11 Goodwill continued

Impairment testing

Goodwill values have been tested for impairment by comparing them against the 'value in use' in perpetuity of the relevant CGU group. The 'value in use' calculations were based on projected cash flows, derived from the latest budgets prepared by management and strategic plans approved by the Board, discounted at CGU group specific, risk adjusted, discount rates to calculate their net present value.

Key assumptions used in 'value in use' calculations

The calculation of 'value in use' is most sensitive to the following assumptions:

- CGU specific operating assumptions that are reflected in the budget period for the financial year to March 2024;
- Discount rates; and
- Growth rates used to extrapolate risk adjusted cash flows beyond the forecast period.

CGU specific operating assumptions applicable to the forecasted cash flows for the year to March 2024 relate to revenue forecasts, expected project outcomes, forecast operating margins and fixed asset and working capital requirements. The relative value ascribed to each assumption will vary between CGUs as the forecasts are built up from the underlying operating companies within each CGU group. Consideration has been given to inflation and future cash flows reflect expectations for cost and price increases.

A short-term growth rate is applied to the March 2024 budget to derive the cash flows arising in the years to March 2025 and March 2026 based on the average growth rate calculated in the relevant sector strategic plan. A long-term rate is applied to these values for the year to March 2027 and onwards capped at the weighted average GDP growth rates of the markets into which that CGU group sells. Each year the results of ongoing climate and emerging risk reviews are considered and any potential impact of climate change is included in the long-term growth rates where relevant. For example, since April 2021, where any CGU group has exposure to customers in the oil and gas industry a reduction to the long-term growth rate has been applied. In the year to 31 March 2023, no additional changes were made to the long-term growth rates as a result of these reviews. Immaterial additional capital expenditure to meet the Group's emission targets and physical risks have also been factored into future cash flow estimates. No further significant adjustments to future cash flows from climate change are expected and therefore have not been recognised in the calculations.

Discount rates are based on estimations of the assumptions that market participants operating in similar sectors to Halma would make, using the Group's economic profile as a starting point and adjusting appropriately. The methodology for calculating the discount rate has not changed year on year and the market economic data sources are consistent with prior years. The Group has calculated the discount rate to be 11.43% (2022: 9.22%). Consistent with previous years this is a notional discount rate, calculated using externally published global market assumptions. The discount rate, which is pre-tax and based on short-term variables, may differ from the Weighted Average Cost of Capital (WACC). Discount rates are adjusted for economic risks that are not already captured in the specific operating assumptions for each CGU group. This results in the impairment testing using discount rates ranging from 10.58% to 13.96% (2022: 8.33% to 11.85%) across the CGU groups.

Significant CGU groups

CGU groups to which 10% or more of the total goodwill balance is allocated are deemed to be significant. In addition to the operating assumptions, the assumptions used to determine 'value in use' for these CGU groups are:

	Risk adjusted discount rate		Short-term growth rates		Long-term growth rates	
	31 March 2023	31 March 2022	**31 March 2023**	31 March 2022	**31 March 2023**	31 March 2022
Fire	**13.96%**	11.73%	**11.68%**	10.06%	**3.61%**	2.49%
Healthcare Assessment	**13.94%**	11.92%	**8.17%**	9.96%	**3.79%**	2.18%
Therapeutic Solutions	**12.98%**	10.77%	**8.17%**	9.96%	**3.23%**	2.59%

Sensitivity to changes in assumptions

The Directors believe that no reasonably possible change in any of the above key assumptions would cause the carrying value of any CGU group to exceed its recoverable amount.