)
	420	(554)

¹ The UK tax rate differential arises on the difference between the deferred tax rate and the UK statutory tax rate.

² Overseas rate differences mainly relate to tax on profits in countries, such as the US and Germany, which have higher tax rates than the UK.

³ Tax losses not recognised mainly relate to the UK in 2019 – see pages 143 to 144.

⁴ Derecognition of deferred tax assets relating to foreign exchange and commodity financial assets and liabilities – see page 144.

Deferred taxation assets and liabilities

	2019 £m	2018 £m
At 1 January	1,130	380
Impact of adopting IFRS 16 (2018: Impact of adopting IFRS 9)	8	2
Amount (charged)/credited to income statement	(184)	736
Amount credited/(charged) to other comprehensive income	323	(2)
Amount (charged)/credited to cash flow hedge reserve	(5)	5
Amount credited to equity	1	2
On disposal/acquisition of businesses ¹	(3)	6
Transferred to assets held for sale ²	(2)	(4)
Exchange differences	1	5
At 31 December	1,269	1,130
Deferred tax assets	1,887	2,092
Deferred tax liabilities	(618)	(962)
	1,269	1,130

¹ The 2019 deferred tax on disposal of businesses relates to Commercial Marine. The 2018 comparative relates to the disposal of L'Orange.

² The 2019 deferred tax transferred to assets held for sale relates to the North America Civil Nuclear business. The 2018 comparative relates to Commercial Marine.

5 Taxation continued

The analysis of the deferred tax position is as follows:

	At 1 January £m	Impact of adopting IFRS 16 £m	At 1 January restated £m	Recognised in income statement £m	Recognised in OCI £m	Recognised in equity £m	Merger and acquisition related activity £m	Exchange differences £m	At 31 December £m
2019									
Intangible assets	(620)	–	(620)	(135)	–	–	(2)	31	(726)
Property, plant and equipment	(85)	(74)	(159)	10	–	–	(1)	12	(138)
Other temporary differences	164	82	246	147	(6)	1	2	(16)	374
Net contract liabilities	57	–	57	(2)	–	–	–	–	55
Pensions and other post-retirement scheme benefits	(461)	–	(461)	(1)	324	–	(3)	(13)	(154)
Foreign exchange and commodity financial assets and liabilities	625	–	625	(200)	–	–	–	–	425
Losses	1,010	–	1,010	9	–	–	(1)	(1)	1,017
R&D credit	277	–	277	(12)	–	–	–	(12)	253
Advance corporation tax	163	–	163	–	–	–	–	–	163
	1,130	8	1,138	(184)	318	1	(5)	1	1,269

	At 1 January £m	Impact of adopting IFRS 9 £m	At 1 January restated £m	Recognised in income statement £m	Recognised in OCI £m	Recognised in equity £m	Merger and acquisition related activity £m	Exchange differences £m	At 31 December £m
2018									
Intangible assets	(419)	–	(419)	(203)	–	–	5	(3)	(620)
Property, plant and equipment	(158)	–	(158)	77	–	–	1	(5)	(85)
Other temporary differences	258	2	260	(106)	5	2	(1)	4	164
Net contract liabilities	63	–	63	(6)	–	–	–	–	57
Pensions and other post-retirement scheme benefits	(482)	–	(482)	19	(2)	–	(3)	7	(461)
Foreign exchange and commodity financial assets and liabilities	381	–	381	244	–	–	–	–	625
Losses	306	–	306	704	–	–	–	–	1,010
R&D credit	268	–	268	7	–	–	–	2	277
Advance corporation tax	163	–	163	–	–	–	–	–	163
	380	2	382	736	3	2	2	5	1,130

Unrecognised deferred tax assets

	2019 £m	2018 £m
Advance corporation tax	19	19
UK losses	438	–
Foreign exchange and commodity financial assets and liabilities	86	–
Losses and other unrecognised deferred tax assets	68	111
Deferred tax not recognised on unused tax losses and other items on the basis that future economic benefit is uncertain	611	130

Deferred tax assets of **£1,887m** include **£1,010m** (2018: £998m) relating to tax losses in the UK and **£163m** (2018: £163m) relating to Advance Corporation Tax (ACT). These assets have been recognised based on the expectation that the UK business will generate taxable profits and tax liabilities in the future against which the losses and ACT can be utilised.

Most of the tax losses relate to the Group's Civil Aerospace widebody business in the UK which makes initial losses through the investment period of a programme and then makes a profit through its contracts for services. The programme lifecycles typically range between 30 and 55 years with more of the widebody engine programmes forecast at the upper end of that range. In the past few years there have been four new engines that have entered into service (Trent 1000 TEN, Trent 7000, Trent XWB-84 and Trent XWB-97), all of which are still in the investment stage.

Deferred tax assets are recognised only to the extent that it is probable that future taxable profits will be available against which the assets can be utilised. A recoverability assessment has been undertaken, taking account of deferred tax liabilities against which the reversal can be offset and using latest UK forecasts, which are mainly driven by the Group's Civil Aerospace widebody business, to assess the level of future taxable profits.

5 Taxation continued

The recoverability of UK deferred tax assets relating to UK tax losses and ACT has been assessed in 2019 on the following basis:

- using the most recent UK profit forecasts prepared by management, which are consistent with past experience and external sources on market conditions. These forecasts cover the next five years;
- the long-term forecast profit profile of certain of the major widebody engine programmes which is typically between 30 and 55 years from initial investment to retirement of the fleet, including the aftermarket revenue earned from airline customers; and
- the long-term forecast profit and cost profile of the other parts of the Group's UK business.

The assessment takes into account UK tax laws that, in broad terms, restrict the offset of the carried forward tax losses to 50% of current year profits. Based on this assessment, the Group has recognised a deferred tax asset of £1,010m relating to losses and £163m relating to ACT. This reflects the Group's conclusions that:

- It is probable that the UK business will generate taxable income and tax liabilities in the future against which these losses and the ACT can be utilised.
- Based on current forecasts and using various scenarios these losses and the ACT will be used in full within the next 20 to 30 years which is within the expected widebody engine programme lifecycles.

A deferred tax asset of £438m has not been recognised. This is based on management's assumptions relating to the amounts and timing of future taxable profits and takes into account that higher losses were incurred in 2019 than expected, primarily due to the recognition of a £1.4bn exceptional charge in respect of the Trent 1000.

Changes in future profits will impact the recoverability of the deferred tax assets, and as explained in note 1, the key assumptions impact contract margins. A 5% change in such margins would result in around a £2bn change in UK profits over the remaining life of the programmes against which the recovery of the tax losses and ACT would be assessed. Such a variance could result in a change of up to £170m in the related deferred tax balances recorded on the Group balance sheet, assuming a 17% tax rate and the 50% loss offset restriction mentioned above.

The Group has also reassessed the recovery of other deferred tax assets, including those arising on unrealised losses on derivative contracts. Whilst the deferred tax asset has reduced anyway as a result of the reduction in the unrealised losses in 2019, the Group has also derecognised £86m in line with the approach outlined above. The impact of this is non-underlying.

Any future changes in tax law or the structure of the Group could have a significant effect on the use of losses and ACT, including the period over which they can be used. In view of this and the significant judgement involved, the Board continuously reassesses this area.

The 2016 Budget announced that the UK tax rate will reduce to 17% with effect from 1 April 2020. The rate reduction to 17% has been substantively enacted on 6 September 2016. The deferred tax assets and liabilities of UK companies within the Group have therefore been calculated at 17%.

The temporary differences associated with investments in subsidiaries, joint ventures and associates, for which a deferred tax liability has not been recognised, aggregate to **£108m** (2018: £99m). No deferred tax liability has been recognised on the potential withholding tax due on the remittance of undistributed profits as the Group is able to control the timing of such remittances and it is probable that consent will not be given in the foreseeable future.

6 Earnings per ordinary share

Basic earnings per ordinary share (EPS) is calculated by dividing the loss attributable to ordinary shareholders by the weighted average number of ordinary shares in issue during the year, excluding ordinary shares held under trust, which have been treated as if they had been cancelled.

Diluted EPS is calculated by adjusting the weighted average number of ordinary shares in issue during the year for the bonus element of share options.

	2019			2018		
	Basic	Potentially dilutive share options ¹	Diluted	Basic	Potentially dilutive share options ¹	Diluted
Loss attributable to ordinary shareholders (£m)	(1,315)	–	(1,315)	(2,401)	–	(2,401)
Weighted average number of ordinary shares (millions)	1,904	–	1,904	1,859	–	1,859
EPS (pence)	(69.07p)	–	(69.07p)	(129.15p)	–	(129.15p)

¹ As there is a loss, the effect of potentially dilutive ordinary shares is antidilutive.

The reconciliation between underlying EPS and basic EPS is as follows:

	2019		2018	
	Pence	£m	Pence	£m
Underlying EPS/underlying profit attributable to ordinary shareholders	15.86	302	15.98	297
Total underlying adjustments to loss before tax (note 2)	(77.42)	(1,474)	(183.59)	(3,413)
Related tax effects	(7.51)	(143)	38.46	715
EPS/loss attributable to ordinary shareholders	(69.07)	(1,315)	(129.15)	(2,401)
Diluted underlying EPS	15.86		15.98	

7 Auditors' remuneration

	2019 £m	2018 £m
Fees payable to the Company's auditors and its associates for the audit of the Parent Company and Consolidated Financial Statements	2.8	1.8
Fees payable to the Company's auditor and its associates for the audit of the Company's subsidiaries pursuant to legislation ¹	7.0	7.3
Total fees payable for audit services	9.8	9.1
Fees payable to the Company's auditor and its associates for other services:		
Audit related assurance services ²	0.5	0.5
Other assurance services ³	0.6	0.4
Total fees payable to the Company's auditor and its associates ⁴	10.9	10.0
Fees payable in respect of the Group's pension schemes:		
Audit	0.1	0.1

¹ The level of fees payable to the Company's auditor for the audit of the Company's Financial Statements reflects the fact that limited incremental work is required in respect of the audit of these financial statements. Rolls-Royce plc, a subsidiary of the Company, is also required to prepare Consolidated Financial Statements and the fees payable to the Company's auditor for the audit of those financial statements, including the audit of the sub-consolidation, is included in the audit of the Company's subsidiaries pursuant to legislation.

² This includes £0.5m (2018: £0.5m) for the review of the half-year report.

³ This relates to the audit of grant claims.

⁴ Audit fees for overseas entities are reported at the average exchange rate for the year.

8 Employee information

	2019 Number	2018 Number
United Kingdom	23,300	23,400
Germany	9,800	10,000
United States	6,000	6,300
Spain	3,200	2,800
Nordics	1,300	3,000
Singapore	1,300	1,400
Canada	1,000	1,000
India	1,000	1,000
Italy	900	800
France	700	700
Rest of world	3,200	4,100
Monthly average number of employees	51,700	54,500
Civil Aerospace	26,100	25,500
Power Systems	10,400	10,500
Defence	9,900	10,500
ITP Aero	3,900	3,700
Corporate ¹	100	100
Core businesses	50,400	50,300
Non-core businesses ²	1,300	4,200
Monthly average number of employees	51,700	54,500
	2019 £m	2018 £m
Wages, salaries and benefits	3,075	3,208
Social security costs	473	479
Share-based payments (note 23)	30	35
Pensions and other post-retirement scheme benefits (note 21)	356	470
Group employment costs ³	3,934	4,192

¹ Corporate consists of employees who do not provide a shared service to the business segments. Where corporate functions provide such a service, employees have been allocated to the business segments on an appropriate basis.

² Includes the North America Civil Nuclear business (disposal group held for sale), Commercial Marine (disposed of on 1 April 2019), RRPD (disposed of on 15 April 2019), L'Orange (disposed of on 1 June 2018) and Retained Energy. See note 27 for more details.

³ Remuneration of key management personnel is shown in note 26.

9 Intangible assets

	Goodwill £m	Certification costs £m	Development expenditure £m	Customer relationships £m	Software £m	Other £m	Total £m
Cost							
At 1 January 2018	1,869	917	2,459	1,432	869	794	8,340
Additions	–	35	498	–	110	37	680
Transferred to assets held for sale ¹	(666)	–	(38)	(26)	(6)	(12)	(748)
Disposal of L'Orange ²	(136)	–	(48)	(40)	–	(11)	(235)
Disposals	–	(4)	(1)	–	(16)	–	(21)
Reclassifications	5	–	–	–	3	(3)	5
Exchange differences	15	–	13	18	4	6	56
At 31 December 2018	1,087	948	2,883	1,384	964	811	8,077
Additions	–	15	481	–	101	43	640
Acquisition of businesses	11	–	–	–	4	23	38
Transferred to assets held for sale ¹	(34)	–	(11)	(16)	(3)	(11)	(75)
Disposals	–	–	(8)	(1)	(111)	(19)	(139)
Reclassifications from PPE	–	–	17	–	19	(18)	18
Exchange differences	(40)	(1)	(68)	(64)	(7)	(26)	(206)
At 31 December 2019	1,024	962	3,294	1,303	967	803	8,353
Accumulated amortisation and impairment							
At 1 January 2018	324	339	1,045	256	488	323	2,775
Charge for the year ³	–	35	114	90	103	39	381
Impairment	155	–	7	–	22	–	184
Transferred to assets held for sale ¹	(439)	–	(29)	(21)	(1)	(12)	(502)
Disposal of L'Orange ²	–	–	(31)	(27)	–	(8)	(66)
Disposals	–	–	–	–	(8)	–	(8)
Reclassifications	5	(1)	–	–	1	–	5
Exchange differences	(3)	–	5	6	2	3	13
At 31 December 2018	42	373	1,111	304	607	345	2,782
Charge for the year ³	–	19	113	72	88	26	318
Impairment	18	–	20	9	7	–	54
Transferred to assets held for sale ¹	(34)	–	(11)	(16)	(3)	(11)	(75)
Disposals	–	–	(7)	(1)	(99)	(19)	(126)
Reclassifications from PPE	–	–	–	–	10	(1)	9
Exchange differences	4	–	(25)	(14)	(5)	(11)	(51)
At 31 December 2019	30	392	1,201	354	605	329	2,911
Net book value							
At 31 December 2019	994	570	2,093	949	362	474	5,442
At 31 December 2018	1,045	575	1,772	1,080	357	466	5,295

¹ The North America Civil Nuclear business was classified as a disposal group held for sale on 26 September 2019, prior to this an impairment of goodwill of £15m was recognised. The Commercial Marine business was classified as a disposal group held for sale on 30 June 2018 – see note 27.

² The disposal of the L'Orange business to Woodward Inc. was completed on 1 June 2018 – see note 27.

³ Charged to cost of sales and commercial and administrative costs except development costs, which are charged to research and development costs.

9 Intangible assets *continued*

Goodwill

In accordance with the requirements of IAS 36 *Impairment of Assets*, goodwill is allocated to the Group's cash-generating units (CGUs), or groups of CGUs, that are expected to benefit from the synergies of the business combination that gave rise to the goodwill as follows:

	Primary reporting segment	2019 £m	2018 £m
Rolls-Royce Power Systems AG	Power Systems	718	750
Rolls-Royce Deutschland Ltd & Co KG	Civil Aerospace	234	246
Other	Various	42	49
		994	1,045

Goodwill has been tested for impairment during 2019 on the following basis:

- The carrying values of goodwill have been assessed by reference to value in use. These have been estimated using cash flows from the most recent forecasts prepared by management, which are consistent with past experience and external sources of information on market conditions. These forecasts generally cover the next five years. Growth rates for the period not covered by the forecasts are based on a range of growth rates between 1.0%–2.5% that reflect the products, industries and countries in which the relevant CGU or group of CGUs operate.
- The key assumptions for the impairment tests are the discount rate and, in the cash flow projections, the programme assumptions, the growth rates and the impact of foreign exchange rates on the relationship between selling prices and costs. Impairment tests are performed using prevailing exchange rates.

The principal value in use assumptions for goodwill balances considered to be individually significant are:

Rolls-Royce Power Systems AG

- trading assumptions (e.g. volume of equipment deliveries, pricing achieved and cost escalation) are based on current and known future programmes, estimates of capture of market share and long-term economic forecasts;
- cash flows beyond the five-year forecasts are assumed to grow at 1.0% (2018: 1.8%); and
- pre-tax discount rate 12% (2018: 12%).

The Directors do not consider that any reasonably possible changes in the key assumptions would cause the value in use of the goodwill to fall below its carrying value.

Rolls-Royce Deutschland Ltd & Co KG

- trading assumptions (e.g. volume of engine deliveries, flying hours of installed fleet and cost escalation) are based on current and known future programmes, estimates of customers' fleet requirements and long-term economic forecasts;
- cash flows beyond the five-year forecasts are assumed to grow at 2.5% (2018: 2.5%); and
- pre-tax discount rate 14% (2018: 13%).

The Directors do not consider that any reasonably possible changes in the key assumptions would cause the value in use of the goodwill to fall below its carrying value.

Commercial Marine

On 6 July 2018, the Group announced the sale of Commercial Marine to KONGSBERG. The disposal met the criteria of IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations* that where the carrying value of a disposal group is expected to be recovered through a sale transaction, the disposal group should be treated as held for sale, with assets and liabilities presented separately on the balance sheet measured at the lower of carrying value or fair value less costs to sell.

As a result of the classification of the Commercial Marine business as a disposal group, its carrying value was assessed against the anticipated proceeds and the disposal costs. An impairment charge of £155m for the related goodwill (with an additional £5m impairment charge to property, plant and equipment) was recognised in the income statement at 31 December 2018 and the remaining net balance of £227m transferred to assets held for sale and associated liabilities.

The Commercial Marine business was disposed of on 1 April 2019 – see note 27.

9 Intangible assets *continued*

Other intangible assets (including programme-related intangible assets)

Other intangible assets have been reviewed for impairment in accordance with the requirements of IAS 36 *Impairment of Assets*. Where an impairment test was considered necessary, it has been performed on the following basis:

- The carrying values have been assessed by reference to value in use. These have been estimated using cash flows from the most recent forecasts prepared by management, which are consistent with past experience and external sources of information on market conditions over the lives of the respective programmes.
- The key assumptions underlying cash flow projections are assumed market share, programme timings, unit cost assumptions, discount rates, and foreign exchange rates.
- The pre-tax cash flow projections have been discounted at **7%–15%** (2018: 7%–13%), based on the Group's weighted average cost of capital, adjusted for the estimated programme risk, for example taking account of whether or not the forecast cash flows arise from contracted business.

In addition, for programme-related intangible assets, these have been reviewed for impairment in accordance with the requirements of IAS 36. Where there is a triggering event, an impairment test has been performed on the following basis:

- The programme related intangible asset's carrying value as at 31 December is compared to the asset's recoverable amount. The Group has determined that the recoverable amount of the asset should be calculated on a value in use basis as this represents the highest value to the Group in terms of the future cash flows that it can generate.
- Future cash flows used in the value in use calculations are based on our most recent forecasts prepared by management and are discounted using a pre-tax discount rate that reflects current market assessment of the time value of money. These forecasts include contracted business together with management's expectation of speculative business over the life of the programme together with cash outflows that are necessary to maintain the current level of economic benefit expected to arise from the asset in its current condition.
- The key programme assumptions underlying cash flow projections are forecast market share and pricing, engine flying hours, number of shop visits/cost of shop visits, R&D, capital investment and foreign exchange rates.
- The pre-tax cash flow projections have been discounted at **7%–15%** (2018: 7%–13%).

No impairment was identified (2018: no impairment). For programmes where the headroom could be significantly reduced over the next 12 months any of the following changes in assumptions, in isolation, would cause the recoverable amount of the programme assets to equal its carrying value:

- an increase in discount rates by 36%
- an increase in costs of 10%

The carrying amount and the residual life of the material intangible assets (excluding goodwill) for the Group is as follows:

	Residual life	Net book value	
		2019 £m	2018 £m
Trent programme intangible assets ¹	7–15 years	1,720	1,524
Business Aviation programme intangible assets ²	15 years	587	393
Customer relationship assets on acquisition of ITP Aero	typically 13–35 years	676	740
Intangible assets from acquisition of Power Systems ³		489	578
		3,472	3,235

¹ Included within the Trent programmes are the Trent 1000, Trent 7000 and Trent XWB.

