



## **2018 Irish Statutory Accounts**



# **PENTAIR PUBLIC LIMITED COMPANY**

## **Directors' Report and Consolidated Financial Statements**

**For the Financial Year Ended December 31, 2018**

Company Registration Number: 536025

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## DIRECTORS' REPORT

### For the Year Ended December 31, 2018

The directors present their report, audited consolidated financial statements for the financial year ended December 31, 2018, which are set out on pages 1 to 78, and audited parent company financial statements for the financial year ended December 31, 2018, which are set out on pages 79 to 87.

Pentair plc, is a public limited company, incorporated in the Republic of Ireland under the Companies Act 2014.

The directors have elected to prepare the consolidated financial statements of Pentair plc in accordance with Section 279 of the Companies Act 2014, which provides that a true and fair view of the assets and liabilities, financial position and profit or loss may be given by preparing the financial statements in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") to the extent that the use of those principles in the preparation of the financial statements does not contravene any provision of Part 6 of the Companies Act 2014.

The directors have elected to prepare the Pentair plc parent company financial statements in accordance with generally accepted accounting practice in Ireland ("Irish GAAP"), comprising the Financial Reporting Standards 102 ("FRS 102"), the Financial Reporting Framework applicable in the U.K. and Republic of Ireland ("relevant financial reporting framework"), together with the Companies Act 2014.

#### ***Basis of presentation***

The accompanying financial statements reflect the consolidated operations of the parent company (Pentair plc, or the "Company") and its subsidiaries (Pentair plc and all its subsidiaries, hereinafter referred to as "Pentair," "we," "us," "our," or the "Group"). We report our results on a calendar year basis.

#### ***History and development***

On April 28, 2017, we completed the sale of the Valves & Controls business to Emerson Electric Co. for \$3.15 billion in cash. The sale resulted in a gain of \$181.1 million, net of tax. The results of the Valves & Controls business have been presented as discontinued operations. The Valves & Controls business was previously disclosed as a stand-alone reporting segment.

On April 30, 2018, Pentair completed the separation of its Electrical business from the rest of Pentair (the "Separation") by means of a dividend in specie of the Electrical business, which was effected by the transfer of the Electrical business from Pentair to nVent Electric plc ("nVent") and the issuance by nVent of ordinary shares directly to Pentair shareholders (the "Distribution"). On May 1, 2018, following the Separation and Distribution, nVent became an independent publicly traded company, trading on the New York Stock Exchange under the symbol "NVT." The Company did not retain any equity interest in nVent. nVent's historical financial results are reflected in the Group's consolidated financial statements as a discontinued operation. Refer to Note 2 for further discussion.

In connection with the Distribution of nVent, the Company and nVent entered into several agreements covering administrative and tax matters to provide or obtain services on a transitional basis, as needed, for varying periods after the Distribution. The administrative agreements cover various services such as information technology, human resources and finance. The Company expects all services to be substantially complete within one year after the Distribution.

The directors do not expect any material changes in the business in the upcoming year.

Our registered address is 10 Earlsfort Terrace, Dublin 2, Ireland. Our registered principal office is located at Regal House, 70 London Road, Twickenham, London, TW13QS United Kingdom ("U.K."). Our management office in the United States ("U.S.") is located at 5500 Wayzata Boulevard, Suite 900, Minneapolis, Minnesota.

#### ***Principal activities***

At Pentair plc, we believe the health of our world depends on reliable access to clean water. We deliver a comprehensive range of smart, sustainable water solutions to homes, business and industry around the world. Our industry leading and proven portfolio of solutions enables our customers to access clean, safe water. Whether it's improving, moving or enjoying water, we help manage the world's most precious resource. Smart, Sustainable Water Solutions. For Life.

Pentair plc is comprised of three reportable business segments: Aquatic Systems, Filtration Solutions and Flow Technologies.

### ***Pentair strategy***

Our vision is to be the leading residential and commercial water treatment company. As a pure play water company, we are:

- Focused on strategies to advance pool growth and accelerate residential and commercial water treatment;
- Accelerated by innovation and digital transformation; and
- Grounded in Win Right values and utilizing the Pentair Integrated Management System (“PIMS”) consisting of lean enterprise, growth and talent management to drive sustained and consistent performance.

### ***Key performance indicators***

Management evaluates performance based on turnover growth and segment income and utilizes free cash flow to assess the Group’s cash flow performance. The segment income and free cash flow measures discussed below are considered “non-U.S. GAAP” financial measures and should be considered supplemental to and not a substitute for financial information prepared in accordance with U.S. GAAP.

Turnover from continuing operations increased by \$119.4 million, or 4.2%, from \$2,845.7 million in 2017 to \$2,965.1 million in 2018. Segment income increased by \$40.3 million, or 8.1%, from \$496.5 million in 2017 to \$536.8 million in 2018. Segment income represents equity income of unconsolidated subsidiaries and operating profit from continuing operations exclusive of intangible asset amortization, certain acquisition related expenses, costs of restructuring activities, impairments and other unusual non-operating items. Management utilizes this adjusted financial measure to assess the run-rate of its continuing operations against those of prior periods without the distortion of certain unusual, non-recurring or non-operational items.

The below table presents a reconciliation of profit from continuing operations before taxation to segment income:

<i>In millions, except per-share data</i>	<b>Years ended</b>	
	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
Profit from continuing operations before taxation	\$ 379.8	\$ 172.8
Adjustments:		
Restructuring and other	31.8	28.2
Intangible amortization	34.9	36.4
Pension and other post-retirement mark-to-market loss	3.6	8.5
Trade name and other impairment	12.0	15.6
Loss on sale of businesses	7.3	4.2
Loss of early extinguishment of debt	17.1	101.4
Interest expense, net	32.6	87.3
Corporate allocations	11.0	36.7
Deal related costs and expenses	2.0	—
Other expense	4.7	5.4
<b>Segment income</b>	<b>\$ 536.8</b>	<b>\$ 496.5</b>

Free cash flow from continuing operations increased by \$166.9 million, or 68.6%, from \$243.2 million in 2017 to \$410.1 million in 2018. The Group believes free cash flow is an important measure of liquidity because it provides the Group and its investors a measurement of cash generated that is available to pay dividends and repay debt. In addition, free cash flow is used as criterion to measure and pay compensation-based incentives. Free cash flow represents cash flows from operating activities less capital expenditures plus proceeds from the sale of tangible assets. The Group’s measure of free cash flow may not be comparable to similarly titled measures reported by other companies.

The following table is a reconciliation of free cash flow:

<i>In millions</i>	<b>Years ended December 31</b>	
	<b>2018</b>	<b>2017</b>
<b>Free cash flow</b>		
Net cash provided by operating activities of continuing operations	\$ 458.1	\$ 278.6
Capital expenditures	(48.2)	(39.1)
Proceeds from sale of tangible assets	0.2	3.7
<b>Free cash flow from continuing operations</b>	<b>\$ 410.1</b>	<b>\$ 243.2</b>
Net cash provided by (used for) operating activities of discontinued operations	\$ (19.0)	\$ 341.6
Capital expenditures of discontinued operations	(7.4)	(38.6)
Proceeds from sale of tangible assets of discontinued operations	2.3	4.5
<b>Free cash flow</b>	<b>\$ 386.0</b>	<b>\$ 550.7</b>

The Group believes that these non-GAAP financial measures will be useful to investors in order to assess the continuing strength of the Group's underlying operations.

## CONSOLIDATED RESULTS OF OPERATIONS

The consolidated results of continuing operations were as follows:

<i>In millions</i>	<b>Years ended December 31</b>		<b>% / point change</b>
	<b>2018</b>	<b>2017</b>	<b>2018 vs 2017</b>
Turnover	\$ 2,965.1	\$ 2,845.7	4.2%
Cost of sales	1,917.4	1,858.2	3.2%
Gross profit	1,047.7	987.5	6.1%
<i>% of turnover</i>	35.3%	34.7%	0.6pts
Selling, general and administrative	534.3	536.0	(0.3)%
<i>% of turnover</i>	18.0%	18.8%	(0.8)pts
Research and development	76.7	73.2	4.8%
<i>% of turnover</i>	2.6%	2.6%	—pts
Operating profit	436.7	378.3	15.4%
<i>% of turnover</i>	14.7%	13.3%	1.4pts
Loss on sale of businesses	7.3	4.2	N.M.
Loss on early extinguishment of debt	17.1	101.4	N.M.
Net interest expense	32.6	87.3	(62.7)%
Other (income) expense	(0.1)	12.6	N.M.
Profit from continuing operations before taxation	379.8	172.8	N.M.
Taxation	58.1	58.7	(1.0)%
<i>Effective tax rate</i>	15.3%	34.0%	(18.7)pts

N.M. Not Meaningful

### **Turnover**

The components of the turnover from continuing operations change were as follows:

	<b>% Change</b>
Volume	3.6%
Price	1.2
Core growth	4.8
Acquisition (divestiture)	(1.2)
Currency	0.6
Total	4.2%

*The 4.2 percent increase in consolidated turnover in 2018 from 2017 was primarily the result of:*

- core sales increases across all three reportable segments, primarily driven by increased sales in the residential and commercial businesses;
- selective increases in selling prices to mitigate inflationary cost increases; and
- favorable foreign currency effects during the year ended December 31, 2018.

*This increase was partially offset by:*

- sales declines due to the sale of certain businesses during the year ended December 31, 2018.

### **Gross profit**

*The 0.6 percentage point increase in gross profit as a percentage of sales in 2018 from 2017 was primarily the result of:*

- selective increases in selling prices across all three reportable segments to mitigate inflationary cost increases;
- favorable mix in the Filtration Solutions segment; and
- higher contribution margin as a result of savings generated from our PIMS initiatives, including lean and supply management practices.

*This increase was partially offset by:*

- inflationary increases related to raw materials and labor costs.

### **Selling, general and administrative (“SG&A”)**

*The 0.8 percentage point decrease in SG&A expense as a percentage of sales in 2018 from 2017 and was driven by:*

- savings generated from restructuring and other lean initiatives; and
- higher sales resulting in increased leverage.

*This decrease was partially offset by:*

- restructuring costs of \$40.6 million in 2018, compared to \$28.2 million in 2017;
- the reversal of a \$13.3 million indemnification liability in 2017 that did not recur in 2018; and
- investments in sales and marketing to drive growth.

### **Net interest expense**

*The 62.7 percent decrease in net interest expense in 2018 from 2017 was primarily the result of:*

- the impact of lower debt levels during 2018 compared to 2017. In June 2018, the proceeds from the Separation were utilized to repay the remaining \$255.3 million aggregate principal amount of our 2.9% fixed rate senior notes due 2018 and for the early extinguishment of €363.4 million aggregate principal amount of our 2.45% senior notes due 2019.

### ***Loss on early extinguishment of debt***

In June 2018, we redeemed the remaining \$255.3 million aggregate principal amount of our 2.9% fixed rate senior notes due 2018 and completed a cash tender offer in the amount of €363.4 million aggregate principal amount of our 2.45% senior notes due 2019. All costs associated with the repurchases of debt were recorded as a *Loss on the early extinguishment of debt*, including \$16.0 million premium paid on early extinguishment and \$1.1 million of unamortized deferred financing costs.

In May 2017, we repurchased aggregate principal of certain series of outstanding fixed rate debt totaling \$1,659.3 million. Total costs of \$101.4 million associated with the repurchases were recorded as *Loss on early extinguishment of debt*.

### ***Taxation***

*The 18.7 percentage point decrease in the effective tax rate in 2018 from 2017 was primarily due to:*

- the mix of global earnings, including the impact of U.S. Tax Reform; and
- the impact of lower nondeductible interest expense allocated to continuing operations in 2018 compared to 2017.

### ***Principal risks and uncertainties***

Investors should carefully consider all of the information in this document and the following risk factors before making an investment decision regarding our securities. Any of the following risks could materially and adversely affect our business, financial condition, results of operations, cash flows and the actual outcome of matters as to which forward-looking statements are made in this document.

### ***Key trends and uncertainties regarding our existing business***

The following trends and uncertainties affected our financial performance in 2018 and 2017, and will likely impact our results in the future:

- During 2018 and 2017, we continued execution of certain business restructuring initiatives aimed at reducing our fixed cost structure and realigned our business in contemplation of the Separation and Distribution of nVent. We expect these actions will contribute to margin growth in 2019.
- We have identified specific product and geographic market opportunities that we find attractive and continue to pursue, both within and outside the U.S. We are reinforcing our businesses to more effectively address these opportunities through research and development and additional sales and marketing resources. Unless we successfully penetrate these markets, our core sales growth will likely be limited or may decline.
- We have experienced material and other cost inflation. We strive for productivity improvements, and we implement increases in selling prices to help mitigate this inflation. We expect the current economic environment will result in continuing price volatility for many of our raw materials, and we are uncertain as to the timing and impact of these market changes.
- Proposed regulations as part of the Tax Cuts and Jobs Act, enacted in the U.S. in December 2017, may place limitations on the deductibility of certain interest expense for U.S. tax purposes. These proposed regulations could materially adversely affect our financial condition, results of operations, cash flows or our effective tax rate in future reporting periods when enacted.