² Included within Business Aviation are the Pearl 700 and Pearl 15.

³ Includes £109m in respect of a brand intangible asset which is not amortised. Remaining assets are amortised over a range of 2–10 years.

The carrying amount of goodwill or intangible assets allocated across multiple cash-generating units is not significant in comparison with the Group's total carrying amount of goodwill or intangible assets with indefinite useful lives.

10 Property, plant and equipment

	Land and buildings £m	Plant and equipment £m	Aircraft and engines £m	In course of construction £m	Total £m
Cost					
At 1 January 2018	1,842	5,022	734	773	8,371
Additions	54	273	251	396	974
Transferred to assets held for sale ¹	(91)	(138)	–	(30)	(259)
Disposal of L'Orange ²	(23)	(72)	–	(4)	(99)
Disposals/write-offs	(29)	(140)	(19)	–	(188)
Reclassifications	140	287	(3)	(424)	–
Exchange differences	23	64	4	11	102
At 31 December 2018	1,916	5,296	967	722	8,901
Impact of adopting IFRS 16 (note 29)	(12)	(11)	(205)	(29)	(257)
At 1 January 2019	1,904	5,285	762	693	8,644
Additions	27	286	126	328	767
Acquisition of businesses	–	3	–	–	3
Transferred to assets held for sale ¹	(5)	(9)	–	(2)	(16)
Disposal of businesses	(4)	(168)	–	–	(172)
Disposals/write-offs	(54)	(187)	(17)	(4)	(262)
Reclassifications ³	186	390	11	(605)	(18)
Reclassification of joint venture to joint operations	5	3	–	–	8
Exchange differences	(39)	(106)	(6)	(9)	(160)
At 31 December 2019	2,020	5,497	876	401	8,794
Accumulated depreciation					
At 1 January 2018	554	2,984	173	2	3,713
Charge for the year ⁴	67	376	80	–	523
Impairment	–	2	–	5	7
Transferred to assets held for sale ¹	(26)	(96)	–	–	(122)
Disposal of L'Orange ²	(4)	(34)	–	–	(38)
Disposals/write-offs	(19)	(123)	(9)	–	(151)
Exchange differences	7	33	–	–	40
At 31 December 2018	579	3,142	244	7	3,972
Impact of adopting of IFRS 16 (note 29)	(7)	(13)	(40)	–	(60)
At 1 January 2019	572	3,129	204	7	3,912
Charge for the year ⁴	67	381	43	–	491
Impairment	1	29	–	11	41
Transferred to assets held for sale ¹	(5)	(9)	–	(1)	(15)
Disposal of businesses	–	(165)	–	–	(165)
Disposals/write-offs	(45)	(150)	(5)	(1)	(201)
Reclassifications ³	9	6	(19)	(5)	(9)
Reclassification of joint venture to joint operations	1	3	–	–	4
Exchange differences	(10)	(57)	–	–	(67)
At 31 December 2019	590	3,167	223	11	3,991
Net book value					
At 31 December 2019	1,430	2,330	653	390	4,803
At 1 January 2019	1,332	2,156	558	686	4,732
At 31 December 2018	1,337	2,154	723	715	4,929

¹ The North America Civil Nuclear business was classified as a disposal group held for sale on 26 September 2019. The Commercial Marine business was classified as a disposal group held for sale on 30 June 2018 – see note 27.

² The disposal of the L'Orange business to Woodward Inc. was completed on 1 June 2018 – see note 27.

³ Includes reclassifications for assets under construction and to intangible assets.

⁴ Depreciation charged during the year is presented in the income statement or included in the cost of inventory as appropriate.

10 Property, plant and equipment continued

Property, plant and equipment includes:

	2019 £m	2018 £m
Assets held for use in operating leases		
Cost	720	813
Depreciation	(214)	(192)
Net book value	506	621
Capital expenditure commitments	317	362
Cost of fully depreciated assets	1,666	1,498
Cost of fully depreciated assets included in assets held for sale	2	75

The Group's share of equity accounted entities' capital commitments is £30m (2018: £9m).

11 Right-of-use assets

	Land and buildings £m	Plant and equipment £m	Aircraft and engines £m	Total £m
Cost				
At 31 December 2018	–	–	–	–
Impact of adopting IFRS 16 (see note 29)	493	107	1,654	2,254
Transferred to assets held for sale ¹	(40)	(1)	–	(41)
At 1 January 2019	453	106	1,654	2,213
Additions/modifications of leases	70	28	129	227
Transferred to assets held for sale ¹	(4)	–	–	(4)
Disposals	(2)	(4)	(13)	(19)
Exchange differences	(13)	(2)	(3)	(18)
At 31 December 2019	504	128	1,767	2,399
Accumulated depreciation and impairment				
At 1 January 2019	–	–	–	–
Charge for the year	58	32	309	399
Impairment	1	1	10	12
Transferred to assets held for sale ¹	(1)	–	–	(1)
Disposals	(2)	(4)	(13)	(19)
Exchange differences	(1)	–	–	(1)
At 31 December 2019	55	29	306	390
Net book value				
At 31 December 2019	449	99	1,461	2,009
At 1 January 2019	453	106	1,654	2,213
At 31 December 2018	–	–	–	–
Right-of-use assets held for use in operating leases				
Cost	4	2	1,767	1,773
Depreciation	(2)	(1)	(306)	(309)
Net book value at 31 December 2019	2	1	1,461	1,464

¹ The North America Civil Nuclear business was classified as a disposal group held for sale on 26 September 2019. The Commercial Marine business was classified as a disposal group held for sale on 30 June 2018 – see note 27.

12 Investments

Composition of the Group

The entities contributing to the Group's financial results are listed on pages 187 to 193.

Where the Group does not own 100% of the shares of a Group undertaking, there are a number of arrangements with the other shareholder(s) that give the Group the option or potential obligation to acquire the third parties' shares. These arrangements have been assessed and are not considered to have a significant value, individually or in aggregate.

Non-controlling interests

The Group does not have any material non-wholly owned subsidiaries.

Equity accounted and other investments

	Equity accounted			Other
	Joint ventures £m	Associates £m	Total £m	Unlisted £m
At 1 January 2018	375	–	375	26
Additions	17	–	17	6
Disposals	–	–	–	(3)
Impairment	(7)	–	(7)	(2)
Consolidation of previously non-consolidated subsidiary	–	–	–	(5)
Share of retained loss ¹	(101)	–	(101)	–
Reclassification of deferred profit to deferred income ²	70	–	70	–
Exchange differences	41	–	41	–
Share of OCI	17	–	17	–
At 1 January 2019	412	–	412	22
Additions	8	–	8	2
Disposals	(4)	–	(4)	(6)
Transfer from joint venture to joint operation	(3)	–	(3)	–
Impairment	–	–	–	(1)
Consolidation of previously non-consolidated subsidiary	–	–	–	(4)
Share of retained profit ¹	12	–	12	–
Reclassification of deferred profit to deferred income ²	4	–	4	–
Exchange differences	(19)	–	(19)	1
Share of OCI	(8)	–	(8)	–
At 31 December 2019	402	–	402	14

¹ See table below.

² The Group's share of unrealised profit on sales to joint ventures is eliminated against the carrying value of the investment in the entity. Any excess amount, once the carrying value is reduced to nil, is recorded as deferred income.

Reconciliation of share of retained profit/(loss) to the income statement and cash flow statement:

	2019 £m	2018 £m
Share of results of joint ventures and associates	141	114
Adjustments for intercompany trading	(37)	(110)
Share of results of joint ventures and associates to the Group (income statement)	104	4
Dividends paid by joint ventures and associates to the Group (cash flow statement)	(92)	(105)
Share of retained profit/(loss) above ¹	12	(101)

¹ During the year, we sold spare engines to Rolls-Royce & Partners Finance, a joint venture company.

The following joint ventures are considered to be individually material to the Group:

	Principal location	Activity	Ownership interest
Alpha Partners Leasing Limited (APL)	UK	Aero engine leasing	50.0%
Hong Kong Aero Engine Services Limited (HAESL)	Hong Kong	Aero engine repair and overhaul	50.0%
Singapore Aero Engine Services Pte Limited (SAESL)	Singapore	Aero engine repair and overhaul	50.0%

12 Investments continued

Summarised financial information of the Group's individually material joint ventures is as follows:

	APL		HAESL		SAESL	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
Revenue	322	254	1,907	1,497	1,529	1,141
Profit and total comprehensive income for the year	107	61	81	72	47	41
Dividends paid during the year	(29)	(47)	(76)	(65)	(42)	(43)
Profit for the year included the following:						
Depreciation and amortisation	(146)	(110)	(15)	(13)	(16)	(12)
Interest income	4	1	–	–	–	–
Interest expense	(89)	(58)	(3)	(2)	(6)	(3)
Income tax expense	(22)	(14)	(16)	(14)	(3)	(4)
Current assets	119	355	453	421	433	379
Non-current assets	3,319	2,759	113	124	172	161
Current liabilities	(230)	(755)	(269)	(248)	(264)	(207)
Non-current liabilities	(2,617)	(1,825)	(103)	(101)	(163)	(164)
Net assets	591	534	194	196	178	169
Included in the above:						
Cash and cash equivalents	25	103	4	46	14	17
Current financial liabilities ¹	(182)	(702)	–	–	–	–
Non-current financial liabilities ¹	(2,364)	(1,603)	(89)	(88)	(163)	(164)
Reconciliation to the carrying amount recognised in the Consolidated Financial Statements						
Ownership interest	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Group share of net assets above	296	267	97	98	89	85
Goodwill	–	–	35	36	94	97
Adjustments for intercompany trading	(296)	(267)	(7)	(3)	(1)	–
Included in the balance sheet	–	–	125	131	182	182

¹ Excluding trade payables and other liabilities.

The summarised aggregated results of the Group's share of equity accounted investments is as follows:

	Individually material joint ventures (above)		Other joint ventures		Associates		Total	
	2019 £m	2018* £m	2019 £m	2018* £m	2019 £m	2018 £m	2019 £m	2018* £m
Assets:								
Non-current assets	1,802	1,522	745	911	–	–	2,547	2,433
Current assets	503	578	456	467	–	–	959	1,045
Liabilities: ¹								
Current liabilities	(382)	(605)	(322)	(262)	–	–	(704)	(867)
Non-current liabilities	(1,441)	(1,045)	(703)	(802)	–	–	(2,144)	(1,847)
Group adjustment for goodwill	129	133	–	–	–	–	129	133
Adjustment for intercompany trading	(304)	(270)	(81)	(215)	–	–	(385)	(485)
	307	313	95	99	–	–	402	412
¹ Liabilities include borrowings of	(1,399)	(1,278)	(627)	(650)	–	–	(2,026)	(1,928)

* The summarised results for 2018 have been re-presented to include the Group's share of all its individually material joint ventures on a gross basis. Previously, the assets and liabilities of certain joint ventures were shown on a net basis. Disclosure of Group adjustments for intercompany trading and goodwill upon consolidation have been disclosed separately to provide greater transparency. The carrying amounts at 31 December 2018 remain the same as previously reported. This enhanced presentation does not impact the Group consolidated results or financial position previously reported.

13 Inventories

	2019 £m	2018 £m
Raw materials	522	553
Work in progress	1,652	1,551
Finished goods	2,119	2,168
Payments on account	27	15
	4,320	4,287
Inventories stated at net realisable value	227	223
Amount of inventory write-down	69	69
Reversal of inventory write-down	12	21

14 Trade receivables and other assets

	Current		Non-current		Total	
	2019 £m	2018* £m	2019 £m	2018* £m	2019 £m	2018* £m
Trade receivables ¹	2,538	2,680	–	–	2,538	2,680
Amounts owed by joint ventures and associates ¹	197	229	12	–	209	229
Costs to obtain contracts with customers ²	10	8	33	34	43	42
Other receivables ³	1,490	1,218	181	145	1,671	1,363
Prepayments	356	367	248	9	604	376
	4,591	4,502	474	188	5,065	4,690

Trade receivables and other assets are analysed as follows:

Financial instruments (note 19):

Trade receivables and similar items	3,477	3,578
Other non-derivative financial assets	726	489
Non-financial instruments	862	623
	5,065	4,690

* Balances at 31 December 2018 have been re-presented to move £217m from prepayments to other receivables to better reflect the nature of these balances.

¹ Includes £267m (2018: £146m) of trade receivables held to collect or sell and £76m (2018: nil) receivables from joint ventures and associates held to collect or sell.

² These are amortised over the term of the related contract, resulting in amortisation of £8m (2018: £13m) in the year. There were no impairment losses recognised in either year.

³ Other receivables includes the RRSA component of the LTSA which is held separately on the basis of differing counterparties, together with receivables arising from overhaul activity outside of LTSA coverage.

The expected credit losses for trade receivables and other assets has increased by £12m to £138m (2018: £126m). Amounts included are considered as current so no ageing of expected credit losses is disclosed.

For many years the Group has undertaken the sale of trade receivables, without recourse, to banks. This is commonly known as invoice discounting or factoring, and is common place in the aerospace industry. The absolute amount carried out in any given year depends on specific engine delivery volumes and phasing. This activity has been used to normalise customer receipts as certain aerospace customers have extended their payment terms. This in turn has helped to normalise our Group cash flows in line with physical delivery volumes. Over the last three years the sale of trade receivables has averaged £1,037m at the year end. Trade receivables factored are generally due within the following quarter.

At 31 December 2019 £1,117m was drawn under factoring facilities, an increase of £95m compared to December 2018, representing cash collected before it was contractually due from the customer.

In exceptional circumstances, the sale of trade receivables has taken place where amounts contractually due from aerospace customers before the period end have been deferred into the following period. There was £504m relating to this activity at the 2018 year end. There were no equivalent amounts in 2019.

The assumption and inputs used for the estimation of the expected credit losses are disclosed in the table below:

	2019			2018		
	Trade receivables and other financial assets £m	Loss allowance £m	Range of expected credit loss rate %	Trade receivables and other financial assets £m	Loss allowance £m	Range of expected credit loss rate %
Investment grade	1,230	(40)	0%–2.45%	976	(34)	0%–2.06%
Non-investment grade	271	(2)	0%–2.51%	348	(5)	0%–2.06%
Without credit rating	2,636	(96)	0%–54%	2,653	(87)	0%–47%
	4,137	(138)	3%	3,977	(126)	3%

14 Trade receivables and other assets continued

The movements of the Group expected credit losses provision are as follows:

	2019 £m	2018 £m
At 1 January	(126)	(95)
Increases in loss allowance recognised in the income statement during the year	(27)	(15)
Other net movements	14	(16)
At 31 December	(139)	(126)

15 Contract assets and liabilities

	Current		Non-current		Total	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
Contract assets						
Contract assets with operators	404	295	1,092	1,108	1,496	1,403
Participation fee contract assets	57	49	542	605	599	654
	461	344	1,634	1,713	2,095	2,057
Contract assets are analysed as follows:						
Financial instruments (note 19)					–	–
Non-financial instruments					2,095	2,057
					2,095	2,057

Contract assets include £1,086m (2018: £1,097m) of Civil Aerospace LTSA assets, with most of the remainder relating to Defence. The main driver of the increase is driven by Defence which increased by £90m due to the timing differences between revenue being recognised on a stage of completion basis and when customers are billed, as well as the timing of the flow down of amounts received in prior years from programme partners. Revenue from performance obligations satisfied in previous years has been adjusted by £(166)m.

Participation fee contract assets have reduced by £(55)m due to amortisation exceeding additions by £(35)m and FX on consolidation of overseas entities of £(20)m. No impairment losses (2018: none) of contract assets have arisen during the year.

The expected credit losses for contract assets has decreased by £9m in relation to normal business cycle to £13m (2018: £22m).

	Current		Non-current		Total	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
Contract liabilities	4,228	3,794	6,612	5,336	10,840	9,130
Contract liabilities are analysed as follows:						
Financial instruments (note 19)					131	–
Non-financial instruments					10,709	9,130
					10,840	9,130

During the year, £3,491m (2018: £2,823m) of the opening contract liability was recognised as revenue and contract liabilities have increased by £1,710m. The main reasons for the increase being a £1,199m growth in Civil Aerospace LTSA liabilities to £6,783m (2018: £5,584m) driven by an overall growth in engine flying hour receipts. Our installed base increased by 6% in 2019 compared with 2018. In addition, engine flying hours increased by 7% year-on-year. Revenue from performance obligations satisfied in previous years has been adjusted by £(114)m.

16 Cash and cash equivalents

	2019 £m	2018 £m
Cash at bank and in hand	825	1,023
Money-market funds	1,095	1,222
Short-term deposits	2,523	2,729
Cash and cash equivalents per the balance sheet	4,443	4,974
Overdrafts (note 17)	(8)	(22)
Cash and cash equivalents per cash flow statement (page 119)	4,435	4,952
Cash held as collateral against third party obligations (note 20)	–	4

Cash and cash equivalents at 31 December 2019 includes £34m (2018: £31m) that is not available for general use by the Group. This balance predominantly relates to cash held in non-wholly owned subsidiaries and joint arrangements.

Balances are presented on a net basis when the Group has both a legal right of offset and the intention to either settle on a net basis or realise the asset and settle the liability simultaneously.

17 Borrowings and lease liabilities

	Current		Non-current		Total	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
Unsecured						
Overdrafts	8	22	–	–	8	22
Bank loans	27	298	16	354	43	652
6.75% Notes 2019 £500m ¹	–	504	–	–	–	504
2.375% Notes 2020 US\$500m ²	378	–	–	383	378	383
2.125% Notes 2021 €750m ²	–	–	655	699	655	699
0.875% Notes 2024 €550m ³	–	–	481	498	481	498
3.625% Notes 2025 US\$1,000m ³	–	–	781	765	781	765
3.375% Notes 2026 £375m ⁴	–	–	410	403	410	403
1.625% Notes 2028 €550m ³	–	–	501	502	501	502
Other loans ⁵	22	–	52	5	74	5
Total unsecured	435	824	2,896	3,609	3,331	4,433
Secured ⁶						
Lease liabilities – property	50	–	473	–	523	–
Lease liabilities – aero engines	261	–	1,463	–	1,724	–
Lease liabilities – equipment	29	–	78	–	107	–
Obligations under finance leases	–	34	–	195	–	229
Total secured	340	34	2,014	195	2,354	229
Total borrowings and lease liabilities	775	858	4,910	3,804	5,685	4,662

¹ These notes are the subject of interest rate swap agreements under which the Group has undertaken to pay floating rates of interest, which form a fair value hedge.

² These notes are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay floating rates of GBP interest, which form a fair value hedge.

³ These notes are the subject of cross-currency interest rate swap agreements under which the Group has undertaken to pay floating rates of GBP interest, which form a fair value hedge. They are also subject to interest rate swap agreements under which the Group has undertaken to pay fixed rates of interest, which are classified as fair value through profit and loss.

⁴ These notes are the subject of interest rate swap agreements under which the Group has undertaken to pay floating rates of interest, which form a fair value hedge. They are also subject to interest rate swap agreements under which the Group has undertaken to pay fixed rates of interest, which are classified as fair value through profit and loss.

⁵ In 2019, the Group reclassified £79m as borrowings previously included in other financial liabilities. Other loans of £8m (2018: £5m) are held by entities classified as joint operations. The loans are disclosed after adjustments have been made on consolidation to eliminate the extent of the Group's interest in the entity.

⁶ Obligations under leases are secured by related leased assets.

18 Trade payables and other liabilities

	Current		Non-current		Total	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
Trade payables	2,300	2,520	–	–	2,300	2,520
Amounts owed to joint ventures and associates	798	635	36	18	834	653
Accruals	1,751	1,673	89	109	1,840	1,782
Deferred receipts from RRSA workshare partners	17	9	516	520	533	529
Government grants ¹	12	14	71	85	83	99
Other taxation and social security	128	125	–	–	128	125
Other payables ²	3,444	3,316	1,359	1,208	4,803	4,524
	8,450	8,292	2,071	1,940	10,521	10,232
Trade payables and other liabilities are analysed as follows:						
Financial instruments (note 19):						
Trade payables and similar items					5,849	5,659
Other non-derivative financial liabilities					1,541	1,754
Non-financial instruments						
					3,131	2,819
					10,521	10,232

¹ During the year £12m (2018: £8m) of government grants were released to the income statement.