## **Risks Relating to Our Business**

### ***General global economic and business conditions affect demand for our products.***

We compete in various geographic regions and product markets around the world. Among these, the most significant are global industrial, commercial, and residential markets. We have experienced, and expect to continue to experience, fluctuations in revenues and results of operations due to economic and business cycles. Important factors for our businesses and the businesses of our customers include the overall strength of the economy and our customers' confidence in the economy, industrial and governmental capital spending, the strength of the residential and commercial real estate markets, the residential housing market, the commercial business climate, unemployment rates, availability of consumer and commercial financing, interest rates, and energy and commodity prices. The businesses of many of our industrial customers are to varying degrees cyclical and have experienced periodic downturns. While we attempt to minimize our exposure to economic or market fluctuations by serving a balanced mix of end markets and geographic

regions, any of the above factors, individually or in the aggregate, or a significant or sustained downturn in a specific end market or geographic region could reduce demand for our products and services, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

***We compete in attractive markets with a high level of competition, which may result in pressure on our profit margins and limit our ability to maintain or increase the market share of our products.***

The markets for our products and services are geographically diverse and highly competitive. We compete against large and well-established national and global companies, as well as regional and local companies and lower cost manufacturers. We compete based on technical expertise, intellectual property, reputation for quality and reliability, timeliness of delivery, previous installation history, contractual terms, service offerings, customer experience and service, and price. Some of our competitors, in particular smaller companies, attempt to compete based primarily on price, localized expertise and local relationships, especially with respect to products and applications that do not require a great deal of engineering or technical expertise. In addition, during economic downturns average selling prices tend to decrease as market participants compete more aggressively on price. If we are unable to continue to differentiate our products, services and solutions, or if we are forced to cut prices or to incur additional costs to remain competitive, it could have a material adverse effect on our business, financial condition, results of operations and cash flows.

***Volatility in currency exchange rates could have a material adverse effect on our financial condition, results of operations and cash flows.***

Sales outside of the U.S. for the year ended December 31, 2018 accounted for 37% of our turnover. Our financial statements reflect translation of items denominated in non-U.S. currencies to U.S. dollars. Therefore, if the U.S. dollar strengthens in relation to the principal non-U.S. currencies from which we derive revenue as compared to a prior period, our U.S. dollar reported revenue and income will effectively be decreased to the extent of the change in currency valuations, and vice-versa. Fluctuations in foreign currency exchange rates, most notably the strengthening of the U.S. dollar against the euro, could have a material adverse effect on our reported revenue in future periods. In addition, currency variations could have a material adverse effect on margins on sales of our products in countries outside of the U.S. and margins on sales of products that include components obtained from suppliers located outside of the U.S.

***Our future growth is dependent upon our ability to continue to adapt our products, services and organization to meet the demands of local markets in both developed and emerging economies and by developing or acquiring new technologies that achieve market acceptance with acceptable margins.***

We operate in global markets that are characterized by customer demand that is often global in scope but localized in delivery. We compete with thousands of smaller regional and local companies that may be positioned to offer products produced at lower cost than ours, or to capitalize on highly localized relationships and knowledge that are difficult for us to replicate. Also, in several emerging markets potential customers prefer local suppliers, in some cases because of existing relationships and in other cases because of local legal restrictions or incentives that favor local businesses. Accordingly, our future success depends upon a number of factors, including our ability to adapt our products, services, organization, workforce and sales strategies to fit localities throughout the world, particularly in high growth emerging markets; identify emerging technological and other trends in our target end-markets; and develop or acquire competitive products and services and bring them to market quickly and cost-effectively. The failure to effectively adapt our products or services could have a material adverse effect on our business, financial condition, results of operations and cash flows.

***We may not be able to identify, finance and complete suitable acquisitions and investments, and any completed acquisitions and investments could be unsuccessful or consume significant resources.***

Our business strategy includes acquiring businesses and making investments that complement our existing businesses. We continue to analyze and evaluate the acquisition of strategic businesses or product lines with the potential to strengthen our industry position or enhance our existing set of product and service offerings. We may not be able to identify suitable acquisition candidates, obtain financing or have sufficient cash necessary for acquisitions or successfully complete acquisitions in the future. Any acquisitions that we complete may not be successful. Acquisitions and investments may involve significant cash expenditures, debt incurrences, equity issuances, operating losses and expenses. Acquisitions involve numerous other risks, including:

- diversion of management time and attention from daily operations;
- difficulties integrating acquired businesses, technologies and personnel into our business;

- difficulties in obtaining and verifying the financial statements and other business information of acquired businesses;
- inability to obtain required regulatory approvals;
- potential loss of key employees, key contractual relationships or key customers of acquired companies or of ours;
- assumption of the liabilities and exposure to unforeseen liabilities of acquired companies, including risks relating to the U.S. Foreign Corrupt Practices Act (the “FCPA”); and
- dilution of interests of holders of our shares through the issuance of equity securities or equity-linked securities.

It may be difficult for us to integrate acquired operations, including those from our recent acquisitions of Aquion, Inc. and Pelican Water Systems, efficiently into our business operations. Any acquisitions or investments may not be successful and may ultimately result in impairment charges and have a material adverse effect on our business, financial condition, results of operations and cash flows.

***We may not achieve some or all of the expected benefits of our business initiatives.***

During 2018, 2017 and 2016, we initiated and continued execution of certain business initiatives aimed at reducing our fixed cost structure and realigning our business. As a result, we have incurred substantial expense, including restructuring charges. We may not be able to achieve the operating efficiencies to reduce costs or realize benefits that were anticipated in connection with these initiatives. If we are unable to execute these initiatives as planned, we may not realize all or any of the anticipated benefits, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

***We are exposed to political, regulatory, economic, trade, and other risks that arise from operating a multinational business.***

Sales outside of the U.S. for the year ended December 31, 2018 accounted for 37% of our turnover. Further, most of our businesses obtain some products, components and raw materials from non-U.S. suppliers. Accordingly, our business is subject to the political, regulatory, economic, trade, and other risks that are inherent in operating in numerous countries. These risks include:

- changes in general economic and political conditions in countries where we operate, particularly in emerging markets;
- relatively more severe economic conditions in some international markets than in the U.S.;
- the imposition of tariffs, exchange controls or other trade restrictions;
- changes in tax treaties, laws or rulings that could have a material adverse impact on our effective tax rate;
- the difficulty of enforcing agreements and collecting receivables through non-U.S. legal systems;
- the difficulty of communicating and monitoring standards and directives across our global facilities;
- trade protection measures and import or export licensing requirements and restrictions;
- the possibility of terrorist action affecting us or our operations;
- the threat of nationalization and expropriation;
- difficulty in staffing and managing widespread operations in non-U.S. labor markets;
- limitations on repatriation of earnings;
- the difficulty of protecting intellectual property in non-U.S. countries; and
- changes in and required compliance with a variety of non-U.S. laws and regulations.

In 2016, the United Kingdom voted in a referendum to exit the European Union (“Brexit”), which resulted in significant currency exchange rate fluctuations and volatility. Negotiations continue to determine the terms of Brexit. Given the lack of comparable precedent and the status of the negotiations, the implications of Brexit, or how such implications might affect our company, continue to remain unclear at this time. Brexit could, among other impacts, disrupt trade and the movement of goods, services and people between the United Kingdom and the European Union or other countries as well as create legal and global economic uncertainty.

Our success depends in part on our ability to anticipate and effectively manage these and other risks. We cannot assure that these and other factors will not have a material adverse effect on our international operations or on our business as a whole.

***Changes in U.S. or foreign government administrative policy, including changes to existing trade agreements, could have a material adverse effect on us.***

As a result of changes to U.S. or foreign government administrative policy, there may be changes to existing trade agreements, like the North American Free Trade Agreement (“NAFTA”) and its anticipated successor agreement, the U.S.-Mexico-Canada Agreement (“USMCA”) which is still subject to approval by the U.S., Mexico and Canada, greater restrictions on free trade generally, and significant increases in tariffs on goods imported into the U.S., particularly tariffs on products manufactured in Mexico, China, or other U.S. trading countries where we have operations or manufacture or sell products, among other possible changes. If the USMCA is ratified by all three countries, many of its provisions will not take effect until 2020. While the USMCA is somewhat similar to NAFTA, it contains several new compliance obligations addressing such issues as rules of origin, labor standard, certificate of origin documentation and de minimis thresholds, as well as new policies on labor and environmental standards, intellectual property protections and some digital trade provisions. We are currently analyzing the expected impact of the USMCA. While certain aspects of the USMCA are expected to be positive, others, including potentially higher regulatory compliance costs, may have an adverse impact on our business. It remains unclear what the U.S. administration or foreign governments, including China, will or will not do with respect to tariffs, NAFTA, USMCA or other international trade agreements and policies. A trade war, other governmental action related to tariffs or international trade agreements, including NAFTA and USMCA, changes in U.S. social, political, regulatory and economic conditions or in laws and policies governing foreign trade, manufacturing, development and investment in the territories and countries where we currently manufacture and sell products, and any resulting negative sentiments towards the U.S. as a result of such changes, could have a material adverse effect on our business, financial condition, results of operations and cash flows.

***We may experience cost and other inflation.***

In the past, we have experienced material cost and other inflation in a number of our businesses. We strive for productivity improvements and implement increases in selling prices to help mitigate cost increases in raw materials (especially metals and resins), energy and other costs including wages, pension, health care and insurance. We continue to implement operational initiatives in order to mitigate the impacts of this inflation and continuously reduce our costs. However, these actions may not be successful in managing our costs or increasing our productivity. Continued cost inflation or failure of our initiatives to generate cost savings or improve productivity could have a material adverse effect on our business, financial condition, results of operations and cash flows.

***Intellectual property challenges may hinder our ability to develop, engineer and market our products.***

Patents, non-compete agreements, proprietary technologies, customer relationships, trademarks, trade names and brand names are important to our business. Intellectual property protection, however, may not preclude competitors from developing products similar to ours or from challenging our names or products. Our pending patent applications, and our pending copyright and trademark registration applications, may not be allowed or competitors may challenge the validity or scope of our patents, copyrights or trademarks. In addition, our patents, copyrights, trademarks and other intellectual property rights may not provide us a significant competitive advantage. Over the past few years, we have noticed an increasing tendency for participants in our markets to use challenges to intellectual property as a means to compete. Patent and trademark challenges increase our costs to develop, engineer and market our products. We may need to spend significant resources monitoring, enforcing and defending our intellectual property rights and we may or may not be able to detect infringement by third parties. If we fail to successfully enforce our intellectual property rights or register new patents, our competitive position could suffer, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

***We have significant goodwill and intangible assets and future impairment of our goodwill and intangible assets could have a material adverse effect on our results of operations.***

We test goodwill and other indefinite-lived intangible assets for impairment on at least an annual basis, and more frequently if circumstances warrant. As of December 31, 2018 our goodwill and intangible assets were \$2,349 million and represented 62% of our total assets. Declines in fair market value could result in future goodwill and intangible asset impairment charges.

***A loss of, or material cancellation, reduction, or delay in purchases by, one or more of our largest customers could harm our business.***

Our net turnover to our largest customer represented approximately 15% of our consolidated turnover in 2018. While we do not have any other customers that accounted for 10% or more of our consolidated net sales in 2018, we have other customers that are key to the success of our business. Our concentration of sales to a relatively small number of larger customers makes our relationship with each of these customers important to our business. Our success is dependent on retaining these customers, which requires us to successfully manage relationships and anticipate the needs of our customers in the channels in which we sell our products. Our customers also may be impacted by economic conditions in the industries of those customers, which could result in reduced demand for our products. We cannot provide assurance that we will be able to retain our largest customers. In addition, some of our customers may shift their purchases to our competitors in the future. The loss of one or more of our largest customers, any material cancellation, reduction, or delay in purchases by these customers, or our inability to successfully develop relationships with additional customers could have a material adverse effect on our business, financial condition, results of operations and cash flows.

***A material disruption at any of our manufacturing facilities could cause us to be unable to meet customer demands or increase our costs.***

If operations at any of our manufacturing facilities were to be disrupted as a result of significant equipment failures, natural disasters, earthquakes, power outages, fires, explosions, terrorism, adverse weather conditions, labor disputes or other reasons, we may be unable to fill customer orders and otherwise meet customer demand for our products, which could have a material adverse effect on our business, financial condition, results of operations and cash flows. Interruptions in production, in particular at our manufacturing facilities, could increase our costs and reduce our sales. Any interruption in production capability could require us to make substantial capital expenditures to fill customer orders. We maintain property damage insurance that we believe to be adequate to provide for reconstruction of facilities and equipment, as well as business interruption insurance to mitigate losses resulting from any production interruption or shutdown caused by an insured loss. However, any recovery under our insurance policies may not offset the lost sales or increased costs that may be experienced during the disruption of operations, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

***Seasonality of sales and weather conditions could have a material adverse effect on our financial results.***

We experience seasonal demand with end-customers and end-users within each of our business segments. Demand for pool equipment in the Aquatic Systems segment, water filtration products in the Filtration Solutions segment, and residential water supply, infrastructure and agricultural products in the Flow Technologies segment follows warm weather trends and is at seasonal highs from April to August. While we attempt to mitigate the magnitude of the sales spike in the Aquatic Systems and Flow Technologies segments by employing some advance sale “early buy” programs (generally including extended payment terms and/or additional discounts), we cannot provide any assurance that such programs will be successful. In addition, seasonal effects in the Flow Technologies segment may vary from year to year and be impacted by weather patterns, particularly by temperature, heavy flooding and droughts.