² Other payables include £280m (2018: £378m) for financial penalties from agreements with investigating bodies and £nil (2018: £245m) for deferred consideration in relation to the acquisition of ITP Aero. In addition, other payables includes amounts due to RRSA concessions, warranty credits and other sundry payables.

Our payment terms with suppliers vary on the products and services being sourced, the competitive global markets we operate in and other commercial aspects of suppliers' relationships. Industry average payment terms vary between 90–120 days. We offer reduced payment terms for smaller suppliers, so that they are paid in 30 days. In line with aerospace industry practice, we offer a SCF programme in partnership with banks to enable suppliers who are on our standard 75-day payment terms to receive their payment sooner. The SCF programme is available to suppliers at their discretion and does not change our rights and obligations with suppliers nor the timing of our payment to suppliers. At 31 December 2019, suppliers had drawn £859m under the SCF scheme (31 December 2018: £817m).

19 Financial instruments

Carrying values and fair values of financial instruments

	Notes	Basis for determining fair value	Assets			Liabilities		Total
			Fair value through profit or loss £m	Fair value through OCI £m	Amortised cost £m	Fair value through profit or loss £m	Other £m	£m
2019								
Unlisted non-current asset investments	12	A	14	–	–	–	–	14
Trade receivables and similar items	14	B/C	–	344	3,133	–	–	3,477
Other non-derivative financial assets	14	B	–	–	726	–	–	726
Other assets		D	28	–	–	–	–	28
Derivative financial assets ¹		C	525	–	–	–	–	525
Short-term investments		B	–	–	6	–	–	6
Cash and cash equivalents	16	B	1,095	–	3,348	–	–	4,443
Borrowings	17	E/F	–	–	–	–	(3,331)	(3,331)
Lease liabilities	17	G	–	–	–	–	(2,354)	(2,354)
Derivative financial liabilities ¹		C	–	–	–	(3,374)	–	(3,374)
Financial RRSAs		H	–	–	–	–	(110)	(110)
Other liabilities		H	–	–	–	–	(72)	(72)
C Shares		B	–	–	–	–	(31)	(31)
Trade payables and similar items	18	B	–	–	–	–	(5,849)	(5,849)
Other non-derivative financial liabilities	18	B	–	–	–	–	(1,541)	(1,541)
Contract liabilities	15	B	–	–	–	–	(131)	(131)
			1,662	344	7,213	(3,374)	(13,419)	(7,574)
2018 *								
Unlisted non-current asset investments	12	A	22	–	–	–	–	22
Trade receivables and similar items	14	B/C	–	146	3,432	–	–	3,578
Other non-derivative financial assets	14	B	–	–	489	–	–	489
Derivative financial assets ¹		C	365	–	–	–	–	365
Short-term investments		B	–	–	6	–	–	6
Cash and cash equivalents	16	B	1,222	–	3,752	–	–	4,974
Borrowings	17	E/F	–	–	–	–	(4,662)	(4,662)
Derivative financial liabilities ¹		C	–	–	–	(3,871)	–	(3,871)
Financial RRSAs		H	–	–	–	–	(227)	(227)
Other liabilities		H	–	–	–	–	(62)	(62)
C Shares		B	–	–	–	–	(29)	(29)
Trade payables and similar items	18	B	–	–	–	–	(5,659)	(5,659)
Other non-derivative financial liabilities	18	B	–	–	–	–	(1,754)	(1,754)
			1,609	146	7,679	(3,871)	(12,393)	(6,830)

* Disclosures relating to 31 December 2018 have been re-presented in this table and the other related tables in this note to reflect the changes explained in note 14.

¹ In the event of counterparty default relating to derivative financial assets and liabilities, offsetting would apply and financial assets and liabilities held with the same counterparty would net off. If this occurred with every counterparty, total financial assets would be £13m (2018: £11m) and liabilities £2,862m (2018: £3,517m).

Fair values equate to book values for both 2019 and 2018, with the following exceptions:

	Basis for determining fair value	2019		2018	
		Book value £m	Fair value £m	Book value £m	Fair value £m
Borrowings	E	(3,206)	(3,147)	(3,754)	(3,634)
Borrowings	F	(125)	(130)	(908)	(887)
Financial RRSAs	H	(110)	(112)	(227)	(235)

The fair value of a financial instrument is the price at which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arms-length transaction. Fair values have been determined with reference to available market information at the balance sheet date, using the methodologies described on page 158.

19 Financial instruments continued

- A These primarily comprise unconsolidated companies where fair value approximates to the book value.
 B Fair values are assumed to approximate to cost either due to the short-term maturity of the instruments or because the interest rate of the investments is reset after periods not exceeding six months.
 C Fair values of derivative financial assets and liabilities and trade receivables held to collect or sell are estimated by discounting expected future contractual cash flows using prevailing interest rate curves. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the balance sheet date. These financial instruments are included on the balance sheet at fair value, derived from observable market prices (Level 2 as defined by IFRS 13 *Fair Value Measurement*).
 D Other assets are included on the balance sheet at fair value, derived from observable market prices or latest forecast (Level 2/Level 3 as defined by IFRS 13).
 E Borrowings are carried at amortised cost. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the balance sheet date. The fair value of borrowings is estimated using quoted prices. (Level 1 as defined by IFRS 13).
 F Borrowings are carried at amortised cost. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the balance sheet date. The fair value of borrowings is estimated by discounting contractual future cash flows. (Level 2 as defined by IFRS 13).
 G The fair value of lease liabilities are estimated by discounting future contractual cash flows using either the interest rate implicit in the lease or the Group's incremental cost of borrowing (Level 2 as defined by IFRS 13).
 H The fair value of RRSAs and other liabilities are estimated by discounting expected future cash flows. The contractual cash flows are based on future trading activity, which is estimated based on latest forecasts (Level 3 as defined by IFRS 13).

IFRS 13 defines a three level valuation hierarchy:

Level 1 – quoted prices for similar instruments

Level 2 – directly observable market inputs other than Level 1 inputs

Level 3 – inputs not based on observable market data

Carrying values of other financial assets and liabilities

	Foreign exchange contracts £m	Commodity contracts £m	Interest rate contracts ¹ £m	Total derivatives £m	Financial RRSAs £m	Other £m	C Shares £m	Total £m
2019								
Non-current assets	234	14	203	451	–	16	–	467
Current assets	16	9	49	74	–	12	–	86
Assets	250	23	252	525	–	28	–	553
Current liabilities	(394)	(5)	–	(399)	(31)	(32)	(31)	(493)
Non-current liabilities	(2,960)	(6)	(9)	(2,975)	(79)	(40)	–	(3,094)
Liabilities	(3,354)	(11)	(9)	(3,374)	(110)	(72)	(31)	(3,587)
	(3,104)	12	243	(2,849)	(110)	(44)	(31)	(3,034)
2018								
Non-current assets	47	4	292	343	–	–	–	343
Current assets	16	2	4	22	–	–	–	22
Assets	63	6	296	365	–	–	–	365
Current liabilities	(523)	(15)	–	(538)	(52)	(28)	(29)	(647)
Non-current liabilities	(3,304)	(25)	(4)	(3,333)	(175)	(34)	–	(3,542)
Liabilities	(3,827)	(40)	(4)	(3,871)	(227)	(62)	(29)	(4,189)
	(3,764)	(34)	292	(3,506)	(227)	(62)	(29)	(3,824)

¹ Includes the foreign exchange impact of cross-currency interest rate swaps.

Derivative financial instruments

The Group uses various financial instruments to manage its exposure to movements in foreign exchange rates. Where the effectiveness of a hedging relationship in a cash flow hedge is demonstrated, changes in the fair value that are deemed effective are included in the cash flow hedge reserve and released to match actual payments on the hedged item. The Group uses commodity swaps to manage its exposure to movements in the price of commodities (jet fuel and base metals). To hedge the currency risk associated with a borrowing denominated in a foreign currency, the Group has currency derivatives designated as part of fair value hedges. The Group uses interest rate swaps and forward rate agreements to manage its exposure to movements in interest rates.

Movements in the fair values of derivative financial assets and liabilities were as follows:

	Foreign exchange instruments		Commodity instruments		Interest rate instruments – hedge accounted		Interest rate instruments – non-hedge accounted		Total	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018* £m	2019 £m	2018 £m	2019 £m	2018 £m
At 1 January	(3,764)	(2,312)	(34)	1	292	227	–	–	(3,506)	(2,084)
Movements in fair value hedges	–	–	–	–	(27)	101	–	–	(27)	101
Movements in cash flow hedges	(4)	(14)	13	(9)	–	(1)	–	–	9	(24)
Movements in other derivative contracts ¹	(43)	(2,122)	36	(22)	–	–	14	–	7	(2,144)
Contracts settled	707	684	(3)	(4)	(36)	(35)	–	–	668	645
At 31 December	(3,104)	(3,764)	12	(34)	229	292	14	–	(2,849)	(3,506)

* Prior year balances have been re-presented in order to give a more accurate reflection of the cash flows associated with interest rate instruments.

¹ Included in financing.

19 Financial instruments continued**Financial risk and revenue sharing arrangements (RRSAs) and other financial liabilities**

The Group has financial liabilities arising from financial RRSAs. These financial liabilities are valued at each reporting date using the amortised cost method. This involves calculating the present value of the forecast cash flows of the arrangements using the internal rate of return at the inception of the arrangements as the discount rate.

Movements in the carrying values were as follows:

	Financial RRSAs		Other liabilities		Other assets	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
At 1 January as previously reported	(227)	(247)	(62)	(57)	–	–
Reclassification to borrowings ¹	79	–	–	–	–	–
At 1 January restated	(148)	(247)	(62)	(57)	–	–
Exchange adjustments included in OCI	10	(3)	1	(1)	–	–
Additions	(4)	(3)	(37)	(25)	–	–
Financing charge ²	(3)	(8)	(3)	(1)	–	–
Excluded from underlying profit:						
Changes in forecast payments ²	1	(2)	–	–	–	–
Exchange adjustments ²	6	–	–	–	–	–
Cash paid	28	36	29	22	–	–
Reclassification from trade receivables	–	–	–	–	16	–
At 31 December	(110)	(227)	(72)	(62)	16	–

¹ In 2019, the Group reclassified £79m as borrowings previously included in other financial liabilities.

² Included in financing.

Effect of hedging instruments on the financial position and performance

To manage the risk of changes in the fair values of fixed rate borrowings (the hedged items) the Group has entered into fixed-to-floating interest rate swaps and cross-currency interest rate swaps (the hedging instruments) which for accounting purposes are designated as fair value hedges. Although the hedging instruments have similar critical terms to the hedged item, some ineffectiveness, predominantly due to cross currency basis, will still remain. The impact of any hedge ineffectiveness on the financial position and performance of the Group is as follows:

	Hedged item ¹				Hedging instrument ²						Weighted average interest rate
	Nominal £m	FV adjustment in the period £m	FV adjustment since inception £m	Carrying amount £m	Nominal £m	Carrying amount asset £m	Carrying amount liability £m	FV movement in the period £m	Hedge ineffect- iveness in the period ³ £m	Weighted average FX rate	
At 31 December 2019											
Sterling	(375)	(3)	(36)	(410)	375	36	–	3	–	1.00	GBP LIBOR + 0.893
US Dollar	(987)	(10)	(175)	(1,159)	987	172	–	2	(8)	1.52	GBP LIBOR + 1.2575
Euro	(1,607)	63	(34)	(1,637)	1,607	27	(6)	(69)	(6)	1.15	GBP LIBOR + 0.8301
At 31 December 2018											
Sterling	(875)	25	(34)	(907)	875	34	–	(25)	–	1.00	GBP LIBOR + 2.0867
US Dollar	(987)	(61)	(165)	(1,148)	987	169	–	65	4	1.52	GBP LIBOR + 1.2575
Euro	(1,607)	(33)	(97)	(1,699)	1,607	90	–	26	(7)	1.15	GBP LIBOR + 0.8301

¹ Hedged items are included in borrowings in the balance sheet.

² Hedging instruments are included in other financial assets or liabilities in the balance sheet.

³ Hedge ineffectiveness is included in net financing in the income statement.

The Group has elected to early adopt the amendments to IFRS 9, IAS 39 and IFRS 7 *Interest Rate Benchmark Reform* issued in September 2019. In calculating the change in fair value attributable to the hedged risk for the fixed-rate borrowings, the Group has made the following assumptions that reflect its current expectations:

- the Group has assumed that pre-existing fallback provisions in the borrowings do not apply to IBOR reform;
- borrowings move to a risk-free rate during 2022, and the spread will be similar to the spread included in the interest rate swaps used as hedging instruments; and
- no other changes to the terms of the hedged borrowings are anticipated.

19 Financial instruments *continued*

Risk management policies and hedging activities

The principal financial risks to which the Group is exposed are: foreign currency exchange rate risk; liquidity risk; credit risk; interest rate risk; and commodity price risk. The Board has approved policies for the management of these risks.

Foreign currency exchange rate risk – The Group has significant cash flows (most significantly US dollars, followed by the euro) denominated in currencies other than the functional currency of the relevant trading entity. To manage its exposures to changes in values of future foreign currency cash flows, so as to maintain relatively stable long-term foreign exchange rates on settled transactions, the Group enters into derivative forward foreign currency transactions.

The Group economically hedges its GBP/USD exposure by forecasting highly probable net USD receipts up to ten years forward. Hedges are taken out within prescribed maximum and minimum hedge positions set out in the Group FX policy. The maximum and minimum policy bands decline gradually over the ten-year horizon and are calculated as a percentage of forecast net income. A similar policy is operated for the Group's EUR/USD exposure. For accounting purposes, these derivative contracts are not designated in hedging relationships with the exception of those taken out by the Group's Spanish subsidiary, ITP Aero, where they are designated in cash flow hedges. ITP Aero is exposed predominantly to net USD receipts that it hedges against EUR using foreign exchange forward contracts.

The Group regards its interests in overseas subsidiary companies as long-term investments. The Group aims to match its translational exposures by matching the currencies of assets and liabilities.

Liquidity risk – The Group's policy is to hold financial investments and maintain undrawn committed facilities at a level sufficient to ensure that the Group has available funds to meet its medium-term capital and funding obligations and to meet any unforeseen obligations and opportunities. The Group holds cash and short-term investments, which together with the undrawn committed facilities, enable the Group to manage its liquidity risk.

Credit risk – The Group is exposed to credit risk to the extent of non-payment by either its customers or the counterparties of its financial instruments. The effective monitoring and controlling of credit risk is a key component of the Group's risk management activities. The Group has credit policies covering both trading and financial exposures. Credit risks arising from treasury activities are managed by a central treasury function in accordance with the Group credit policy. The objective of the policy is to diversify and minimise the Group's exposure to credit risk from its treasury activities by ensuring the Group transacts strictly with 'BBB' or higher rated financial institutions based on pre-established limits per financial institution. At the balance sheet date, there were no significant concentrations of credit risk to individual customers or counterparties. The Group's revenue is generated from customers located across multiple geographical locations (see note 2), these customers are typically: airframers and airline operators relating to Civil Aerospace; government defence departments for the UK and US; multiple smaller entities for Power Systems; and aero engine manufacturers for ITP Aero. Whilst there are a limited number of customers related to Civil Aerospace and Defence, they are spread across various geographical locations. The maximum exposure to credit risk at the balance sheet date is represented by the carrying value of each financial asset, including derivative financial instruments.

Interest rate risk – The Group's interest rate risk is primarily in relation to its fixed rate borrowings (fair value risk), floating rate borrowings and cash and cash equivalents (cash flow risk). Interest rate derivatives are used to manage the overall interest rate profile of the Group. The fixed or floating rate interest rate decision on long-term borrowings is determined for each new agreement at the point it is entered into. The aggregate interest rate position of the Group is reviewed regularly and can be revised at any time in order to react to changes in market conditions or circumstances.

The Group also has exposures to the fair values of non-derivative financial instruments such as USD, EUR and GBP and fixed rate borrowings. To manage the risk of changes in these fair values, the Group has entered into fixed-to-floating interest rate swaps and cross-currency interest rate swaps which for accounting purposes are designated as fair value hedges. The swaps have similar critical terms to the hedged items, such as the reference rate, reset dates, notional amounts, payment dates and maturities. Therefore there is an economic relationship and the hedge ratio is established as 1:1. Possible sources of ineffectiveness in the fair value hedge relationship are changes in the credit risk of either party to the interest rate swap and, for cross-currency interest rate swaps, the cross-currency basis risk as this risk is present in the hedging instrument only. Another possible source of ineffectiveness would be if the notional of the borrowings is less than the notional of the derivative, for example in the event of a partial repayment of hedged debt prior to its maturity.

The Group has exposure to changes in cash flows due to changes in interest rates. To manage this risk the Group has entered into floating-to-fixed interest rate swaps to hedge a proportion of its floating rate exposure to fixed rates. The swaps have similar critical terms to the floating leg of swaps that form part of the fair value hedges, such as the reference rate, reset dates, notional amounts, payment dates and maturities. For accounting purposes, these derivative contracts are generally not designated as hedging instruments.

The Group's Spanish subsidiary, ITP Aero, has also entered into a floating-to-fixed interest rate swap to hedge the cash flow risk on a floating rate borrowing which for accounting purposes is designated as a cash flow hedge.

Commodity risk – The Group has exposures to the price of jet fuel and base metals arising from business operations. To minimise its cash flow exposures to changes in commodity prices, the Group enters into derivative commodity transactions. The commodity hedging policy is similar to the Group FX policy, in that the Group forecasts highly probable exposures to commodities, and takes out hedges within prescribed maximum and minimum levels as set out in the policy. The maximum and minimum policy bands decline gradually over time. For accounting purposes, these derivative contracts are generally not designated in hedging relationships.

Other price risk – The Group's cash equivalent balances represent investments in money-market instruments, with a term of up to three months. The Group does not consider that these are subject to significant price risk.

19 Financial instruments continued**Derivative financial instruments**

The nominal amounts, analysed by year of expected maturity, and fair values of derivative financial instruments are as follows:

	Expected maturity					Fair value	
	Nominal amount £m	Within one year £m	Between one and two years £m	Between two and five years £m	After five years £m	Assets £m	Liabilities £m
At 31 December 2019							
Foreign exchange contracts:							
Cash flow hedges	646	266	206	174	–	13	(17)
Non-hedge accounted	29,878	5,151	4,704	13,300	6,723	237	(3,337)
Interest rate contracts:							
Fair value hedges	2,969	329	639	484	1,517	235	(6)
Cash flow hedges	15	4	4	7	–	–	–
Non-hedge accounted	2,001	–	–	484	1,517	17	(3)
Commodity contracts:							
Cash flow hedges	54	11	9	21	13	8	(1)
Non-hedge accounted	342	125	101	116	–	15	(10)
	35,905	5,886	5,663	14,586	9,770	525	(3,374)

At 31 December 2018

Foreign exchange contracts:							
Cash flow hedges	335	162	120	53	–	4	(11)
Non-hedge accounted	29,080	5,528	5,113	14,808	3,631	59	(3,816)
Interest rate contracts:							
Fair value hedges	3,469	500	329	639	2,001	293	–
Cash flow hedges	19	4	4	11	–	–	(1)
Non-hedge accounted	–	–	–	–	–	3	(3)
Commodity contracts:							
Cash flow hedges	6	2	1	1	2	1	(8)
Non-hedge accounted	250	92	79	77	2	5	(32)
	33,159	6,288	5,646	15,589	5,636	365	(3,871)

As described above, all derivative financial instruments are entered into for risk management purposes, although these may not be designated into hedging relationships for accounting purposes.