***Covenants in our debt instruments may adversely affect us.***

Our credit agreements and indentures contain customary financial covenants, including those that limit the amount of our debt, which may restrict the operations of our business and our ability to incur additional debt to finance acquisitions. Our ability to meet the financial covenants can be affected by events beyond our control, and we cannot provide assurance that we will meet those tests. A breach of any of these covenants could result in a default under our credit agreements or indentures. Upon the occurrence of an event of default under any of our credit facilities or indentures, the lenders or trustees could elect to declare all amounts outstanding thereunder to be immediately due and payable and, in the case of credit facility lenders, terminate all commitments to extend further credit. If the lenders or trustees accelerate the repayment of borrowings, we cannot provide assurance that we will have sufficient assets to repay our credit facilities and our other indebtedness. Furthermore, acceleration of any obligation under any of our

material debt instruments will permit the holders of our other material debt to accelerate their obligations, which could have a material adverse effect on our financial condition.

***We may increase our debt or raise additional capital or our credit ratings may be downgraded in the future, which could affect our financial condition, and may decrease our profitability.***

As of December 31, 2018, we had \$788 million of total debt outstanding. We may increase our debt or raise additional capital in the future, subject to restrictions in our debt agreements. If our cash flow from operations is less than we anticipate, if our cash requirements are more than we expect, or if we intend to finance acquisitions, we may require more financing. However, debt or equity financing may not be available to us on acceptable terms, if at all. If we incur additional debt or raise equity through the issuance of additional capital shares, the terms of the debt or capital shares issued may give the holders rights, preferences and privileges senior to those of holders of our ordinary shares, particularly in the event of liquidation. The terms of the debt may also impose additional and more stringent restrictions on our operations than we currently have. If we raise funds through the issuance of additional equity, the percentage ownership of existing shareholders in our company would decline. If we are unable to raise additional capital when needed, our financial condition could be adversely affected. Unfavorable changes in the ratings that rating agencies assign to our debt may ultimately negatively impact our access to the debt capital markets and increase the costs we incur to borrow funds. If ratings for our debt fall below investment grade, our access to the debt capital markets may become restricted. Additionally, our credit agreements generally include an increase in interest rates if the ratings for our debt are downgraded.

***Our leverage could have a material adverse effect on our business, financial condition or results of operations.***

Our ability to make payments on and to refinance our indebtedness, including our existing debt as well as any future debt that we may incur, will depend on our ability to generate cash in the future from operations, financings or asset sales. Our ability to generate cash is subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control. If we are not able to repay or refinance our debt as it becomes due, we may be forced to sell assets or take other disadvantageous actions, including (i) reducing financing in the future for working capital, capital expenditures and general corporate purposes or (ii) dedicating an unsustainable level of our cash flow from operations to the payment of principal and interest on our indebtedness. The lenders who hold such debt could also accelerate amounts due, which could potentially trigger a default or acceleration of any of our other debt.

***Disruptions in the financial markets could adversely affect us, our customers and our suppliers by increasing funding costs or reducing availability of credit.***

In the normal course of our business, we may access credit markets for general corporate purposes, which may include repayment of indebtedness, acquisitions, additions to working capital, repurchase of shares, capital expenditures and investments in our subsidiaries. Although we expect to have sufficient liquidity to meet our foreseeable needs, our access to and the cost of capital could be negatively impacted by disruptions in the credit markets, which have occurred in the past and made financing terms for borrowers unattractive or unavailable. These factors may make it more difficult or expensive for us to access credit markets if the need arises. In addition, these factors may make it more difficult for our suppliers to meet demand for their products or for prospective customers to commence new projects, as customers and suppliers may experience increased costs of debt financing or difficulties in obtaining debt financing. Disruptions in the financial markets have had adverse effects on other areas of the economy and have led to a slowdown in general economic activity that may continue to adversely affect our businesses. One or more of these factors could adversely affect our business, financial condition, results of operations or cash flows.

***Our share price may fluctuate significantly.***

We cannot predict the prices at which our shares may trade. The market price of our shares may fluctuate widely, depending on many factors, some of which may be beyond our control, including:

- actual or anticipated fluctuations in our results of operations due to factors related to our business;
- success or failure of our business strategy;
- our quarterly or annual earnings, or those of other companies in our industry;
- our ability to obtain third-party financing as needed;
- announcements by us or our competitors of significant acquisitions or dispositions;
- changes in accounting standards, policies, guidance, interpretations or principles;

- changes in earnings estimates or guidance by us or securities analysts or our ability to meet those estimates or guidance;
- the operating and share price performance of other comparable companies;
- investor perception of us;
- overall market fluctuations;
- results from any material litigation, government investigations or environmental liabilities;
- natural or other environmental disasters;
- changes in laws and regulations affecting our business; and
- general economic conditions and other external factors.

Stock markets in general have experienced volatility that has often been unrelated to the operating performance of a particular company. These broad market fluctuations could have a material adverse effect on our share price.

### **Risks Relating to Legal, Regulatory and Compliance Matters**

#### ***Violations of the U.S. Foreign Corrupt Practices Act and similar anti-corruption laws outside the U.S. could have a material adverse effect on us.***

The FCPA and similar anti-corruption laws in other jurisdictions generally prohibit companies and their intermediaries from making improper payments to government officials or other persons for the purpose of obtaining or retaining business. Recent years have seen a substantial increase in anti-bribery law enforcement activity, with more frequent and aggressive investigations and enforcement proceedings by both the U.S. Department of Justice and the SEC, increased enforcement activity by non-U.S. regulators and increases in criminal and civil proceedings brought against companies and individuals. Our policies mandate compliance with these anti-bribery laws. We operate in many parts of the world that are recognized as having governmental and commercial corruption and in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. Because many of our customers and end users are involved in infrastructure construction and energy production, they are often subject to increased scrutiny by regulators. We cannot assure you that our internal control policies and procedures will always protect us from reckless or criminal acts committed by our employees or third-party intermediaries. In the event that we believe or have reason to believe that our employees or agents have or may have violated applicable anti-corruption laws, including the FCPA we may be required to investigate or have outside counsel investigate the relevant facts and circumstances, which can be expensive and require significant time and attention from senior management. Violations of these laws may require self-disclosure to government agencies and result in criminal or civil sanctions, which could disrupt our business and result in a material adverse effect on our reputation, business, financial condition, results of operations and cash flows.

#### ***Our failure to satisfy international trade compliance regulations, and changes in U.S. government sanctions, could have a material adverse effect on us.***

Our global operations require importing and exporting goods and technology across international borders on a regular basis. Certain of the products we manufacture are “dual use” products, which are products that may have both civil and military applications, or may otherwise be involved in weapons proliferation, and are often subject to more stringent export controls. From time to time, we obtain or receive information alleging improper activity in connection with imports or exports. Our policy mandates strict compliance with U.S. and non-U.S. trade laws applicable to our products. However, even when we are in strict compliance with law and our policies, we may suffer reputational damage if certain of our products are sold through various intermediaries to entities operating in sanctioned countries. When we receive information alleging improper activity, our policy is to investigate that information and respond appropriately, including, if warranted, reporting our findings to relevant government authorities. Nonetheless, our policies and procedures may not always protect us from actions that would violate U.S. and/or non-U.S. laws. Any improper actions could subject us to civil or criminal penalties, including material monetary fines, or other adverse actions including denial of import or export privileges, and could damage our reputation and business prospects.

***We are exposed to potential environmental laws, liabilities and litigation.***

We are subject to U.S. federal, state, local and non-U.S. laws and regulations governing our environmental practices, public and worker health and safety, and the indoor and outdoor environment. Compliance with these environmental, health and safety regulations could require us to satisfy environmental liabilities, increase the cost of manufacturing our products or otherwise have a material adverse effect on our business, financial condition, results of operations and cash flows. Any violations of these laws by us could cause us to incur unanticipated liabilities. We are also required to comply with various environmental laws and maintain permits, some of which are subject to renewal from time to time, for many of our businesses and we could suffer if we are unable to renew existing permits or to obtain any additional permits that we may require. Compliance with environmental requirements also could require significant operating or capital expenditures or result in significant operational restrictions. We cannot assure you that we have been or will be at all times in compliance with environmental and health and safety laws. If we violate these laws, we could be fined, criminally charged or otherwise sanctioned by regulators.

We have been named as defendant, target or a potentially responsible party (“PRP”) in a number of environmental clean-ups relating to our current or former business units. We have disposed of a number of businesses in recent years and in certain cases, we have retained responsibility and potential liability for certain environmental obligations. We have received claims for indemnification from certain purchasers. We may be named as a PRP at other sites in the future for existing business units, as well as both divested and acquired businesses. In addition to clean-up actions brought by governmental authorities, private parties could bring personal injury or other claims due to the presence of, or exposure to, hazardous substances.

Certain environmental laws impose liability on current or previous owners or operators of real property for the cost of removal or remediation of hazardous substances at their properties or at properties at which they have disposed of hazardous substances. We have projects underway at several current and former manufacturing facilities to investigate and remediate environmental contamination resulting from our past operations or by other businesses that previously owned or used the properties. The cost of clean-up and other environmental liabilities can be difficult to accurately predict. In addition, environmental requirements change and tend to become more stringent over time. Our eventual environmental clean-up costs and liabilities could exceed the amount of our current reserves.

***Our subsidiaries are party to asbestos-related product litigation that could adversely affect our financial condition, results of operations and cash flows.***

Our subsidiaries, along with numerous other companies, are named as defendants in a substantial number of lawsuits based on alleged exposure to asbestos-containing materials, substantially all of which relate to our discontinued operations. These cases typically involve product liability claims based primarily on allegations of manufacture, sale or distribution of industrial products that either contained asbestos or were attached to or used with asbestos-containing components manufactured by third parties. Each case typically names between several dozen to more than a hundred corporate defendants. Historically, our subsidiaries have been identified as defendants in asbestos-related claims. Our strategy has been, and continues to be, to mount a vigorous defense aimed at having unsubstantiated suits dismissed, and, only where appropriate, settling claims before trial. As of December 31, 2018, there were approximately 600 claims pending against our subsidiaries, substantially all of which relate to our discontinued operations. We cannot predict with certainty the extent to which we will be successful in litigating or otherwise resolving lawsuits in the future and we continue to evaluate different strategies related to asbestos claims filed against us including entity restructuring and judicial relief. Unfavorable rulings, judgments or settlement terms could have a material adverse impact on our business and financial condition, results of operations and cash flows.

***We are exposed to certain regulatory and financial risks related to climate change.***

Climate change is receiving ever increasing attention worldwide. Many scientists, legislators and others attribute global warming to increased levels of greenhouse gases, which has led to significant legislative and regulatory efforts to limit greenhouse gas emissions. The U.S. Environmental Protection Agency (“EPA”) has published findings that emissions of carbon dioxide, methane, and other greenhouse gases (“GHGs”) present an endangerment to public health and the environment because emissions of such gases are, according to the EPA, contributing to the warming of the earth’s atmosphere and other climate changes. Based on these findings, the EPA has implemented regulations that require reporting of GHG emissions, or that limit emissions of GHGs from certain mobile or stationary sources. In addition, the U.S. Congress and federal and state regulatory agencies have considered other legislation and regulatory proposals to reduce emissions of GHGs, and many states have already taken legal measures to reduce emissions of GHGs, primarily through the development of GHG inventories, GHG permitting and/or regional GHG cap-and-trade

programs. It is uncertain whether, when and in what form a federal mandatory carbon dioxide emissions reduction program, or other state programs, may be adopted. Similarly, certain countries have adopted the Kyoto Protocol and/or the Paris Accord, and these and other existing international initiatives or those under consideration could affect our international operations. To the extent our customers, particularly our energy and industrial customers, are subject to any of these or other similar proposed or newly enacted laws and regulations, we are exposed to risks that the additional costs by customers to comply with such laws and regulations could impact their ability or desire to continue to operate at similar levels in certain jurisdictions as historically seen or as currently anticipated, which could negatively impact their demand for our products and services. These actions could also increase costs associated with our operations, including costs for raw materials and transportation. It is uncertain what laws will be enacted and therefore we cannot predict the potential impact of such laws on our future financial condition, results of operations and cash flows.