Currency analysis

Foreign exchange contracts are denominated in the following currencies:

	Nominal amount of currencies purchased forward				
	Sterling £m	US dollar £m	Euro £m	Other £m	Total £m
At 31 December 2019					
Currencies sold forward:					
Sterling	–	4	–	221	225
US dollar	24,411	–	4,468	581	29,460
Euro	21	297	–	264	582
Other	8	91	152	6	257
At 31 December 2018					
Currencies sold forward:					
Sterling	–	–	63	230	293
US dollar	24,376	–	3,280	753	28,409
Euro	84	119	–	274	477
Other	87	39	94	16	236

19 Financial instruments continued

The nominal value of interest rate and commodity contracts are denominated in the following currencies:

	2019 £m	2018 £m
Sterling	2,376	875
US dollar	1,370	1,233
Euro	1,635	1,636

Non-derivative financial instruments are denominated in the following currencies:

	Sterling £m	US dollar £m	Euro £m	Other £m	Total £m
At 31 December 2019					
Unlisted non-current investments	4	8	2	-	14
Trade receivables and similar items	139	2,735	541	62	3,477
Other non-derivative financial assets	33	649	23	21	726
Other assets	-	28	-	-	28
Short-term investments	-	-	6	-	6
Cash and cash equivalents	2,269	853	1,224	97	4,443
Assets	2,445	4,273	1,796	180	8,694
Borrowings	(416)	(1,172)	(1,739)	(4)	(3,331)
Lease liabilities	(225)	(1,784)	(76)	(269)	(2,354)
Financial RRSAs	-	(25)	(85)	-	(110)
Other liabilities	(29)	(43)	-	-	(72)
C Shares	(31)	-	-	-	(31)
Trade payables and similar items	(1,802)	(3,244)	(730)	(73)	(5,849)
Other non-derivative financial liabilities	(758)	(576)	(136)	(71)	(1,541)
Contract liabilities	-	(131)	-	-	(131)
Liabilities	(3,261)	(6,975)	(2,766)	(417)	(13,419)
	(816)	(2,702)	(970)	(237)	(4,725)
At 31 December 2018					
Unlisted non-current investments	2	7	13	-	22
Trade receivables and similar items	376	2,463	687	52	3,578
Other non-derivative financial assets	72	341	47	29	489
Short-term investments	-	-	-	6	6
Cash and cash equivalents	2,008	928	1,792	246	4,974
Assets	2,458	3,739	2,539	333	9,069
Borrowings	(1,441)	(1,435)	(1,753)	(33)	(4,662)
Financial RRSAs	-	(47)	(180)	-	(227)
Other liabilities	(24)	(38)	-	-	(62)
C Shares	(29)	-	-	-	(29)
Trade payables and similar items	(2,099)	(2,600)	(860)	(100)	(5,659)
Other non-derivative financial liabilities	(854)	(421)	(379)	(100)	(1,754)
Liabilities	(4,447)	(4,541)	(3,172)	(233)	(12,393)
	(1,989)	(802)	(633)	100	(3,324)

19 Financial instruments continued**Currency exposures**

The Group's actual currency exposure on financial instruments after taking account of derivative foreign currency contracts, which are not designated as hedging instruments for accounting purposes are as follows:

Functional currency of Group operations	Sterling £m	US dollar £m	Euro £m	Other £m	Total £m
At 31 December 2019					
Sterling	–	2	2	(4)	–
US dollar	–	–	(1)	–	(1)
Euro	1	(3)	–	(1)	(3)
Other	70	12	69	4	155
At 31 December 2018					
Sterling ¹	–	3	(237)	6	(228)
US dollar	(2)	–	(5)	5	(2)
Euro	2	(14)	–	12	–
Other	–	10	13	–	23

¹ The euro exposure primarily relates to deferred consideration on the acquisition of ITP Aero. Movements in this balance in relation to foreign exchange (recognised through the consolidated income statement) are partially matched by the related foreign exchange movement in the subsidiary's net assets, recognised through the consolidated statement of other comprehensive income.

Ageing beyond contractual due date of financial assets

	Within terms £m	Up to three months overdue £m	Between three months and one year overdue £m	More than one year overdue £m	Total £m
At 31 December 2019					
Unlisted non-current asset investments	14	–	–	–	14
Trade receivables and similar items	3,102	210	92	73	3,477
Other non-derivative financial assets	722	2	1	1	726
Other assets	28	–	–	–	28
Derivative financial assets	525	–	–	–	525
Short-term investments	6	–	–	–	6
Cash and cash equivalents	4,443	–	–	–	4,443
	8,840	212	93	74	9,219
At 31 December 2018					
Unlisted non-current asset investments	22	–	–	–	22
Trade receivables and similar items	3,108	265	132	73	3,578
Other non-derivative financial assets	489	–	–	–	489
Derivative financial assets	365	–	–	–	365
Short-term investments	6	–	–	–	6
Cash and cash equivalents	4,974	–	–	–	4,974
	8,964	265	132	73	9,434

19 Financial instruments continued**Contractual maturity analysis of non-derivative financial liabilities**

	Gross values				Carrying value £m
	Within one year £m	Between one and two years £m	Between two and five years £m	After five years £m	
At 31 December 2019					
Borrowings	(511)	(722)	(662)	(1,704)	(3,331)
Lease liabilities	(425)	(306)	(872)	(1,258)	(2,354)
Financial RRSAs	(35)	(7)	(14)	(63)	(110)
Other liabilities	(34)	(23)	(10)	(5)	(72)
C Shares	(31)	–	–	–	(31)
Trade payables and similar items	(5,677)	(62)	(20)	(90)	(5,849)
Other non-derivative financial liabilities	(1,162)	(308)	(35)	(36)	(1,541)
Contract liabilities	(131)	–	–	–	(131)
	(8,006)	(1,428)	(1,613)	(3,156)	(13,419)
At 31 December 2018					
Borrowings	(983)	(520)	(1,014)	(2,699)	(4,662)
Financial RRSAs	(48)	(62)	(59)	(73)	(227)
Other liabilities	(27)	(3)	(25)	(7)	(62)
C Shares	(29)	–	–	–	(29)
Trade payables and similar items	(5,542)	(51)	(40)	(26)	(5,659)
Other non-derivative financial liabilities	(1,273)	(150)	(259)	(72)	(1,754)
	(7,902)	(786)	(1,397)	(2,877)	(12,393)

Expected maturity analysis of derivative financial instruments

	Gross values				Carrying value £m
	Within one year £m	Between one and two years £m	Between two and five years £m	After five years £m	
At 31 December 2019					
Derivative financial assets:					
Cash inflows	1,475	1,487	2,072	3,202	
Cash outflows	(1,376)	(1,448)	(2,035)	(3,085)	
Other net cash flows ¹	17	12	34	24	
	116	51	71	141	525
Derivative financial liabilities:					
Cash inflows	4,383	4,113	11,987	4,804	
Cash outflows	(4,960)	(4,737)	(13,872)	(6,186)	
Other net cash flows ¹	(5)	(5)	(4)	–	
	(582)	(629)	(1,889)	(1,382)	(3,374)
At 31 December 2018					
Derivative financial assets:					
Cash inflows	1,001	934	2,187	2,061	
Cash outflows	(979)	(869)	(2,185)	(1,934)	
Other net cash flows ¹	24	7	15	16	
	46	72	17	143	365
Derivative financial liabilities:					
Cash inflows	4,753	4,753	13,481	3,437	
Cash outflows	(5,531)	(5,656)	(16,298)	(4,257)	
Other net cash flows ¹	(14)	(12)	(12)	–	
	(792)	(915)	(2,829)	(820)	(3,871)

¹ Derivative financial assets and liabilities settled on a net cash basis.

The Group regularly renegotiates the contractual maturities of its foreign exchange contracts. In general, the effect of such negotiations is the settlement of derivative financial liabilities somewhat earlier than the contractual maturity date.

19 Financial instruments continued**Interest rate risk**

In respect of income-earning financial assets and interest-bearing financial liabilities, the following table indicates their effective interest rates. The value shown is the carrying amount, before taking account of swaps.

	2019			2018		
	Fixed rate £m	Floating rate £m	Total £m	Fixed rate £m	Floating rate £m	Total £m
Short-term investments	–	6	6	–	6	6
Cash and cash equivalents ¹	–	4,443	4,443	–	4,974	4,974
Borrowings	(2,252)	(1,079)	(3,331)	(99)	(4,334)	(4,433)
Lease liabilities (2018: finance lease liabilities)	(1,578)	(776)	(2,354)	(229)	–	(229)
	(3,830)	2,594	(1,236)	(328)	646	318
Weighted average interest rates						
Borrowings	1.9%	1.6%		1.5%	2.1%	
Lease liabilities ²	3.6%	3.1%		4.1%		

¹ Cash and cash equivalents comprises bank balances and term deposits and earn interest based on short-term floating market interest rates.

² Interest rates for lease liabilities are considered to be the discount rates at the balance sheet date.

Some of the Group's borrowings are subject to the Group meeting certain obligations, including customary financial covenants. If the Group fails to meet its obligations these arrangements give rights to the lenders, upon agreement, to accelerate repayment of the facilities. At 31 December 2019, none of these were in breach (2018: none). There are no rating triggers contained in any of the Group's facilities that could require the Group to accelerate or repay any facility for a given movement in the Group's credit rating.

In addition, the Group has **£2,500m** (2018: £2,500m) of undrawn committed borrowing facilities which are available for at least the next four years.

Sensitivity analysis

Sensitivities at 31 December (all other variables held constant) – impact on profit after tax and equity	2019 £m	2018 £m
Sterling 10% weaker against the US dollar	(2,557)	(2,401)
Sterling 10% stronger against the US dollar	2,105	1,998
Euro 10% weaker against the US dollar	(376)	(268)
Euro 10% stronger against the US dollar	307	219
Sterling 10% weaker against the Euro	(32)	(32)
Sterling 10% stronger against the Euro	26	26
Commodity prices 10% lower	(32)	(21)
Commodity prices 10% higher	32	21
Interest rates 50 basis points lower	(82)	–
Interest rates 50 basis points higher	85	–

19 Financial instruments continued

C Shares and payments to shareholders

The Company issues non-cumulative redeemable preference shares (C Shares) as an alternative to paying a cash dividend. C Shares in respect of a year are issued in the following year. Shareholders are able to redeem any number of their C Shares for cash. Any C Shares retained attract a dividend of 75% of LIBOR on the 0.1p nominal value of each share, paid on a twice-yearly basis, and have limited voting rights. The Company has the option to compulsorily redeem the C Shares, at any time, if the aggregate number of C Shares in issue is less than 10% of the aggregate number of C Shares issued, or on the acquisition or capital restructuring of the Company.

Movements in issued and fully paid C Shares during the year were as follows:

	2019		2018	
	Millions	Nominal value £m	Millions	Nominal value £m
At 1 January	29,071	29	28,429	28
Issued	221,954	222	216,717	217
Redeemed	(220,417)	(220)	(216,075)	(216)
At 31 December	30,608	31	29,071	29

Payments to shareholders in respect of the year represent the value of C Shares to be issued in respect of the results for the year. Issues of C Shares were declared as follows:

	2019		2018	
	Pence per share	£m	Pence per share	£m
Interim	4.60	87	4.60	86
Final	7.10	137	7.10	135
	11.70	224	11.70	221

20 Provisions for liabilities and charges

	At 1 January 2019 £m	Reclassified to lease liabilities (IFRS 16) £m	Charged to income statement £m	Reversed £m	Utilised £m	Transfers £m	Exchange differences £m	At 31 December 2019 £m
Trent 1000 exceptional costs ¹	779	–	1,275	–	(672)	–	–	1,382
Contract losses ²	206	–	592	(4)	(78)	62	(5)	773
Warranties and guarantees	373	–	129	(19)	(123)	–	(15)	345
Customer financing	17	–	12	–	(7)	–	–	22
Restructuring	204	(8)	49	(48)	(128)	–	(1)	68
Insurance	87	–	25	(17)	(25)	–	–	70
Tax related interest and penalties	62	–	14	(19)	(1)	–	(1)	55
Employer liability claims	48	–	4	–	(3)	–	–	49
Other	141	(67)	33	(34)	(21)	(9)	(3)	40
	1,917	(75)	2,133	(141)	(1,058)	53	(25)	2,804
Current liabilities	1,122							858
Non-current liabilities	795							1,946

¹ The charge to the income statement for Trent 1000 includes £15m as a result of discount unwind.

² The charge to the income statement for contract losses includes a £40m impact from the change in discount rates on contract losses recorded in prior years as a result of the fall in US bonds, which drives the calculation of the risk-free discount rate.

In November, we announced the outcome of recent testing and a thorough technical and financial review of the Trent 1000 TEN programme, following technical issues which were identified in 2019. This resulted in a revised timeline and a more conservative estimate of durability for the improved HP turbine blade for the TEN variant. An exceptional charge of £1,361m (at underlying exchange rates) has been recorded in the income statement. The charge is £1,531m at prevailing exchange rates and net of £203m reflecting insurance receipts and contract accounting adjustments. Of the charge, £1,275m has been recorded in relation to Trent 1000 exceptional costs, and a further £459m in relation to contract losses (see below). See note 2 for further details.

During 2019, we have utilised £672m of the Trent 1000 exceptional costs provision. This represents customer disruption costs settled in cash and credit notes, and remediation shop visit costs. We expect to use this provision over the period 2020 to 2023.

Provisions for contract losses are recorded when the direct costs to fulfil a contract are assessed as being greater than the expected revenue. Included within the provision charged of £592m, is £459m (at prevailing exchange rates) relating to the upfront recognition of future losses on a small number of contracts which are now loss making as a result of the margin impact of our updated HP turbine durability expectations on the Trent 1000 TEN. Provisions for contract losses are expected to be utilised over the term of the customer contracts, typically within 10–15 years.

Provisions for warranties and guarantees primarily relate to products sold and generally cover a period of up to three years.

20 Provisions for liabilities and charges continued

Customer financing provisions cover guarantees provided for asset value and/or financing.

In connection with the sale of its products the Group will, on some occasions, provide financing support for its customers – generally in respect of civil aircraft. The Group's commitments relating to these financing arrangements are spread over many years, relate to a number of customers and a broad product portfolio and are generally secured on the asset subject to the financing. These include commitments of **US\$2.8bn** (2018: US\$2.3bn) (on a discounted basis) to provide facilities to enable customers to purchase aircraft (of which approximately US\$656m could be called during 2020). These facilities may only be used if the customer is unable to obtain financing elsewhere and are priced at a premium to the market rate. Consequently, the Directors do not consider that there is a significant exposure arising from the provision of these facilities.

Commitments on delivered aircraft in excess of the amounts provided are shown in the table below. These are reported on a discounted basis at the Group's borrowing rate to reflect better the time span over which these exposures could arise. These amounts do not represent values that are expected to crystallise. The commitments are denominated in US dollars. As the Group does not generally adopt cash flow hedge accounting for future foreign exchange transactions, this amount is reported, together with the sterling equivalent at the reporting date spot rate. The values of aircraft providing security are based on advice from a specialist aircraft appraiser.

	2019		2018	
	£m	\$m	£m	\$m
Gross commitments	60	79	93	119
Value of security ¹	(9)	(11)	(24)	(30)
Indemnities	(8)	(11)	(19)	(24)
Net commitments	43	57	50	65
Net commitments with security reduced by 20% ²	43	57	60	77
¹ Security includes unrestricted cash collateral of:	–	–	4	6

² Although sensitivity calculations are complex, the reduction of relevant security by 20% illustrates the sensitivity to changes in this assumption.

Restructuring provisions are made for Group approved, formal restructuring programmes where the restructuring has either commenced or has been publicly announced. Included is the Group-wide restructuring programme announced on 14 June 2018, which is an on-going multi-year restructuring programme across the business and reflects the severance costs as well as the consultancy costs that will help deliver the planned reductions. The majority of the provision is expected to be utilised over the next two years.

The Group's captive insurance company retains a portion of the exposures it insures on behalf of the remainder of the Group. Significant delays occur in the notification and settlement of claims and judgement is involved in assessing outstanding liabilities, the ultimate cost and timing of which cannot be known with certainty at the balance sheet date. The insurance provisions are based on information currently available, however it is inherent in the nature of the business that ultimate liabilities may vary. Provisions for outstanding claims are established to cover the outstanding expected liability as well as claims incurred but not yet reported.

Provisions for tax related interest and penalties relate to uncertain tax positions in some of the jurisdictions in which the Group operates. Utilisation of the provisions will depend on the timing of resolution of the issues with the relevant tax authorities.

The provision relating to employer healthcare liability claims is as a result of an historical insolvency of the previous provider and is expected to be utilised over the next 30 years.

Other provisions comprise a number of liabilities with varying expected utilisation rates.

21 Post-retirement benefits

The Group operates a number of defined benefit and defined contribution schemes:

- The UK defined benefit scheme is funded, with the assets held in a separate trustee administered fund. Employees are entitled to retirement benefits based on either their final or career average salaries and length of service.
- Overseas defined benefit schemes are a mixture of funded and unfunded plans and provide benefits in line with local practice. Additionally in the US, and to a lesser extent in some other countries, the Group's employment practices include the provision of healthcare and life insurance benefits for retired employees. These schemes are unfunded.

The valuations of the defined benefit schemes are based on the most recent funding valuations, where relevant, updated by the scheme actuaries to 31 December 2019.

The defined benefit schemes expose the Group to actuarial risks such as longevity, interest rate, inflation and investment risks. In the UK, and in the principal US and Canadian pension schemes, the Group has adopted investment policies to mitigate some of these risks. This involves investing a significant proportion of the schemes' assets in liability driven investment (LDI) portfolios, which hold investments designed to offset interest rate and inflation rate risks. In addition, during the year, the scheme has completed a buy-in/buy-out of UK pensioner liabilities – see page 169.

Amounts recognised in the income statement

	2019			2018		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
Defined benefit schemes:						
Current service cost and administrative expenses	164	52	216	183	58	241
Past-service cost in respect of equalisation ¹	–	–	–	121	–	121
Other past-service cost/(credit) ²	–	6	6	(9)	(1)	(10)
	164	58	222	295	57	352
Defined contribution schemes	66	91	157	41	100	141
Operating cost	230	149	379	336	157	493
Net financing (credit)/charge in respect of defined benefit schemes	(59)	36	(23)	(55)	32	(23)
Total income statement charge	171	185	356	281	189	470

¹ In the UK in 2018, past-service costs of £121m were recognised relating to the estimated cost of equalising benefits earned after May 1990 between men and women. The UK scheme (Rolls-Royce UK Pension Fund) has to provide Guaranteed Minimum Pensions (GMPs) which, as a result of statutory rules, have been calculated differently for men and women. Although equal treatment in pension provision for males and females has been required since 1990, there has been uncertainty on whether and how pension schemes are required to equalise GMPs. A High Court judgement on the Lloyds Banking Group hearing was published on 26 October 2018. The judgement confirmed that GMPs earned from 1990 must be equalised and highlighted an acceptable range of methods. The estimated cost of this equalisation was £97m. In addition, a cost of £24m was recognised in relation to obligations to equalise certain other post-1990 benefits between men and women. The total cost of £121m represents the Directors' best estimate of the cost, based on actuarial advice. However, the final cost will differ from this amount when the final method of equalisation is agreed with the Trustee and subsequently implemented.

² In addition in 2018, a past-service credit of £9m arose related to the restructuring activities. This credit was offset against the restructuring costs. All amounts were excluded from the underlying results.

The operating cost is charged as follows:

	Defined benefit		Defined contribution		Total	
	2019 £m	2018 £m	2019 £m	2018 £m	2019 £m	2018 £m
Cost of sales	158	176	113	104	271	280
Commercial and administrative costs	40	148	26	21	66	169
Research and development costs	24	28	18	16	42	44
	222	352	157	141	379	493

Pension contributions to UK pension arrangements are generally paid via a salary sacrifice scheme under which employees agree to a reduction in gross contractual pay in return for the Group making additional pension contributions on their behalf. As a result, there is a decrease in wages and salaries and a corresponding increase in pension costs of **£47m** (2018: £31m) in the year.

21 Post-retirement benefits continued

Net financing comprises:

	2019			2018		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
Financing on scheme obligations	303	66	369	286	59	345
Financing on scheme assets	(362)	(30)	(392)	(341)	(27)	(368)
Net financing (income)/charge in respect of defined benefit schemes	(59)	36	(23)	(55)	32	(23)
Financing income on scheme surpluses	(59)	(1)	(60)	(55)	(1)	(56)
Financing cost on scheme deficits	–	37	37	–	33	33

Amounts recognised in OCI in respect of defined benefit schemes

	2019			2018		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
Actuarial gains and losses arising from:						
Demographic assumptions	309	38	347	(130)	(4)	(134)
Financial assumptions	(1,723)	(228)	(1,951)	782	134	916
Experience adjustments	79	29	108	(6)	9	3
Return on scheme assets excluding financing income	456	106	562	(705)	(53)	(758)
	(879)	(55)	(934)	(59)	86	27

On 5 June 2019, the Group entered into a partial buy-in with Legal & General Assurance Society Limited covering the benefits of circa 33,000 in-payment pensioners. As a result of the transaction, an asset re-measurement net loss estimated at £600m has been recognised within the line 'Actuarial gains/(losses) recognised in OCI'. The buy-in was in anticipation of a buy-out. On 1 December 2019, 90% of the buy-in liabilities (covering 29,614 pensioners) were transferred, resulting in pension assets and pension liabilities of £3.6bn being derecognised from the Group's balance sheet. The remaining 10% of the buy-in liabilities (covering 2,261 pensioners) was concluded in January 2020 with the final balancing payment made on 1 February 2020. Pension assets and liabilities of £408m will be derecognised in 2020. There is no impact upon the income statement arising from this transaction.

Amounts recognised in the balance sheet in respect of defined benefit schemes

	2019			2018		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
Present value of funded obligations	(8,499)	(842)	(9,341)	(10,847)	(758)	(11,605)
Fair value of scheme assets	9,640	845	10,485	12,773	735	13,508
Net asset/(liability) on funded schemes	1,141	3	1,144	1,926	(23)	1,903
Present value of unfunded obligations	–	(1,352)	(1,352)	–	(1,289)	(1,289)
Net asset/(liability) recognised in the balance sheet	1,141	(1,349)	(208)	1,926	(1,312)	614
Post-retirement scheme surpluses ¹	1,141	29	1,170	1,926	18	1,944
Post-retirement scheme deficits	–	(1,378)	(1,378)	–	(1,303)	(1,303)
Included in liabilities associated with assets held for sale	–	–	–	–	(27)	(27)

¹ The surplus in the UK scheme is recognised as, on ultimate wind-up when there are no longer any remaining members, any surplus would be returned to the Group, which has the power to prevent the surplus being used for other purposes in advance of this event.

Overseas schemes are located in the following countries:

	2019			2018		
	Assets £m	Obligations £m	Net £m	Assets £m	Obligations £m	Net £m
Canada	227	(275)	(48)	186	(227)	(41)
Germany	2	(853)	(851)	–	(749)	(749)
US pension schemes	616	(635)	(19)	549	(596)	(47)
US healthcare schemes	–	(420)	(420)	–	(446)	(446)
Other	–	(11)	(11)	–	(29)	(29)
Net asset/(liability) recognised in the balance sheet	845	(2,194)	(1,349)	735	(2,047)	(1,312)

21 Post-retirement benefits continued**Defined benefit schemes****Assumptions**

Significant actuarial assumptions for the UK scheme at the balance sheet date were as follows:

	2019	2018
Discount rate	2.15%	2.95%
Inflation assumption (RPI) ¹	3.15%	3.40%
Rate of increase in salaries	3.15%	3.65%
Transfer assumption (active/deferred)	45%/35%	40%/32.5%
Life expectancy from age 65: current male pensioner	21.8 years	22.1 years
future male pensioner currently aged 45	23.1 years	23.4 years
current female pensioner	23.1 years	23.4 years
future female pensioner currently aged 45	25.0 years	25.2 years

¹ This is the assumption for the Retail Price Index. The Consumer Price Index is assumed to be 1.0% lower (2018: 1.1% lower).

Discount rates are determined by reference to the market yields on AA rated corporate bonds. The rate is determined by using the profile of forecast benefit payments to derive a weighted average discount rate from the yield curve.

The inflation assumption is determined by the market-implied assumption based on the yields on long-term index-linked government securities and increases in salaries are based on actual experience, allowing for promotion, of the real increase above inflation.

The mortality assumptions adopted for the UK pension schemes are derived from the SAPS S2 'All' actuarial tables, with future improvements in line with the CMI 2018 core projections updated to reflect use of an 'A' parameter of 0.25% for future improvements and long-term improvements of 1.25%. Where appropriate, these are adjusted to take account of the scheme's actual experience.

Other assumptions have been set on advice from the actuary, having regard to the latest trends in scheme experience and the assumptions used in the most recent funding valuation. The rate of increase of pensions in payment is based on the rules of the scheme, combined with the inflation assumption where the increase is capped.

Assumptions for overseas schemes are less significant and are based on advice from local actuaries. The principal assumptions are:

	2019	2018
Discount rate	2.40%	3.40%
Inflation assumption	1.90%	2.90%
Long-term healthcare cost trend rate	4.80%	4.80%
Male life expectancy from age 65: current pensioner	21.4 years	21.1 years
future pensioner currently aged 45	21.7 years	23.1 years

Changes in present value of defined benefit obligations

	2019			2018		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
At 1 January	(10,847)	(2,047)	(12,894)	(11,499)	(2,120)	(13,619)
Exchange differences	–	71	71	–	(56)	(56)
Current service cost	(158)	(50)	(208)	(179)	(56)	(235)
Past-service cost	–	–	–	(112)	–	(112)
Finance cost	(303)	(65)	(368)	(286)	(59)	(345)
Contributions by employees	(2)	(3)	(5)	(2)	(3)	(5)
Benefits paid out	571	79	650	585	78	663
Acquisition of businesses	–	(2)	(2)	–	–	–
Disposal of businesses	–	28	28	–	31	31
Actuarial (losses)/gains	(1,335)	(168)	(1,503)	646	140	786
Transfers	–	(37)	(37)	–	(2)	(2)
Settlement	3,575	–	3,575	–	–	–
At 31 December	(8,499)	(2,194)	(10,693)	(10,847)	(2,047)	(12,894)
Funded schemes	(8,499)	(842)	(9,341)	(10,847)	(758)	(11,605)
Unfunded schemes	–	(1,352)	(1,352)	–	(1,289)	(1,289)

The defined benefit obligations are in respect of:

Active plan participants	(4,751)	(1,185)	(5,936)	(4,229)	(1,088)	(5,317)
Deferred plan participants	(2,154)	(171)	(2,325)	(1,975)	(157)	(2,132)
Pensioners	(1,594)	(838)	(2,432)	(4,643)	(802)	(5,445)
Weighted average duration of obligations (years)	23	16	22	19	15	18

21 Post-retirement benefits continued

Changes in fair value of scheme assets

	2019			2018		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
At 1 January	12,773	735	13,508	13,607	750	14,357
Exchange differences	–	(17)	(17)	–	24	24
Administrative expenses	(6)	(2)	(8)	(4)	(2)	(6)
Financing	362	30	392	341	27	368
Return on plan assets excluding financing	456	106	562	(705)	(53)	(758)
Contributions by employer	199	67	266	117	64	181
Contributions by employees	2	3	5	2	3	5
Benefits paid out	(571)	(79)	(650)	(585)	(78)	(663)
Acquisition of businesses	–	2	2	–	–	–
Settlement	(3,575)	–	(3,575)	–	–	–
At 31 December	9,640	845	10,485	12,773	735	13,508
Total return on scheme assets	818	136	954	(364)	(26)	(390)

Fair value of scheme assets at 31 December

	2019			2018		
	UK schemes £m	Overseas schemes £m	Total £m	UK schemes £m	Overseas schemes £m	Total £m
Sovereign debt	5,799	277	6,076	9,388	315	9,703
Corporate debt instruments	3,135	467	3,602	3,447	356	3,803
Interest rate swaps	14	–	14	1,342	–	1,342
Inflation swaps	(18)	–	(18)	(375)	–	(375)
Cash and similar instruments ¹	(784)	13	(771)	(1,991)	22	(1,969)
Liability driven investment (LDI) portfolios ²	8,146	757	8,903	11,811	693	12,504
Longevity swap ³	–	–	–	(292)	–	(292)
Listed equities	323	76	399	592	39	631
Unlisted equities	95	–	95	128	–	128
Synthetic equities ⁴	3	5	8	(13)	(4)	(17)
Sovereign debt	–	–	–	–	5	5
Corporate debt instruments	662	4	666	548	–	548
Cash	–	4	4	–	2	2
Partial buy-in insurance policy	408	–	408	–	–	–
Other	3	(1)	2	(1)	–	(1)
At 31 December	9,640	845	10,485	12,773	735	13,508

¹ Cash and similar instruments include repurchase agreements on UK Government bonds amounting to £(1,308)m (2018: £(1,991)m). The latest maturity date for these short-term borrowings is 12 October 2020.

² A portfolio of gilt and swap contracts, backed by investment-grade credit instruments and LIBOR generating assets, that is designed to hedge the majority of the interest rate and inflation risks associated with the schemes' obligations.

³ The longevity swap was transferred to Legal & General Assurance Society Limited as part of the partial buy-in described on page 169.

⁴ A portfolio of swap contracts designed to provide investment returns in line with global equity markets. The maximum exposure (notional value and accrued returns) on the portfolios was £328m (2018: £281m).

The investment strategy for the UK scheme is controlled by the Trustee in consultation with the Group. The scheme assets do not directly include any of the Group's own financial instruments, nor any property occupied by, or other assets used by, the Group. At 31 December 2019, there was an indirect holding of £0.1m of the Group's financial instruments (2018: £0.3m).

Future contributions

The Group expects to contribute approximately £170m to its defined benefit schemes in 2020 (2019: £220m): UK: £100m, Overseas: £70m (2019: UK: £140m, Overseas: £80m).

In the UK, the funding is based on a statutory triennial funding valuation process. This includes a negotiation between the Group and the Trustee on actuarial assumptions used to value obligations (Technical Provisions) which may differ from those used for accounting set out above. The assumptions used to value Technical Provisions must be prudent rather than a best estimate of the liability. Most notably, the Technical Provision discount rate is currently based upon UK Government yields plus 0.5% rather than being based on yields of AA corporate bonds. Following the triennial valuation process, a Schedule of Contributions (SoC) must be agreed which sets out the required contribution for current service cost and any contributions from the employer to eliminate a deficit. The most recent valuation, as at 31 March 2017, agreed by the Trustee in December 2017, showed that the UK scheme was estimated to be 112% funded on the Technical

21 Post-retirement benefits continued

Provisions basis. Employer contributions (inclusive of employee contributions paid by a salary sacrifice arrangement) will subsequently be paid at a rate of 28.5% during 2020 until a new SoC is agreed (2019: 27%). The current SoC includes an arrangement for a potential increase in contributions during 2021 to 2023 (capped at £48.3m a year) if the Technical Provisions funding position is below 107% at 31 March 2020. As at 31 December 2019, the Technical Provisions funding position was estimated to be 112% (2018: 111%).

Changes to UK defined benefit scheme

A consultation with active managers in the UK scheme was concluded in January 2020. The consultation process agreed certain changes for future accrual for the relevant manager group which will mitigate future funding cost increases. The accounting impact of this change will occur in 2020 rather than 2019. The change is expected to be immaterial to these accounts. The triennial valuation due at 31 March 2020 for the UK scheme will take these changes into account.

Sensitivities

The calculations of the defined benefit obligations are sensitive to the assumptions set out above. The following table summarises how the estimated impact of a change in a significant assumption would affect the UK defined benefit obligation at 31 December 2019, while holding all other assumptions constant. This sensitivity analysis may not be representative of the actual change in the defined benefit obligation as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

For the most significant funded schemes, the investment strategies hedge the risks from interest rates and inflation measured on a proxy solvency basis. For the UK scheme, the interest rate and inflation hedging is currently based on UK Government bond yields without any adjustment for any credit spread.

The sensitivity analysis set out below has been determined based on a method that estimates the impact on the defined benefit obligation as a result of reasonable changes in key assumptions occurring at the end of the reporting period.

		2019 £m	2018 £m
Reduction in the discount rate of 0.25% ¹	Obligation	(495)	(510)
	Plan assets (LDI portfolio)	502	624
Increase in inflation of 0.25% ¹	Obligation	(290)	(275)
	Plan assets (LDI portfolio)	235	272
Real increase in salaries of 0.25%	Obligations	(80)	(90)
Increase of 1% in transfer value assumption	Obligations	(64)	(56)
One year increase in life expectancy	Obligations	(408)	(465)

¹ The differences between the sensitivities on obligations and plan assets arise largely due to differences in the methods used to value the obligations for accounting purposes and the adopted proxy solvency basis.

22 Share capital

	Non-equity		Equity	
	Special Share of £1	Nominal value £m	Ordinary shares of 20p each Millions	Nominal value £m
Issued and fully paid				
At 1 January 2018	1	–	1,840	368
Shares issued to employee share trust	–	–	8	2
Shares issued in relation to the acquisition of ITP Aero	–	–	48	9
At 31 December 2018	1	–	1,896	379
Shares issued to employee share trust	–	–	6	1
Shares issued in relation to the acquisition of ITP Aero	–	–	29	6
At 31 December 2019	1	–	1,931	386

The rights attaching to each class of share are set out on page 206.

In accordance with IAS 32 *Financial Instruments: Presentation*, the Company's non-cumulative redeemable preference shares (C Shares) are classified as financial liabilities. Accordingly, movements in C Shares are included in note 19.

23 Share-based payments

Effect of share-based payment transactions on the Group's results and financial position

	2019 £m	2018 £m
Total expense recognised for equity-settled share-based payment transactions	30	32
Total expense recognised for cash-settled share-based payment transactions	–	3
Share-based payments recognised in the consolidated income statement	30	35
Liability for cash-settled share-based payment transactions	1	6

A description of the share-based payment plans is included in the Directors' Remuneration Report on pages 95 to 104.

Movements in the Group's share-based payment plans during the year

	ShareSave		LTIP and PSP	APRA
	Number Millions	Weighted average exercise price Pence	Number Millions	Number Millions
Outstanding at 1 January 2018	27.5	714	13.0	0.2
Granted	–	–	5.7	0.2
Forfeited	(1.3)	738	(4.4)	–
Exercised	(0.1)	656	(0.4)	–
Outstanding at 1 January 2019	26.1	713	13.9	0.4
Granted	16.6	677	5.3	0.2
Forfeited	(5.1)	814	(0.9)	–
Exercised	(5.7)	627	(5.1)	(0.2)
Outstanding at 31 December 2019	31.9	693	13.2	0.4
Exercisable at 31 December 2019	–	–	–	–
Exercisable at 31 December 2018	–	–	–	–

The weighted average share price at the date share options were exercised was **906p** (2018: 883p). The closing price at 31 December 2019 was **683p** (2018: 830p).

The weighted average remaining contractual life for the cash settled options at 31 December 2019 was **one year** (2018: two years).

Fair values of share-based payment plans

The weighted average fair value per share of equity-settled share-based payment plans granted during the year, estimated at the date of grant, are as follows:

	2019	2018
LTIP	851p	815p
LTIP (ELT & Board)	774p	739p
ShareSave – three year grant	165p	n/a
ShareSave – five year grant	176p	n/a
APRA	892p	858p

LTIP and PSP

The fair value of shares awarded is calculated using a pricing model that takes account of the non-entitlement to dividends (or equivalent) during the vesting period and the market-based performance condition based on expectations about volatility and the correlation of share price returns in the group of FTSE 100 companies and which incorporates into the valuation the interdependency between share price performance and TSR vesting. This adjustment decreases the fair value of the award relative to the share price at the date of grant.

ShareSave

The fair value of the options granted is calculated using a pricing model that assumes that participants will exercise their options at the beginning of the six-month window if the share price is greater than the exercise price. Otherwise it assumes that options are held until the expiration of their contractual term. This results in an expected life that falls somewhere between the start and end of the exercise window.

APRA

The fair value of shares awarded under APRA is calculated as the share price on the date of the award, excluding expected dividends (or equivalent).

24 Leases

Leases as lessee

The net book value of right-of-use assets at 31 December 2019 was £2,009m (see note 11) with a lease liability of £2,354m (as per note 17). Leases that have not yet commenced to which the Group is committed have a future liability of £5m and consists of factory equipment and a single property. The consolidated income statement shows the following amounts relating to leases:

	2019 £m
Land and buildings depreciation and impairment ¹	(59)
Plant and equipment depreciation ²	(33)
Aircraft and engines depreciation and impairment ³	(319)
Total depreciation and impairment charge for right-of-use assets	(411)
Interest expense ⁴	(88)
Expense relating to short-term leases of 12 months or less recognised as an expense on a straight-line basis ²	(23)
Expense relating to variable lease payments not included in lease liabilities ^{3,5}	(1)
Total lease expense	(523)
Income from sub-leasing right-of-use assets	79
Total amount recognised in the income statement	(444)

¹ Included in cost of sales and commercial and administration costs depending on the nature and use of the right-of-use asset.

² Included in cost of sales, commercial and administration costs, or research and development depending on the nature and use of the right-of-use asset.

³ Included in cost of sales.

⁴ Included in financing costs.

⁵ Variable lease payments primarily arise on a small number of contracts where engine lease payments are solely dependent upon utilisation rather than a periodic charge.

The total cash outflow for leases in 2019 was £383m. Of this: £359m related to leases reflected in the lease liability; £23m to short-term leases where lease payments are expensed on a straight-line basis; and £1m for variable lease payments where obligations are only due when the right-of-use assets are used. The timing difference between the income statement charge and cash flow relates to costs incurred at the end of leases for residual value guarantees that are recognised within depreciation over the term of the lease, the most significant amounts relate to engine leases.

The Group's leasing activities as a lessee and how they are accounted for

The Group leases aero engines that are used to support customers' aircraft fleets; land and buildings used for production, administration or training purposes; and equipment used in the manufacturing process and to support commercial and administrative activities. Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease arrangements do not impose any covenants, but leased assets may not be used as security for borrowing purposes.

Until 31 December 2018, leases were classified as either finance or operating leases. Payments made under operating leases and residual value guarantees were charged to the income statement on a straight-line basis over the period of the lease. From 1 January 2019, leases are recognised as a right-of-use asset and a corresponding lease liability at the date at which the leased asset is available for use by the Group. Each lease payment is allocated between reducing the liability and a finance cost. The finance cost is charged to the income statement over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period.

Right-of-use assets and lease liabilities arising over the lease term are now initially measured on a present value basis. The lease term represented is the non-cancellable period of the lease together with periods covered by an option to extend the lease where the Group is reasonably certain to extend. Lease liabilities include the net present value of the following lease payments where such flows exist:

- fixed payments less any lease incentive;
- variable lease payments that are based on an index or a rate;
- amounts expected to be payable by the Group under residual value guarantees;
- the exercise price of a purchase option if the Group is reasonably certain to exercise that option; and
- payments of penalties for terminating the lease, if the lease term reflects the Group exercising that option.

Leases for engines typically contain no specific contractual right to renew. Certain land and building leases have renewal options with renewal dates for the most significant property leases evenly spread over 2022–2028 and in 2041. Such judgements on lease terms are made each period end and consider the specific terms of the lease and the operational significance of the site, especially where utilised for manufacturing activities. Lease obligations beyond the renewal dates are included in the lease liability where we are reasonably certain to extend the lease.

Engine leases in the Civil Aerospace business often include clauses that require the engines to be returned to the lessor with specific levels of useable life remaining. The cost of meeting these requirements are included in the estimate of the lease payments set out above. The amount payable is dependent upon the utilisation of the engines over the lease term, whether the engine is restored to the required condition by performing an overhaul at our own cost or through the payment of amounts specified in the contract and any new contractual arrangements arising when the current lease contracts end. Where estimates of payments change, an adjustment is made to the lease liability and the right-of-use asset. Liabilities in USD and other non-functional currencies are reported at the closing spot rates with changes arising from a change in exchange rates reported within financing.

24 Leases continued

On transition to IFRS 16 on 1 January 2019, finance leases continued to be recognised at their 2018 closing value and operating leases were measured at the present value of the remaining lease payments discounted using an incremental borrowing rate appropriate to the lease. For new leases, the lease payments are discounted using the interest rate implicit in the lease or if that rate cannot be readily determined, which is generally the case for leases in the Group, the incremental borrowing rate, being the rate required to pay to borrow the funds necessary to obtain an asset of similar value to the right-of-use asset in a similar economic environment with similar terms, security and conditions.