***Increased information technology security threats and computer crime pose a risk to our systems, networks, products and services, and we are exposed to potential regulatory, financial and reputational risks relating to the protection of our data.***

We rely upon information technology systems and networks in connection with a variety of business activities, some of which are managed by third parties. As our business increasingly interfaces with employees, customers, dealers and suppliers using information technology systems and networks, we are subject to an increased risk to the secure operation of these systems and networks. The secure operation of these information technology systems and networks is critical to our business operations and strategy. Information technology security threats -- from user error to attacks designed to gain unauthorized access to our systems, networks and data -- are increasing in frequency and sophistication. These threats pose a risk to the security of our systems and networks and the confidentiality, availability and integrity of the data we process and maintain. Establishing systems and processes to address these threats may increase our costs. We have experienced data breaches, and, although we have determined such data breaches to be immaterial and such data breaches have not had a material adverse effect on our financial condition, results of operations or cash flows, there can be no assurance of similar results in the future. Should future attacks succeed in the theft of assets, exporting sensitive data or financial information or controlling sensitive systems or networks, it could expose us and our employees, customers, dealers and suppliers to the theft of assets, misuse of information or systems, the compromising of confidential information, manipulation and destruction of data, defective products, and production downtimes and operations disruptions. The occurrence of any of these events could have a material adverse effect on our reputation, business, financial condition, results of operations and cash flows. In addition, such breaches in security could result in litigation, regulatory action and potential liability and the costs and operational consequences of implementing further data protection measures.

***Changes in data privacy laws and our ability to comply with them could have a material adverse effect on us.***

We collect and store data that is sensitive to Pentair and its employees, customers, dealers and suppliers. A variety of state, national, foreign and international laws and regulations apply to the collection, use, retention, protection, security, disclosure, transfer and other processing of personal and other data. Many foreign data privacy regulations, including the General Data Protection Regulation ("GDPR"), which became effective in the European Union in 2018, are more stringent than those in the United States. These laws and regulations are rapidly evolving and changing, and could have an adverse effect on our operations. Companies' obligations and requirements under these laws and regulations are subject to uncertainty in how they may be interpreted by government authorities. The costs of compliance with, and the other burdens imposed by, these and other laws or regulatory actions may increase our operational costs, and/or result in interruptions or delays in the availability of systems. In the case of non-compliance these laws, including the GDPR, regulators have the authority to levy significant fines. In addition, if there is a breach of privacy, we may be required to make notifications under data privacy regulations. The occurrence of any of these events could have a material adverse effect on our reputation, business, financial condition, results of operations and cash flows.

***We may be negatively impacted by litigation and other claims.***

We are currently, and may in the future, become subject to litigation and other claims. These legal proceedings are typically claims that relate to the conduct of our business and include, without limitation, claims relating to commercial or contractual disputes with suppliers, customers or parties to acquisitions and divestitures, intellectual property matters, environmental, safety and health matters, product liability, the use or installation of our products, consumer matters, and employment and labor matters. The outcome of such legal proceedings cannot be predicted with certainty and some may be disposed of unfavorably to us. We also may not have insurance that covers such claims. While we currently maintain what we believe to be suitable product liability insurance, we may not be able to

maintain this insurance on acceptable terms and this insurance may not provide adequate protection against potential or previously existing liabilities. In addition, we self-insure a portion of product liability claims. Further, some of our business involves the sale of our products to customers that are constructing large and complex systems, facilities or other capital projects and while we generally try to limit our exposure liquidated damages, consequential damages and other damages in the contracts for these projects, we could be exposed to significant monetary damages and other liabilities in connection with the sale of our products for these projects for a variety of reasons. Successful claims or litigation against us for significant amounts could have a material adverse effect on our reputation, business, financial condition, results of operations and cash flows.

### **Risks Relating to the Separation of nVent Electric plc by Spin-off**

#### ***We may be unable to achieve some or all of the benefits that we expect to achieve from the spin-off.***

On April 30, 2018, we completed the separation of our Electrical business through the spin-off nVent Electric plc to our shareholders. Following the spin-off, we are a smaller and less diversified company with a narrower business focus and, as a result, we may be more vulnerable to changing market conditions. Although we believe that the spin-off of nVent Electric plc will provide financial, operational, managerial and other benefits to us and our shareholders, the spin-off may not provide the results on the scope or on the scale we anticipate, and we may not realize any or all of the intended benefits. In addition, we have and will continue to incur one-time costs and ongoing costs in connection with, or as a result of, the spin-off, including costs of operating as independent, publicly-traded companies that the two businesses are no longer able to share. Those costs may exceed our estimates or could negate some of the benefits we expect to realize. If we do not realize the intended benefits or if our costs exceed our estimates, we could suffer a material adverse effect on the business, financial condition, results of operations, cash flows and trading prices.

#### ***The spin-off transaction could result in substantial tax liability to us and our shareholders if the spin-off does not qualify as a tax-free transaction.***

The spin-off was conditioned on our receipt of opinions of tax advisors and tax rulings from taxing authorities. However, these tax opinions will not be binding on taxing authorities. Accordingly, taxing authorities or the courts may reach conclusions with respect to the spin-off that are different from the conclusions reached in such opinions. Moreover, such opinions were based on certain statements and representations made by us, which, if incomplete or inaccurate in any material respect, could invalidate the opinions. If the spin-off and certain related transactions were determined to be taxable, we could be subject to a substantial tax liability that could have a material adverse effect on our financial condition, results of operations and cash flows. In addition, if the spin-off were taxable, each holder of our ordinary shares who received shares of nVent Electric plc in the spin-off would generally be treated as receiving a taxable distribution of property in an amount equal to the fair market value of the shares received.

#### ***We may be exposed to claims and liabilities as a result of the spin-off.***

In connection with the spin-off, we and nVent Electric plc entered into a separation and distribution agreement and various other agreements, including a transition services agreement, a tax matters agreement and an employee matters agreement. These agreements provide for the performance of services by each company for the benefit of the other for a period of time after the spin-off and provide for specific indemnity and liability obligations. The indemnity rights we have against nVent under the agreements may not be sufficient to protect us. In addition, our indemnity obligations to nVent may be significant and these risks could negatively affect our financial condition, results of operations and cash flows.