To determine the incremental borrowing rate, the Group uses a build-up approach that starts with the risk-free interest rate which is then adjusted for credit risk to reflect the nature of the borrowing based on empirical evidence of similar external borrowings undertaken by the Group. The rate used reflects the term and currency of the lease.

The Group is exposed to potential future increases or reductions in lease payments where the amount paid is based on an index (such as LIBOR) or rate, which are not included in the lease liability until it takes effect. When adjustments to lease payments based on an index or rate take effect, the lease liability is remeasured and an equivalent adjustment is made to the right-of-use asset except where the change results from a change in floating interest rates when a revised discount rate is used that reflects changes in the interest rate.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of the lease liability or a revaluation of the liability;
- any lease payments made at or before the commencement date less any lease incentives received;
- any initial direct costs; and
- restoration costs.

Each right-of-use asset is depreciated over the shorter of its useful life and the lease term on a straight-line basis unless the lease is expected to transfer ownership of the underlying asset to the Group, in which case the asset is depreciated to the end of the useful life of the asset.

There was a single onerous lease contract where as a permitted practical expedient the Group has adjusted the right-of-use asset at the date of initial application by the amount of the provision on the balance sheet at 31 December 2018.

Income from sub-leasing right-of-use assets is primarily generated from the use of engines by our Civil Aerospace customers. In a small number of circumstances current excess property capacity is sub-let at market rates.

Leases as lessor

The Group acts as lessor for engines to Civil Aerospace customers when they require engines to support their fleets. Lease agreements with the lessee provide protection over our assets. Usage in excess of specified limits and damage to the engine while on lease are covered by variable lease payment structures. Lessee bankruptcy risk is managed through the Cape Town Convention on International Interests in Mobile Equipment (including a specific protocol relating to aircraft equipment); an international treaty that creates common standards for the registration of lease contracts and establishes various legal remedies for default in financing agreements, including repossession and the effect of particular states' bankruptcy laws. Engines are only leased once we confirm that appropriate insurance documentation is established that covers the engine assets to pre-agreed amounts. The Group also leases out a small number of properties, or parts of properties, where there is excess capacity. All contracts where we are lessor are operating leases.

	2019 £m	2018 £m
Operating lease income – credited within revenue from aftermarket services ^{1, 2}	127	64

¹ Includes variable lease payments of £97m that do not depend on an index or a rate.

² Items of property, plant and equipment subject to an operating lease are disclosed in note 10.

Non-cancellable undiscounted operating lease rentals are receivable as follows:

	2019 £m	2018 £m
Within one year	13	23
Between one and two years	14	22
Between two and three years	12	22
Between three and four years	8	21
Between four and five years	5	17
After five years	17	55
	69	160

25 Contingent liabilities

Contingent liabilities in respect of customer financing commitments are described in note 20.

In January 2017, after full cooperation, the Company concluded deferred prosecution agreements with the SFO and the US Department of Justice and a leniency agreement with the MPF, the Brazilian federal prosecutors. Other authorities are investigating members of the Group for matters relating to misconduct in relation to historical matters. The Group is responding appropriately. Action may be taken by further authorities against the Company or individuals. In addition, we could still be affected by actions from customers and customers' financiers. The Directors are not currently aware of any matters that are likely to lead to a material financial loss over and above the penalties imposed to date, but cannot anticipate all the possible actions that may be taken or their potential consequences.

Contingent liabilities exist in respect of guarantees provided by the Group in the ordinary course of business for product delivery, performance and reliability. The Group has, in the normal course of business, entered into arrangements in respect of export finance, performance bonds, countertrade obligations and minor miscellaneous items. Various Group undertakings are parties to legal actions and claims which arise in the ordinary course of business, some of which are for substantial amounts. As a consequence of the insolvency of an insurer as previously reported, the Group is no longer fully insured against known and potential claims from employees who worked for certain of the Group's UK based businesses for a period prior to the acquisition of those businesses by the Group. While the outcome of some of these matters cannot precisely be foreseen, the Directors do not expect any of these arrangements, legal actions or claims, after allowing for provisions already made, to result in significant loss to the Group.

The Group's share of equity accounted entities' contingent liabilities is **nil** (2018: nil).

26 Related party transactions

	2019 £m	2018 £m
Sales of goods and services to joint ventures and associates	3,776	3,237
Purchases of goods and services from joint ventures and associates	(3,685)	(2,957)
Lease payments to joint ventures and associates	(210)	(189)
Guarantees of joint arrangements' and associates' borrowings	1	-
Guarantees of non-wholly owned subsidiaries' borrowings	3	3
Dividends received from joint ventures and associates	92	105
Other income received from joint ventures and associates	1	2

Included in sales of goods and services to joint ventures and associates are sales of spare engines amounting to **£277m** (2018: £563m).

Profit recognised in the year on such sales amounted to **£93m** (2018: £157m), including profit on current year sales and recognition of profit deferred on sales in previous years. On an underlying basis (at actual achieved rates on settled derivative transactions), the amounts were **£78m** (2018: £132m). Cash receipts relating to the sale of spare engines amounted to **£414m** (2018: £563m).

The aggregated balances with joint ventures are shown in notes 14 and 18. Transactions with Group pension schemes are shown in note 21.

In the course of normal operations, related party transactions entered into by the Group have been contracted on an arms-length basis.

Key management personnel are deemed to be the Directors (pages 62 to 64) and the members of the Executive Team (described on page 65). Remuneration for key management personnel is shown below:

	2019 £m	2018 £m
Salaries and short-term benefits	9	19
Post-retirement schemes	-	-
Share-based payments	5	5
	14	24

More detailed information regarding the Directors' remuneration, shareholdings, pension entitlements, share options and other long-term incentive plans is shown in the Directors' Remuneration Report on pages 95 to 104. The charge for share-based payments above is based on when the award is charged to the income statement in accordance with IFRS 2 *Share-Based Payments*, rather than when the shares vest, which is the basis used in the Directors' Remuneration Report.

27 Acquisitions and disposals

Acquisitions

Siemens' eAircraft business

On the 30 September 2019, the Group completed the acquisition of the electric and hybrid-electric aerospace propulsion activities of Siemens. On acquisition the book value of assets acquired consisted of £2.8m of property, plant and equipment and £0.2m of other assets and liabilities. Of the £43m (€48.5m) acquisition cost, which was settled in cash, £38m has been allocated to identifiable intangible assets and £5m to other assets and liabilities. Goodwill of £11m was recognised on the transaction.

The Group increased its shareholding in the Berlin-based electricity storage specialist, Qinous GmbH from 19.9% to 73.1% on 15 January 2020 for a consideration of €10m. The acquisition will be incorporated within our Power Systems business.

Disposals

Commercial Marine and Rolls-Royce Power Development Limited

On the 1 April 2019, the Group completed the sale of its Commercial Marine business to KONGSBERG for £547m. The business was disclosed as a disposal group held for sale from 30 June 2018. In our 2018 half-year financial statements, we reported an impairment charge of £160m as a result of the decision to classify Commercial Marine as a business held for sale. Upon the disposal of Commercial Marine on 1 April 2019, and in accordance with IAS 21 *The Effects of Changes in Foreign Exchange Rates* we have recycled the cumulative currency translation reserve through the income statement in 2019. This has resulted in a cumulative currency translation gain of £98m.

On the 15 April 2019, the Group sold its shareholding in Rolls-Royce Power Development Limited to Rockland Capital Partners for £46m. The principal activity of this company was to operate a fleet of six industrial Trent power stations in the UK.

	Commercial Marine £m	Rolls-Royce Power Development Limited £m	Total £m
Proceeds			
Cash consideration	547	46	593
Cash and cash equivalents disposed	(118)	–	(118)
Net cash consideration	429	46	475
Disposal costs paid	(21)	(1)	(22)
Cash inflow per cash flow statement	408	45	453
Assets and liabilities disposed			
Intangible assets	236	–	236
Property, plant and equipment	139	7	146
Right-of-use assets	40	–	40
Deferred tax assets	7	–	7
Inventory	207	4	211
Trade receivables and other assets	210	4	214
Current tax assets	1	–	1
Lease liabilities	(39)	–	(39)
Trade payables and other liabilities	(274)	(5)	(279)
Deposits (payments received on account)	(74)	–	(74)
Provisions for liabilities and charges	(27)	–	(27)
Post-retirement scheme deficits	(28)	–	(28)
Net assets disposed	398	10	408

The gain on disposal of businesses totalled £139m.

	Commercial Marine £m	Rolls-Royce Power Development Limited £m	Total £m
Income statement			
Net cash consideration	429	46	475
Less: carrying amount of net assets sold	(398)	(10)	(408)
Profit on disposal before disposal costs	31	36	67
Disposal costs	(23)	(3)	(26)
Profit on disposal on business before tax	8	33	41
Tax on disposal	–	–	–
Profit on disposal of business after tax	8	33	41
Cumulative currency translation gain recycled from other comprehensive income	98	–	98
Gain recognised in the income statement	106	33	139

27 Acquisitions and disposals continued

Disposals continued

Trigno Energy S.r.l.

On 29 January 2020, the Group exercised its put option to sell 100% of the shares held in Trigno Energy S.r.l. The transaction is expected to complete in the first quarter of 2020. The shares will be transferred to Pilkington Italia S.r.l. for an estimated consideration of €5.6m.

Businesses held for sale

On 26 September 2019, the Group signed an agreement for the sale of the North America Civil Nuclear business to Westinghouse Electric Company LLC. for a cash consideration of approximately \$18m. The sale was completed on 31 January 2020.

As a result of the decision to classify the business as a disposal group held for sale, in accordance with IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations*, its carrying value was assessed against the anticipated proceeds and the disposal costs. An impairment charge of £25m has been recognised in the income statement, of which £15m relates to goodwill and an additional £10m impairment charge to property, plant and equipment and intangible assets. The impairment charge was allocated to the non-core businesses. The remaining assets of £17m have been transferred to assets held for sale, together with associated liabilities of £14m at 31 December 2019.

On 17 December 2019, the Group signed a share purchase agreement with Valsoft Corp. for the sale of the Knowledge Management System business. The consideration for the disposal is expected to be \$2.6m. The sale was completed on 3 February 2020.

Disposal – 2018

L'Orange

On 1 June 2018, the Group sold its L'Orange business, part of Rolls-Royce Power Systems, to Woodward Inc. for €673m. Under the sale agreement, the cash consideration may be adjusted by up to +/-€44m, based on L'Orange aftermarket sales over the five-year period to 31 May 2023 and this will be reviewed at each reporting date over the adjustment period, based on actual sales. No significant change has been identified to the cash consideration at 31 December 2019. Profit on disposal of the business (net of disposal costs) was £358m.

28 Derivation of summary funds flow statement

The table below shows the derivation of the summary funds flow statement (lines marked *) on page 20 from the cash flow statement (CFS) on page 119.

	2019		2018 †	
	£m	£m	£m	£m
* Underlying operating profit (see note 2)		808		616
Depreciation and impairment of property, plant and equipment	532		521	
Amortisation and impairment of intangible assets	372		565	
Depreciation and impairment of right-of-use assets	411		-	
Impairment of goodwill	(84)		(155)	
Acquisition accounting	(163)		(175)	
* Depreciation and amortisation		1,068		756
* Lease payments (capital plus interest)		(319)		-
* Additions of intangible assets		(591)		(680)
* Purchases of property, plant and equipment		(747)		(905)
* Increase in inventories		(43)		(616)
Movement in receivables/payables	77		1,129	
Movement in contract balances	526		363	
Realised derivatives in financing	(187)		(465)	
Revaluation of trading assets (excluding exceptional items)	158		170	
* Movement on receivables/payables/contract balances (excluding Civil LTSA)		574		1,197
* Underlying Civil Aerospace LTSA contract balances		754		679
* Movement on provisions		(506)		(242)
* Trent 1000 insurance		173		-
* Net interest received and paid		(73)		(70)
* Other		(41)		22
* Trading cash flow		1,057		757
* Contributions to defined benefit schemes in excess of underlying PBT charge		(9)		59
* Tax		(175)		(248)
* Group free cash flow		873		568
<i>Of which: Disposed entities</i>		<i>(41)</i>		<i>(78)</i>
<i>Group free cash flow (pre disposed entities)</i>		<i>914</i>		<i>646</i>
<i>Of which: Non-core businesses</i>		<i>3</i>		<i>(2)</i>
<i>Core free cash flow</i>		<i>911</i>		<i>648</i>
* Shareholder payments		(224)		(219)
* Acquisition of eAircraft		(43)		-
* Disposal of Commercial Marine and RRPD (2018: Disposal of L'Orange)		453		573
* Exceptional restructuring costs		(216)		(70)
* DPA payments		(102)		-
* Pension fund contribution		(35)		-
* IFRS 16		123		-
* Other		(8)		10
* Foreign exchange		(98)		54
* Change in net funds		723		916
Change in net funds		723		916
IFRS 16 impact (non cash)		(123)		-
Reclassification of other financial liabilities to borrowings		(79)		-
Change in net funds excluding IFRS 16		521		916

† The comparative information for the year ended 31 December 2018 has been re-presented to be on a comparable basis with the presentation adopted for the year ended 31 December 2019. There is no change to trading or group free cash flow. In summary, items previously included in 'other' within 'trading cash flow', which related to 'movements in receivables/payables' or movements in 'contract balances' have been included within those items.

During the year ended 31 December 2019, the Group received insurance receipts of £173m relating to the Trent 1000 in-service issues. This amount has been recognised within the Group's underlying results – see note 2.

28 Derivation of summary funds flow statement continued

Free cash flow is a measure of financial performance of the business' cash flow to see what is available for distribution among those stakeholders funding the business (including debt holders and shareholders). Free cash flow is calculated as trading cash flow less recurring tax and post-employment benefit expenses. It excludes payments made to shareholders, amounts spent (or received) on business acquisitions, SFO payments and foreign exchange changes on net funds. The Board considers that free cash flow reflects cash generated from the Group's underlying trading.

The table below shows a reconciliation of free cash flow to the change in cash and cash equivalents presented in the cash flow statement on page 119.

	2019		2018		Source
	£m	£m	£m	£m	
Change in cash and cash equivalents		(413)		1,953	A
Returns to shareholders		224		219	A
Net cash flow from changes in borrowings and lease liabilities (2018: finance leases)		1,385		(1,091)	A
Increase in short-term investments		–		3	A
Acquisition of Siemens' eAircraft business	43		–		A
Disposal of Commercial Marine and RRPD (2018: Disposal of L'Orange)	(453)		(573)		A
Other acquisitions and disposals	1		(10)		B
Changes in group structure		(409)		(583)	
Payments of financial penalties from agreements with investigating bodies		102		–	A
Exceptional restructuring expenditure		216		70	B
Pension fund contribution		35		–	B
Other		4		(3)	B
Capital element of lease repayments ¹		(271)		–	A
Free cash flow		873		568	

¹ As IFRS 16 has been adopted with effect from 1 January 2019, no adjustments have been made to present the comparative period on a consistent basis.

Sources:

A Cash flow statement

B Cash flow statement adjusted for non-underlying items including exchange differences

29 Impact of adopting IFRS 16 Leases

For leases previously classified as finance leases, the Group recognised the carrying amount of the lease asset and lease liability immediately before transition as the carrying amount of the right-of-use asset and the lease liability at the date of initial application. The measurement principles of IFRS 16 are only applied after that date.

The following table reconciles the operating lease obligations under the previous accounting standard, IAS 17 *Leases*, to the lease liability recorded under IFRS 16 on transition:

	£m
Operating lease commitments as reported at 31 December 2018	2,343
Lease commitments at end of aero engines lease contracts previously reflected in provisions and other liabilities	515
Discounted using the incremental borrowing rate at the date of initial application	(749)
Additional commitments recognised during final data review ¹	180
Impact of adopting IFRS 16	2,289
Commitments relating to disposal groups	(41)
At 1 January 2019	2,248
Finance lease liabilities recognised as at 31 December 2018	229
Lease liability recognised as at 1 January 2019	2,477
Of which are:	
Current lease liabilities	322
Non-current lease liabilities	2,155

¹ These have been offset by right-of-use assets with an equivalent value.

The recognised right-of-use assets relate to the following types of asset:

	1 January 2019 £m
Land and buildings	453
Plant and equipment	106
Aircraft and engines	1,654
Total right-of-use assets	2,213

29 Impact of adopting IFRS 16 Leases continued**Condensed consolidated balance sheet**

The change in accounting policy affected the following items in the balance sheet on 1 January 2019:

	Previous accounting as at 31 December 2018 £m	IFRS 16 impact £m	Transferred to assets held for sale ¹ £m	As at 1 January 2019 £m
ASSETS				
Property, plant and equipment ²	4,929	(197)	–	4,732
Right-of-use assets ³	–	2,254	(41)	2,213
Deferred tax assets ⁴	2,092	2	–	2,094
Other non-current assets	8,016	–	–	8,016
Non-current assets	15,037	2,059	(41)	17,055
Current assets	16,070	–	–	16,070
Assets held for sale	750	–	41	791
TOTAL ASSETS	31,857	2,059	–	33,916
LIABILITIES				
Borrowings and lease liabilities	(858)	(295)	7	(1,146)
Trade payables and other liabilities ⁵	(8,292)	49	–	(8,243)
Provisions for liabilities and charges ⁶	(1,122)	30	–	(1,092)
Other current liabilities	(4,579)	–	–	(4,579)
Current liabilities	(14,851)	(216)	7	(15,060)
Borrowings and lease liabilities	(3,804)	(1,994)	34	(5,764)
Trade payables and other liabilities ⁵	(1,940)	60	–	(1,880)
Deferred tax liabilities ⁴	(962)	6	–	(956)
Provisions for liabilities and charges ⁶	(795)	45	–	(750)
Other non-current liabilities	(10,181)	–	–	(10,181)
Non-current liabilities	(17,682)	(1,883)	34	(19,531)
Liabilities associated with assets held for sale	(376)	–	(41)	(417)
TOTAL LIABILITIES	(32,909)	(2,099)	–	(35,008)
NET LIABILITIES	(1,052)	(40)	–	(1,092)
EQUITY				
Accumulated losses ⁷	(2,991)	(40)	–	(3,031)
Other equity attributable to ordinary shareholders	1,917	–	–	1,917
Equity attributable to ordinary shareholders	(1,074)	(40)	–	(1,114)
Non-controlling interests	22	–	–	22
TOTAL EQUITY	(1,052)	(40)	–	(1,092)

¹ Relates to the Commercial Marine business which was classified as held for sale at 31 December 2018. See note 27 for more details.

² Transfer of net book value of finance leased assets to right-of-use assets.

³ Initial recognition of right-of-use assets accounted for under IFRS 16.

⁴ Deferred tax on the difference between the right-of-use assets measured on a retrospective basis at the Group's incremental borrowing rate and the lease liabilities at transition date.

⁵ Lease-related creditors reclassified against the IFRS 16 right-of-use assets on transition.

⁶ Provisions related to engine residual value guarantees reclassified against IFRS 16 right-of-use assets.

⁷ Post-tax difference between right-of-use assets measured on a retrospective basis and the lease liabilities at the transition date.

COMPANY BALANCE SHEET

At 31 December 2019

	Notes	2019 £m	2018 £m
ASSETS			
Investments – subsidiary undertakings	2	12,801	12,521
Trade receivables and other assets	3	1,870	371
Cash and cash equivalents		9	–
Current assets		1,879	371
TOTAL ASSETS		14,680	12,892
LIABILITIES			
Trade payables and other liabilities	4	(2,228)	(2,008)
Other financial liabilities	5	(31)	(29)
Current liabilities		(2,259)	(2,037)
NET ASSETS		12,421	10,855
EQUITY			
Called-up share capital	6	386	379
Share premium account		319	268
Merger reserve		7,051	7,029
Capital redemption reserve		2,652	2,432
Other reserve		248	218
Retained earnings		1,765	529
TOTAL EQUITY		12,421	10,855

The Company has elected to take the exemption under section 408 of the Companies Act 2006 from presenting the parent company income statement. The profit for the Company for the year was **£1,498m** (2018: £nil).

The Financial Statements on pages 183 to 186 were approved by the Board on 28 February 2020 and signed on its behalf by

Warren East **Stephen Daintith**
Chief Executive Chief Financial Officer

Company's registered number: 7524813

COMPANY STATEMENT OF CHANGES IN EQUITY

For the year ended 31 December 2019

	Attributable to ordinary shareholders						
	Share capital £m	Share premium £m	Merger reserve £m	Capital redemption reserve £m	Other reserve ¹ £m	Retained earnings ² £m	Total equity £m
At 1 January 2019	379	268	7,029	2,432	218	529	10,855
Profit for the year ³	–	–	–	–	–	1,498	1,498
Arising on issues of ordinary shares ⁴	7	51	244	–	–	–	302
Issue of C Shares	–	–	(222)	–	–	–	(222)
Redemption of C Shares	–	–	–	220	–	(220)	–
Share-based payments – direct to equity	–	–	–	–	30	(42)	(12)
At 31 December 2019	386	319	7,051	2,652	248	1,765	12,421

¹ Other reserve represents the value of the share-based payments in respect of employees of subsidiary undertakings for which payment has not been received.

² Retained earnings represents the Company's distributable reserves as defined under the Companies Act 2006.

³ During the year, the Company received an interim dividend of **£1,500m** (2018: nil) from its subsidiary undertaking.

⁴ During the year, the Company issued **28,973,262** new ordinary shares relating to the remaining three instalments for the acquisition of ITP Aero (2018: 47,556,914 new ordinary shares relating to the first five instalments) and **7,803,043** new ordinary shares (2018: 7,460,173) to the Group's share trust for its employee share-based payment plans with a net book value of **£66m** (2018: £74m).

NOTES TO THE COMPANY FINANCIAL STATEMENTS

1 Accounting policies

Basis of accounting

Rolls-Royce Holdings plc (the Company) is a company incorporated and domiciled in the United Kingdom. These Financial Statements have been prepared in accordance with Financial Reporting Standard 101 *Reduced Disclosure Framework* (FRS 101) on the historical cost basis.

In preparing these Financial Statements, the Company applied the recognition, measurement and disclosure requirements of International Financial Reporting Standards as adopted by the EU (Adopted IFRS), but makes amendments where necessary in order to comply with the Companies Act 2006.

In these Financial Statements the Company has applied the exemptions available under FRS 101 in respect of the following disclosures:

- a cash flow statement and related notes;
- comparative period reconciliations for share capital;
- the effects of new, but not yet effective accounting standards; and
- the requirements of IAS 24 *Related Party Transactions* and has, therefore, not disclosed transactions between the Company and its wholly-owned subsidiaries.

The accounting policies set out below have, unless otherwise stated, been applied consistently to all periods presented in these Financial Statements.

There were no changes to accounting standards that had a material impact on these Financial Statements.

The Company's Financial Statements are presented in sterling, which is the Company's functional currency.

As permitted by section 408 of the Companies Act 2006, a separate income statement for the Company has not been included in these Financial Statements. As permitted by the audit fee disclosure regulations, disclosure of non-audit fees information is not included in respect of the Company.

Investments in subsidiary undertakings

Investments included in fixed assets are investments in subsidiary companies and these are held at historical cost less provision for impairment which is considered annually by the Directors.

Trade receivables

Trade receivables are recognised initially at the transaction price. They are subsequently measured at amortised cost using the effective interest method, less provision for impairment. A provision for the impairment of trade receivables is established when there is objective evidence that the Company will not be able to collect all amounts due according to the original terms of the receivables. The Company applies the IFRS 9 *Financial Instruments* simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables.

Trade payables

Trade payables are recognised initially at the transaction price and subsequently measured at amortised cost using the effective interest method.

Equity

Ordinary shares are classified as equity. Equity instruments are measured at the fair value of the cash or other resources received or receivable, net of the direct costs of issuing the equity instruments.

Share-based payments

As described in the Directors' Remuneration Report on pages 95 to 104, the Company grants awards of its own shares to employees of its subsidiary undertakings (see note 23 of the Consolidated Financial Statements). The costs of share-based payments in respect of these awards are accounted for, by the Company, as an additional investment in its subsidiary undertakings. The costs are determined in accordance with IFRS 2 *Share-based Payment*. Any payments made by the subsidiary undertakings in respect of these arrangements are treated as a return of this investment.

Financial instruments

In accordance with IAS 32 *Financial Instruments: Presentation*, the Company's C Shares are classified as financial liabilities and held at amortised cost from the date of issue until redeemed.

2 Investments – subsidiary undertakings

	£m
Cost:	
At 1 January 2019	12,521
Additions ¹	250
Cost of share-based payments in respect of employees of subsidiary undertakings less receipts from subsidiaries in respect of those payments	30
At 31 December 2019	12,801

¹ Additions relate to investments in Rolls-Royce plc, relating to the remaining three instalments for the Group's acquisition of ITP Aero.

Details of the Company's subsidiary undertakings and joint venture and associates undertakings are listed on pages 187 to 193.

2 Investments – subsidiary undertakings continued

The carrying value of the Company's investments in subsidiary undertakings has been tested for impairment in accordance with IAS 36 *Impairment of Assets*. The carrying value is compared to the asset's recoverable amount and has been assessed by reference to value in use. The value in use has been calculated based upon a discounted cash flow methodology using the most recent forecast prepared by management of the Rolls-Royce Holdings plc group. Cash flows beyond the five-year period have been assumed to grow at 2.0% and discounted using a pre-tax discount rate of 12.6%. The key underlying assumptions in the cash flow projections are assumed market share, programme timings, unit cost assumptions, discount rates and foreign exchange rates. No impairment was identified.

The Directors do not consider that any reasonably possible changes in the key assumptions would cause the value in use of the investment in subsidiary undertakings to fall below its carrying value.

3 Trade receivables and other assets

	2019 £m	2018 £m
Amounts owed by – subsidiary undertakings	1,870	371

Amounts owed by subsidiary undertakings are related to dividends receivable from Rolls-Royce Group Limited (formerly Rolls-Royce Group plc). The balance is short term in nature and Rolls-Royce Group Limited is the immediate parent undertaking of the Rolls-Royce plc group. In accordance with IFRS 9, a provision for impairment of £1m has been recognised as at 31 December 2019 (2018: £nil) in respect of this balance.

4 Trade payables and other liabilities

	2019 £m	2018 £m
Amounts owed to – subsidiary undertakings	2,228	2,008

Amounts owed to subsidiary undertakings are interest-free and repayable on demand.

5 Financial liabilities

C Shares

Movements during the year were as follows:

	C Shares of 0.1p millions	Nominal value £m
At 1 January 2019	29,071	29
Issued	221,954	222
Redeemed	(220,417)	(220)
At 31 December 2019	30,608	31

The rights attaching to C Shares are set out on page 206.

6 Share capital

	Non-equity			Equity	
	Special Share of £1	Preference shares of £1 each	Nominal value £m	Ordinary shares of 20p each Millions	Nominal value £m
Issued and fully paid					
At 1 January 2019	1	–	–	1,896	379
Shares issued to employee share trust	–	–	–	6	1
Shares issued in relation to the acquisition of ITP Aero	–	–	–	29	6
At 31 December 2019	1	–	–	1,931	386

The rights attaching to each class of share are set out on page 206.

In accordance with IAS 32, the Company's non-cumulative redeemable preference shares (C Shares) are classified as financial liabilities. Accordingly, movements in C Shares are included in note 5.

7 Reconciliation of net assets between Rolls-Royce Holdings plc Group and Company

At 31 December 2019, the Rolls-Royce Holdings plc consolidated group had net liabilities of £3.4bn (2018: £1.1bn) compared to £12.4bn (2018: £10.9bn) of net assets of the Company. The Company is a holding company and does not trade in its own right. As set out in note 2 we have assessed the carrying value of the Company's investment in subsidiaries, which supports the recovery of those investments.

The key drivers of the difference between the Company and consolidated group net balance sheet positions are as follows:

- The Company was created through a Scheme of Arrangement and incorporated in 2011. On incorporation, the value of the Company's investment in subsidiaries was based on the market capitalisation of the Rolls-Royce group. The Group's consolidated financial statements are prepared on a historical cost basis except where Adopted IFRS requires a valuation basis to be applied. See page 123 for further details.
- The adoption of IFRS 15 at 1 January 2017 reduced the Group's net balance sheet position by £5.3bn and the pension buy-in (see note 21 in the Consolidated Financial Statements) reduced the Group's net balance sheet position by circa £600m in 2019. Neither of these impacted the Company; and
- The mark-to-market loss on the foreign exchange hedge book of £3.1bn is recorded in a subsidiary of the Company and not in the Company itself.

8 Contingent liabilities

Where the Company enters into financial guarantee contracts to guarantee the indebtedness of other companies within its group, the Company considers these to be insurance arrangements, and accounts for them as such. In this respect, the Company treats the guarantee contract as a contingent liability until such time as it becomes probable that the Company will be required to make a payment under the guarantee.

At 31 December 2019, these guarantees amounted to **£3,085m** (2018: £3,982m).

9 Other information

Employees

The Company had no employees in 2019 (2018: none).

Share-based payments

Shares in the Company have been granted to employees of the Group as part of share-based payment plans, and are charged in the employing company.

Emoluments of Directors

The remuneration of the Directors of the Company is shown below, further information is in the Directors' Remuneration Report on pages 95 to 104.

	2019			2018		
	Highest paid director £000	Other directors £000	Total £000	Highest paid director £000	Other directors £000	Total £000
Remuneration	2,080	2,754	4,834	2,209	2,733	4,942
Gains made on share options	1,079	714	1,793	1,734	1,644	3,378
Company contributions to pension schemes	–	–	–	–	–	–
	3,159	3,468	6,627	3,943	4,377	8,320

No Director accrued any retirement benefits in the year (2018: nil).

SUBSIDIARIES

As at 31 December 2019, the companies listed below and on the following pages are indirectly held by Rolls-Royce Holdings plc except Rolls-Royce Group Limited[#] which is 100% directly owned by Rolls-Royce Holdings plc. The financial year end of each company is 31 December unless otherwise indicated.

Company name	Address	Class of shares	% of class held
Aeromaritime America, Inc.	M&H Agent Services, Inc., 1850 North Central Avenue, Suite 2100, Phoenix, Arizona 85004, United States	Common	100
Aeromaritime Mediterranean Limited	7 Industrial Estate, Hal Far, Birzebbuga, BBG 3000, Malta	Ordinary	100
Aerospace Transmission Technologies GmbH **	Adelheidstrasse 40, D-88046, Friedrichshafen, Germany	Capital Stock	50
Amalgamated Power Engineering Limited *	Derby ¹	Deferred Ordinary	100
Bergen Engines AS	Hordvikneset 125, N-5108, Hordvik, Bergen 1201, Norway	Ordinary	100
Bergen Engines Bangladesh Private Limited	Green Grandeur, 6th Floor, Plot no.58 E, Kamal Ataturk Avenue Banani, C/A Dhaka, 1213, Bangladesh	Ordinary	100
Bergen Engines BV	Werfdijk 2, 3195HV Pernis, Rotterdam, Netherlands	Ordinary	100
Bergen Engines Denmark A/S	Østre Havnepromenade 34 9000 Ålborg, Denmark	Ordinary	100
Bergen Engines India Private Limited ³	52-b, 2nd Floor, Okhla Industrial Estate, Phase III, New Delhi 110020, India	Ordinary	100
Bergen Engines Limited	Derby ¹	Ordinary	100
Bergen Engines PropertyCo AS	Hordvikneset 125, N-5108, Hordvik, Bergen 1201, Norway	Ordinary	100
Bergen Engines S.L.	Calle Dinamarca s/n (esquina Calle Alemania), Poligono Industrial de Constanti, 43120 Constanti, Tarragona, Spain	Social Participation	100
Bergen Engines S.r.l.	Via Castel Morrone 13, 16161, Genoa, Italy	Social Capital	100
Bristol Siddeley Engines Limited *	Derby ¹	Ordinary	100
Brown Brothers & Company Limited	Taxiway, Hillend Industrial Estate, Dalgety Bay, Dunfermline, Fife, KY11 9JT, Scotland	Ordinary	100
C.A. Parsons & Company Limited *	Derby ¹	Ordinary	100
Data Systems & Solutions, LLC ⁴	Wilmington ²	Partnership (no equity)	100
Derby Specialist Fabrications Limited *	Derby ¹	Ordinary	100
Europea Microfuzioni Aerospaziali S.p.A.	Zona Industriale AS1, 83040 Morra de Sanctis, Avellino, Italy	Ordinary	100
Heaton Power Limited *	Derby ¹	Ordinary	100
Industria de Tuberías Aeronáuticas México S.A. de C.V.	Acceso IV, No.6B, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Class A	100
Industria de Tuberías Aeronáuticas S.A.U.	Pabellón Industrial, Torrelarrgoiti, Parcela 5H, Naves 7 a 10, Zamudia, Vizcaya, Spain	Ordinary	100
Industria de Turbo Propulsores S.A.	Parque Tecnológico Edificio 300, 48170 Zamudio, Vizcaya, Spain	Ordinary	100
ITP Engines UK Limited	The Whittle Estate, Cambridge Road, Whetstone, Leicester, LE8 6LH, England	Ordinary	100
ITP Externals India Private Ltd	Plot 60/A, IDA Gandhi Nagar, Hyderabad, 500037, India	Ordinary	100
ITP Externals S.L.U.	Pabellón Industrial, Polígono Ugaldeguren I, PIIIA, Pab 1-2 Zamudio, Vizcaya, Spain	Ordinary	100
ITP Ingeniería y Fabricación S.A. de C.V.	Acceso IV, No.6D, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Class A Class B	100 100
ITP México Fabricación S.A. de C.V.	Acceso IV, No.6, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Class A	100
ITP México S.A. de C.V.	Acceso IV, No.6, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Fixed capital B Variable capital B	100 100
ITP Next Generation Turbines S.L.U.	Parque Tecnológico Edificio 300, 48170 Zamudio, Vizcaya, Spain	Ordinary	100
John Thompson Cochran Limited *	Taxiway, Hillend Industrial Estate, Dalgety Bay, Dunfermline, Fife, KY11 9JT, Scotland	6% Cumulative Preference Ordinary	100 100
Kamewa AB * (in liquidation)	Box 1010, S-68129, Kristinehamn, Sweden	Ordinary	100
Kamewa Holding AB * (in liquidation)	Box 1010, S-68129, Kristinehamn, Sweden	Ordinary	100

[#] Re-registered as a private company on 5 December 2019.

* Dormant entity.

** Though the interest held is 50%, the Company controls the entity (see note 1 accounting policies) and, as a result, consolidates the entity and records a non-controlling interest.

¹ Moor Lane, Derby, DE24 8BJ, England.

² Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, United States.

³ Reporting year end is 31 March.

⁴ Sold to Westinghouse with effect from 31 January 2020 (see page 178).

Company name	Address	Class of shares	% of class held
Karl Maybach-Hilfe GmbH	Maybachplatz 1, 88045, Friedrichshafen, Germany	Capital Stock	100
MTU Africa (Proprietary) Limited	36 Marconi Street, Montague Gardens, Cape Town, 7441, South Africa	Capital Stock	100
MTU America Inc.	Wilmington ²	Ordinary	100
MTU Asia PTE Limited	10 Tukang Innovation Drive, Singapore 618302	Ordinary	100
MTU Benelux B.V.	Merwedestraat 86, 3313 CS, Dordrecht, Netherlands	Ordinary	100
MTU China Company Limited	Room 1803 18/F Ascendas Plaza, No.333 Tian Yao Qiao Road, Xuhai District, Shanghai, 200030, China	Ordinary	100
MTU do Brasil Limitada	Via Anhanguera, KM 29203, 05276-000 Sao Paulo – SP, Brazil	Ordinary	100
MTU Engineering (Suzhou) Company Limited	9 Long Yun Road, Suzhou Industrial Park, Suzhou 215024, Jiang Su, China	Ordinary	100
MTU France S.A.S.	Immeuble Colorado, 8/10 rue de Rosa Luxembourg-Parc des Bellevues 95610, Erangy-sur-Oise, France	Ordinary	100
MTU Friedrichshafen GmbH	Maybachplatz 1, 88045, Friedrichshafen, Germany	Capital Stock	100
MTU Hong Kong Limited	Room 1006, 10/F, Hang Seng Tsimshatsui Building, 18 Carnarvon Road, Tsimshatsui, Kowloon, Hong Kong	Ordinary	100
MTU Ibérica Propulsión y Energía S.L.	Calle Copérnico 26–28, 28823 Coslada, Madrid, Spain	Ordinary	100
MTU India Private Limited ³	6th Floor, RMZ Galleria, S/Y No. 144 Bengaluru, Bangalore, Kamataka 560,064, India	Ordinary	100
MTU Israel Limited	4 Ha'Aron Street, South Building, Third Floor, 4059300 Kfar Neter, Israel	Ordinary	100
MTU Italia S.r.l.	Via Aurelia Nord, 328, 19021 Arcola (SP), Italy	Capital Stock	100
MTU Japan Co. Limited	Resorttrust Building 4-14-3, Nishitenma Kita-ku, Osaka 530-0047, Japan	Ordinary	100
MTU Korea Limited	22nd Floor, Olive Tower, 41 Sejongdaero 9 gil, Junggu, 100-737 Seoul, Republic of Korea	Ordinary	100
MTU Middle East FZE	S3B5SR06, Jebel Ali Free Zone, South P.O. Box 61141, Dubai, United Arab Emirates	Ordinary	100
MTU Motor Türbin Sanayi ve Ticaret. A.Ş.	Hatira Sokak, No. 5, Ömerli Mahellesi, 34555 Arnavutköy, Istanbul, Turkey	Ordinary	100
MTU Onsite Energy GmbH	Dasinger Strasse 11, 86165, Augsburg, Germany	Capital Stock	100
MTU Onsite Energy Systems GmbH	Rotthofer Strasse 8, 94099 Ruhstorf a.d. Rott, Germany	Capital Stock	100
MTU Polska Sp. z o.o.	Ul. Ślaska, Nr 9. Raum, Ort: Stargard Szczeciński, Plz: 73-110, Poland	Ordinary	100
MTU Power Systems Sdn. Bhd	Level 10 Menara LGB, 1 Jalan Wan Kadir Taman Tun Dr Ismail, 6000 Kuala Lumpur, Malaysia	Ordinary	100
MTU Reman Technologies GmbH	Friedrich-List-Strasse 8, 39122 Magdeburg, Germany	Capital Stock	100
MTU Rus Limited Liability Company	Shabolovka Street 2, 119049, Moscow, Russian Federation	Ordinary	100
MTU South Africa (Proprietary) Limited	36 Marconi Street, Montague Gardens, Cape Town, 7441, South Africa	Ordinary	100
MTU UK Limited	Derby ¹	Ordinary	100
NEI International Combustion Limited *	Derby ¹	Ordinary	100
NEI Mining Equipment Limited *	Derby ¹	Ordinary	100
NEI Nuclear Systems Limited *	Derby ¹	Ordinary	100
NEI Parsons Limited *	Derby ¹	Ordinary	100
NEI Peebles Limited *	Derby ¹	Ordinary	100
NEI Power Projects Limited *	Derby ¹	Ordinary	100
Nightingale Insurance Limited	Maison Trinity, Trinity Square, St. Peter Port, GY1 4AT, Guernsey	Ordinary	100
PKMJ Technical Services, Inc. ⁴	Wilmington ²	Ordinary	100
Power Jets (Research and Development) Limited *	The Whittle Estate, Cambridge Road, Whetstone, Leicester, LE8 6LH, England	Ordinary	100
Powerfield Limited	Derby ¹	Ordinary	100
Precision Casting Bilbao S.A.U.	Calle El Barracón 1, Baracaldo, Vizcaya, 48910 Spain	Ordinary	100

* Dormant entity.

¹ Moor Lane, Derby, DE24 8BJ, England.² Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, United States.³ Reporting year end is 31 March.⁴ Sold to Westinghouse with effect from 31 January 2020 (see page 178).

Company name	Address	Class of shares	% of class held
PT MTU Indonesia	Secure Building Blok B, Jl. Raya Protokol Halim, Perdanakusuma, Jakarta, 13610, Indonesia	Ordinary	100
PT Rolls-Royce	Secure Building Blok B, Jl. Raya Protokol Halim, Perdanakusuma, Jakarta, 13610, Indonesia	Ordinary	100
Rolls-Royce (Ireland) Unlimited Company *	Ulster International Finance, 1st Floor IFSC House, IFSC, Dublin 1, Ireland	Ordinary	100
Rolls-Royce (Thailand) Limited	4, 4.5 Level 12, Suite 1299, Rajdamri Road, Pathumwan, Bangkok, 10330, Thailand	Ordinary	100
Rolls-Royce Aero Engine Services Limited *	Derby ¹	Ordinary	100
Rolls-Royce Australia Pty Limited	Suite 102, 2-4 Lyonpark Road, Macquarie Park, NSW 2113, Australia	Ordinary	100
Rolls-Royce Australia Services Pty Limited	Suite 102, 2-4 Lyonpark Road, Macquarie Park, NSW 2113, Australia	Ordinary	100
Rolls-Royce Brasil Limitada	Rua drive Cincinato Braga No. 47, Planalto District, São Bernardo do Campo, SP, 09890-900, Brazil	Quotas	100
Rolls-Royce Canada Limited	9500 Côte de Liesse, Lachine, Québec H8T 1A2, Canada	Common Stock	100
Rolls-Royce Chile SpA	Alcantra 200 office 601, Piso 6, C.O. 7550159 Las Condes, Santiago, Chile	Ordinary	100
Rolls-Royce China Holding Limited	305-306 Indigo Building 1, 20 Jiuxianqiao Road, Beijing, 100016, China	Registered Capital	100
Rolls-Royce Civil Nuclear Canada Limited ⁴	597 The Queensway, Peterborough Ontario K9J 7J6, Canada	Common Shares	100
Rolls-Royce Civil Nuclear S.A.S.	23 chemin du Vieux Chêne, 38240, Meylan, France	Ordinary	100
Rolls-Royce Commercial Aero Engines Limited *	Derby ¹	Ordinary	100
Rolls-Royce Control Systems Holdings Co	Wilmington ²	Common Stock	100
Rolls-Royce Controls and Data Services (NZ) Limited	c/o Deloitte, 80 Queen Street, Auckland Central, Auckland 1010, New Zealand	Ordinary	100
Rolls-Royce Controls and Data Services (UK) Limited	Derby ¹	Ordinary	100
Rolls-Royce Controls and Data Services, Inc. ⁵	Wilmington ²	Common Stock	100
Rolls-Royce Controls and Data Services Limited*	Derby ¹	Ordinary	100
Rolls-Royce Corporation	Wilmington ²	Common Stock	100
Rolls-Royce Crosspointe LLC	Wilmington ²	Partnership (no equity)	100
Rolls-Royce Defense Products and Solutions, Inc.	Wilmington ²	Common Stock	100
Rolls-Royce Defense Services, Inc.	Wilmington ²	Common Stock	100
Rolls-Royce Deutschland Ltd & Co KG	Eschenweg 11, 15827 Blankenfelde-Mahlow, Germany	Capital Stock	100
Rolls-Royce Electrical Norway AS	Jarleveien 8A, 7041, Trondheim 500, Norway	Ordinary	100
Rolls-Royce Energy Angola, Limitada *	Rua Rei Katyavala, Edificio Rei Katyavala, Entrada B, Piso 8, Luanda, Angola	Quota	100
Rolls-Royce Energy Systems Inc.	Wilmington ²	Common Stock	100
Rolls-Royce Engine Services Holdings Co.	Wilmington ²	Common Stock	100
Rolls-Royce Engine Services Limitada Inc. (in liquidation)	Bldg. 06 Berthaphil Compound, Jose Abad Santos Avenue, Clark Special Economic Zone, Clark, Pampanga, Philippines	Capital Stock	100
Rolls-Royce Erste Beteiligungs GmbH	Eschenweg 11, 15827 Blankenfelde-Mahlow, Germany	Capital Stock	100
Rolls-Royce Finance Company Limited	Derby ¹	Deferred Ordinary	100
Rolls-Royce Finance Holdings Co.	Wilmington ²	Common Stock	100
Rolls-Royce Fuel Cell Systems Limited	Derby ¹	Ordinary	100
Rolls-Royce General Partner Limited *	Derby ¹	Ordinary	100
Rolls-Royce General Partner (Ireland) Limited	29 Earlshot Terrace, Dublin 2, Ireland	Ordinary	100

* Dormant entity.

¹ Moor Lane, Derby, DE24 8BJ, England.² Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, United States.⁴ Sold to Westinghouse with effect from 31 January 2020 (see page 178).⁵ Sold to Valsoft Corporation Inc on 3 February 2020.

Company name	Address	Class of shares	% of class held
Rolls-Royce Group Limited [#]	Kings Place, 90 York Way, London, N1 9FX, England	Ordinary	100
		Ordinary A	100
Rolls-Royce High Temperature Composites, Inc.	Corporation Service Company, 2710 Gateway Oaks Drive, Suite 150N, Sacramento, California 95833, United States	Ordinary	100
Rolls-Royce Holdings Canada Inc.	9500 Côte de Liesse, Lachine, Québec H8T 1A2, Canada	Common C	100
Rolls-Royce Hungary Kft	Gizella U. 51-57, 1143 Budapest, Hungary	Cash shares	100
Rolls-Royce India Limited ^{*,3}	Derby ¹	Ordinary	100
Rolls-Royce India Private Limited ³	Birla Tower West, 2nd Floor 25, Barakhamba Road, New Delhi, 110001, India	Equity	100
Rolls-Royce Industrial & Marine Power Limited [*]	Derby ¹	Ordinary	100
Rolls-Royce Industrial Power (India) Limited ^{*,3}	Derby ¹	Ordinary	100
Rolls-Royce Industrial Power Engineering (Overseas Projects) Limited	Derby ¹	Ordinary	100
Rolls-Royce Industries Limited [*]	Derby ¹	Ordinary	100
Rolls-Royce International Limited	Derby ¹	Ordinary	100
Rolls-Royce International s.r.o.	Pobřežní 620/3, Postal code 186 00, Karlín - Prague 8, Czech Republic	Ordinary	100
Rolls-Royce Japan Co., Limited	31st Floor, Kasumigaseki Building, 3-2-5 Kasumigaseki, Chiyoda-Ku, Tokyo, 100-6031, Japan	Ordinary	100
Rolls-Royce Leasing Limited	Derby ¹	Ordinary	100
Rolls-Royce Malaysia Sdn. Bhd.	C-2-3A TTDI Plaza, Jalan Wan Kadir 3, Taman Tun Dr Ismail, 6000 Kuala Lumpur, Malaysia	Ordinary	100
Rolls-Royce Marine North America, Inc.	Wilmington ²	Common Stock	100
Rolls-Royce Mexico Administration S. de R.L. de C.V.	Boulevard Adolfo Ruiz Cortinez 3642-403, Fracc Costa de Oro, Veracruz CP 94299 6, Mexico	Ordinary	100
Rolls-Royce Mexico S. de R.L. de C.V.	Boulevard Adolfo Ruiz Cortinez 3642-403, Fracc Costa de Oro, Veracruz CP 94299 6, Mexico	Ordinary	100
Rolls-Royce Military Aero Engines Limited ^{*,3}	Derby ¹	Ordinary	100
Rolls-Royce New Zealand Limited	c/o Deloitte, 80 Queen Street, Auckland Central, Auckland 1010, New Zealand	Ordinary	100
Rolls-Royce North America (USA) Holdings Co.	Wilmington ²	Common Stock	100
Rolls-Royce North America Holdings, Inc.	Wilmington ²	Common Stock	100
Rolls-Royce North America, Inc.	Wilmington ²	Common Stock	100
Rolls-Royce North America Ventures, Inc.	Wilmington ²	Common Stock	100
Rolls-Royce North American Technologies, Inc.	Wilmington ²	Common Stock	100
Rolls-Royce Nuclear Field Services France S.A.S. ⁴	ZA Notre-Dame, 84430, Mondragon, France	Ordinary	100
Rolls-Royce Nuclear Field Services, Inc. ⁴	Corporation Service Company, 80 State Street, Albany, New York 12207, United States	Common Stock	100
Rolls-Royce Oman LLC	Bait Al Reem, Business Office #131, Building No 81, Way No 3409, Block No 234, Al Thaqafa Street, Al Khuwair, PO Box 20, Postal Code 103, Oman	Ordinary	100
Rolls-Royce Operations (India) Private Limited	Birla Tower West, 2nd Floor, 25 Barakhamba Road, New Delhi, 110001, India	Ordinary	100
Rolls-Royce Overseas Holdings Limited	Derby ¹	Ordinary	100
		Ordinary A	100
Rolls-Royce Overseas Investments Limited	Derby ¹	Ordinary	100
Rolls-Royce Placements Limited	Derby ¹	Ordinary	100
Rolls-Royce plc	Kings Place, 90 York Way, London, N1 9FX, England	Ordinary	100
Rolls-Royce Power Engineering plc	Derby ¹	Ordinary	100
Rolls-Royce Power Systems AG	Maybachplatz 1, 88045, Friedrichshafen, Germany	Ordinary	100

[#] Re-registered as a private company on 5 December 2019.^{*} Dormant entity.¹ Moor Lane, Derby, DE24 8BJ, England.² Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, United States.³ Reporting year end is 31 March.⁴ Sold to Westinghouse with effect from 31 January 2020 (see page 178).

Company name	Address	Class of shares	% of class held
Rolls-Royce Saudi Arabia Limited	PO Box 88545, Riyadh, 11672, Saudi Arabia	Cash shares	100
Rolls-Royce Retirement Savings Trust Limited ^{*3}	Derby ¹	Ordinary	100
Rolls-Royce Singapore Pte. Limited	6 Shenton Way, #33-00 OUE, Downtown Singapore 068809, Singapore	Ordinary	100
Rolls-Royce Sp z.o.o.	Opolska 100 31-323, Krakow, Poland	Ordinary	100
Rolls-Royce Submarines Limited	Atlantic House, Raynesway, Derby, DE21 7BE, Derbyshire, England	Ordinary	100
Rolls-Royce Technical Support Sarl	Centreda I, Avenue Didier Daurat, 31700 Blagnac, Toulouse, France	Ordinary	100
Rolls-Royce Total Care Services Limited	Derby ¹	Ordinary	100
Rolls-Royce Turkey Power Solutions Industry and Trade Limited	Levazim Mahellesi, Koru Sokagi, Zorlu Center, No. 2 Teras Evler T2 D:204, Zincirlikuyu, Besiktas, Istanbul 34340, Turkey	Cash shares	100
Rolls-Royce UK Pension Fund Trustees Limited [*]	Derby ¹	Ordinary	100
Rolls-Royce Zweite Beteiligungs GmbH	Eschenweg 11, 15827 Blankenfelde-Mahlow, Germany	Capital Stock	100
Ross Ceramics Limited	Derby ¹	Ordinary	100
Sharing in Growth UK Limited ^{**}	Derby ¹	Limited by guarantee	100
Spare IPG 20 Limited [*]	Derby ¹	Ordinary	100
Spare IPG 21 Limited [*]	Derby ¹	Ordinary	100
Spare IPG 24 Limited [*]	Derby ¹	Ordinary	100
Spare IPG 32 Limited [*]	Derby ¹	7.25% Cumulative Preference Ordinary	100
Spare IPG 4 Limited [*]	Derby ¹	Ordinary	100
The Bushing Company Limited [*]	Derby ¹	Ordinary	100
Timec 1487 Limited [*]	Derby ¹	Ordinary	100
Trigno Energy S.R.L.	Zona Industriale, San Salvo, 66050, Italy	Ordinary	100
Turbine Surface Technologies Limited ^{**}	Derby ¹	Ordinary A Ordinary B	Nil 100
Turborreactores S.A. de C.V.	Acceso IV, No.6C, Zona Industrial Benito Juárez, Querétaro, 76120, Mexico	Class A Class B	100 100
Vessel Lifter, Inc. [*]	Corporation Service Company, 1201 Hays Street, Tallahassee, Florida 32301, United States	Common Stock	100
Vinters Defence Systems Limited [*]	Derby ¹	Ordinary	100
Vinters Engineering Limited	Derby ¹	Ordinary	100
Vinters International Limited	Derby ¹	Ordinary	100
Vinters Limited	Derby ¹	Ordinary	100
Vinters-Armstrongs (Engineers) Limited [*]	Derby ¹	Ordinary	100
Vinters-Armstrongs Limited [*]	Derby ¹	Ordinary B	100

^{*} Dormant entity.

^{**}The entity is not included in the consolidation as Rolls-Royce plc does not have a beneficial interest in the net assets of the entity.

¹ Moor Lane, Derby, DE24 8BJ, England.

³ Reporting year end is 31 March.

JOINT VENTURES AND ASSOCIATES

Company name	Address	Class of shares	% of class held	Group interest held %
Aero Gearbox International SAS **	18 Boulevard Louis Sequin, 92700 Colombes, France	Ordinary	50	50
Airtanker Holdings Limited	Airtanker Hub, RAF Brize Norton, Carterton, Oxfordshire, OX18 3LX, England	Ordinary	20	20
Airtanker Services Limited	Airtanker Hub, RAF Brize Norton, Carterton, Oxfordshire, OX18 3LX, England	Ordinary	22	22
Alpha Leasing (US) (No.2) LLC	Wilmington ²	Partnership (no equity held)	–	50
Alpha Leasing (US) (No.4) LLC	Wilmington ²	Partnership (no equity held)	–	50
Alpha Leasing (US) (No.5) LLC	Wilmington ²	Partnership (no equity held)	–	50
Alpha Leasing (US) (No.6) LLC	Wilmington ²	Partnership (no equity held)	–	50
Alpha Leasing (US) (No.7) LLC	Wilmington ²	Partnership (no equity held)	–	50
Alpha Leasing (US) (No.8) LLC	Wilmington ²	Partnership (no equity held)	–	50
Alpha Leasing (US) LLC	Wilmington ²	Partnership (no equity held)	–	50
Alpha Partners Leasing Limited	1 Brewer's Green, London, SW1H 0RH, England	Ordinary A	100	50
CFMS Limited	43 Queen Street, Bristol, BS1 4QP, England	Limited by guarantee	–	50
Clarke Chapman Portia Port Services Limited	Maritime Centre, Port of Liverpool, Liverpool, L21 1LA, England	Ordinary A	100	50
Consorcio Español para el Desarrollo Industrial del Helicóptero de Ataque Tigre, A.I.E.	Avda. de Aragón 404, 28022 Madrid, Spain	Partnership (no equity held)	–	50
Consorcio Español para el Desarrollo Industrial del Programa Eurofighter, A.I.E.	Paseo de John Lennon, s/n, edificio T22, 2ª planta, Getafe, Madrid, Spain	Partnership (no equity held)	–	50
Egypt Aero Management Services (in liquidation)	EgyptAir Engine Workshop, Cairo International Airport, Cairo, Egypt	Ordinary	50	50
EPI Europrop International GmbH	Dachauer Strasse 655, 80995, Munich, Germany	Capital Stock	44	44
EPIX Power Systems, LLC	The Corporation Trust Company, 1209 Orange Street, Wilmington, Delaware 19801, United States	Partnership (no equity held)	–	50
Eurojet Turbo GmbH	Lilienthalstrasse 2b, 85399 Halbergmoos, Germany	Capital Stock	46	46
Force MTU Power Systems Private Limited	Mumbai Pune Road, Akurdi, Pune, Maharashtra 411035, India	Capital Stock	49	49
Genistics Holdings Limited	Derby ¹	Ordinary A	100	50
Global Aerospace Centre for Icing and Environmental Research Inc. **	1000 Marie-Victorin Boulevard, Longueuil Québec J4G 1A1, Canada	Ordinary	50	50
Hong Kong Aero Engine Services Limited	33rd Floor, One Pacific Place, 88 Queensway, Hong Kong	Ordinary	50	50
International Aerospace Manufacturing Private Limited ** ³	Survey No. 3 Kempapura Village, Varthur Hobli, Bangalore, KA 560037, India	Ordinary	50	50
Light Helicopter Turbine Engine Company (unincorporated partnership)	Suite 119, 9238 Madison Boulevard, Madison, Alabama 35758, United States	Partnership (no equity held)	–	50
MEST Co., Limited	97 Bukjeonggongdan 2-gil, Yangsan-si, Gyeongsangnam-do, 50571, Republic of Korea	Normal	46.8	46.8
Metlase Limited	Unipart House, Garsington Road, Cowley, Oxford, OX4 2PG, England	Ordinary B	100	20
MTU Power Systems Sdn. Bhd.	Level 10 Menara LGB, 1 Jalan Wan Kadir Taman Tun Dr Ismail 6000 Kuala Lumpur, Malaysia	Ordinary A	100	49
MTU Turbomeca Rolls-Royce GmbH	Am Söldnermoos 17, 85399 Hallbergmoos, Germany	Capital Stock	33.3	33.3

** These entities are accounted for as joint operations (see note 1 accounting policies).

¹ Moor Lane, Derby, Derbyshire DE24 8BJ, England.

² Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, United States.

³ Reporting year end is 31 March.

Company name	Address	Class of shares	% of class held	Group interest held %
MTU Turbomeca Rolls-Royce ITP GmbH	Am Söldnermoos 17, 85399 Hallbergmoos, Germany	Capital Stock	50	50
MTU Yuchai Power Company Limited	No 7 Danan Road, Yuzhou, Yulin, Guangxi, China, 537005, China	Capital Stock	50	50
N3 Engine Overhaul Services GmbH & Co KG	Gerhard-Höltje-Strasse 1, D-99310, Arnstadt, Germany	Capital Stock	50	50
N3 Engine Overhaul Services Verwaltungsgesellschaft MbH	Gerhard-Höltje-Strasse 1, D-99310, Arnstadt, Germany	Capital Stock	50	50
Qinous GmbH	Villa Rathenau, Wilhelminenhofstrasse 75, 12459 Berlin, Germany	Preference	22	22
Rolls Laval Heat Exchangers Limited *	Derby ¹	Ordinary	50	50
Rolls-Royce & Partners Finance (US) (No 2) LLC	Wilmington ²	Partnership (no equity held)	–	50
Rolls-Royce & Partners Finance (US) LLC	Wilmington ²	Partnership (no equity held)	–	50
SAFYRR Propulsion Limited	Derby ¹	B Shares	100	50
Shanxi North MTU Diesel Co. Limited	No.97 Daqing West Road, Datong City, Shanxi Province, China	Ordinary	49	49
Singapore Aero Engine Services Private Limited	11 Calshot Road, 509932, Singapore	Ordinary	50	50
Taec Ucak Motor Sanayi AS	Buyukdere Caddesi, Prof. Ahmet Kemal Aru, Sokagi Kaleseramik, Binasi Levent No. 4, Besiktas, Istanbul, Turkey	Cash Shares	49	49
Techjet Aerofoils Limited **	Tefen Industrial Zone, PO Box 16, 24959, Israel	Ordinary A Ordinary B	50 50	50
Texas Aero Engine Services LLC	The Corporation Trust Company, 1209, Orange Street, Wilmington, Delaware 19801, United States	Partnership (no equity held)	–	50
TRT Limited	Derby ¹	Ordinary B	100	49.9
Turbo-Union GmbH	Lilienthalstrasse 2b, 85399 Hallbergmoos, Munich, Germany	Capital Stock	40	40
UK Nuclear Restoration Limited *	Booths Park, Chelford Road, Knutsford, Cheshire, WA16 8QZ, England	Ordinary	20	20
Xian XR Aero Components Co., Limited **	Xujiawan, Beijiao, Po Box 13, Xian 710021, Shaanxi, China	Ordinary	49	49

* Dormant company.

** These entities are accounted for as joint operations (see note 1 accounting policies).

¹ Moor Lane, Derby, DE24 8BJ, England.² Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808, United States.