### **Risks Relating to Our Jurisdiction of Incorporation in Ireland and Tax Residency in the U.K.**

#### ***We are subject to changes in law and other factors that may not allow us to maintain a worldwide effective corporate tax rate that is competitive in our industry.***

While we believe that we should be able to maintain a worldwide effective corporate tax rate that is competitive in our industry, we cannot give any assurance as to what our effective tax rate will be in the future because of, among other things, uncertainty regarding tax policies of the jurisdictions where we operate. Also, the tax laws of the U.S., the U.K., Ireland and other jurisdictions could change in the future, and such changes could cause a material change in our worldwide effective corporate tax rate. These changes include the Tax Cuts and Jobs Act enacted in the U.S. in December 2017, which made significant changes to certain U.S. tax laws relevant to us, including limitations on the deductibility of certain interest expense and employee compensation, limitations on various other deductions and credits, the imposition of taxes in respect of certain cross-border payments or transfers, the imposition of taxes

on certain earnings of non-U.S. entities on a current basis, and changes in the timing of the recognition of income or its character. These items and regulations and guidance implementing the Tax Cuts and Jobs Act could materially adversely affect our financial condition, results of operations, cash flows or our effective tax rate in future reporting periods. In addition, legislative action could be taken by the U.S., the U.K., Ireland or the European Union which could override tax treaties or modify tax statutes or regulations upon which we expect to rely and adversely affect our effective tax rate. We cannot predict the outcome of any specific legislative proposals. If proposals were enacted that had the effect of disregarding our incorporation in Ireland or limiting our ability as an Irish company to maintain tax residency in the U.K. and take advantage of the tax treaties among the U.S., the U.K. and Ireland, we could be subject to increased taxation, which could materially adversely affect our financial condition, results of operations, cash flows or our effective tax rate in future reporting periods.

***A change in our tax residency could have a negative effect on our future profitability, and may trigger taxes on dividends or exit charges.***

Under current Irish legislation, a company is regarded as resident for tax purposes in Ireland if it is centrally managed and controlled in Ireland, or, in certain circumstances, if it is incorporated in Ireland. Under current U.K. legislation, a company that is centrally managed and controlled in the U.K. is regarded as resident in the U.K. for taxation purposes unless it is treated as resident in another jurisdiction pursuant to any appropriate double tax treaty with the U.K. Other jurisdictions may also seek to assert taxing jurisdiction over Pentair.

Where a company is treated as tax resident under the domestic laws of both the U.K. and Ireland, article 4(3) of the Double Tax Convention between Ireland and the U.K. (the “residence tie-breaker”) currently provides that the company shall be treated as resident only in one of those two jurisdictions if its place of effective management is situated in that jurisdiction.

The Organisation for Economic Co-operation and Development has proposed a number of measures relating to the tax treatment of multinationals, some of which are to be implemented by amending double tax treaties through a multilateral instrument (the “MLI”). The MLI has been signed and ratified by a number of countries, including Ireland and the U.K. The MLI allows signatories to opt into or out of certain changes: the effect for a given double tax convention depends on the options chosen by the two contracting states. Ireland and the U.K. have confirmed that they intend to change the residence tie-breaker so that a company will not cease being dual resident until there is a determination by the tax authorities of the two contracting states, instead of an objective application of the place of effective management test. The MLI has not yet entered into force effect in order to amend the residence tie-breaker.

Under Ireland’s domestic tax residency rules, Pentair should not be Irish resident until 1 January 2021 (provided that there is no change in ownership and no major change in the nature or conduct of the business of the company before that date, in which case the residence tie-breaker should apply from the date of the change of ownership). Accordingly, we do not expect the change to the residence tie-breaker to have effect until 1 January 2021 at the earliest.

It is possible that in the future, whether as a result of a change in law (including the entry into force and effect of the MLI) or the practice of any relevant tax authority or as a result of any change in the conduct of our affairs, we could become, or be regarded as having become, resident in a jurisdiction other than the U.K. If Pentair ceases to be resident in the U.K. and becomes resident in another jurisdiction, it may be subject to U.K. exit charges, and could become liable for additional tax charges in the other jurisdiction (including dividend withholding taxes or corporate income tax charges). If Pentair were to be treated as resident in more than one jurisdiction, it could be subject to taxation in multiple jurisdictions. If, for example, Pentair were considered to be a tax resident of Ireland, we could become liable for Irish corporation tax and any dividends paid by it could be subject to Irish dividend withholding tax.

***Irish law differs from the laws in effect in the United States and may afford less protection to holders of our securities.***

It may not be possible to enforce court judgments obtained in the U.S. against us in Ireland based on the civil liability provisions of the U.S. federal or state securities laws. In addition, there is some uncertainty as to whether the courts of Ireland would recognize or enforce judgments of U.S. courts obtained against us or our directors or officers based on the civil liabilities provisions of the U.S. federal or state securities laws or hear actions against us or those persons based on those laws. We have been advised that the U.S. currently does not have a treaty with Ireland providing for the reciprocal recognition and enforcement of judgments in civil and commercial matters. Therefore, a final judgment for the payment of money rendered by any U.S. federal or state court based on civil liability, whether or not based solely on U.S. federal or state securities laws, would not automatically be enforceable in Ireland.

As an Irish company, we are governed by the Irish Companies Act, which differs in some material respects from laws generally applicable to U.S. corporations and shareholders, including, among others, differences relating to interested director and officer transactions and shareholder lawsuits. Likewise, the duties of directors and officers of an Irish company generally are owed to the company only. Shareholders of Irish companies generally do not have a personal right of action against directors or officers of the company and may exercise such rights of action on behalf of the company only in limited circumstances. Accordingly, holders of our securities may have more difficulty protecting their interests than would holders of securities of a corporation incorporated in a jurisdiction of the U.S.

***Transfers of our ordinary shares may be subject to Irish stamp duty.***

Transfers of our ordinary shares effected by means of the transfer of book entry interests in the Depository Trust Company (“DTC”) will not be subject to Irish stamp duty. However, if you hold your ordinary shares directly rather than beneficially through DTC, any transfer of your ordinary shares could be subject to Irish stamp duty (currently at the rate of 1 percent of the higher of the price paid or the market value of the shares acquired). Payment of Irish stamp duty is generally a legal obligation of the transferee.

We currently intend to pay, or cause one of our affiliates to pay, stamp duty in connection with share transfers made in the ordinary course of trading by a seller who holds shares directly to a buyer who holds the acquired shares beneficially. In other cases we may, in our absolute discretion, pay or cause one of our affiliates to pay any stamp duty. Our articles of association provide that, in the event of any such payment, we (i) may seek reimbursement from the buyer, (ii) will have a lien against the shares acquired by such buyer and any dividends paid on such shares and (iii) may set-off the amount of the stamp duty against future dividends on such shares. Parties to a share transfer may assume that any stamp duty arising in respect of a transaction in our shares has been paid unless one or both of such parties is otherwise notified by us.

***Our ordinary shares, received by means of a gift or inheritance could be subject to Irish capital acquisitions tax.***

Irish capital acquisitions tax (“CAT”) could apply to a gift or inheritance of our ordinary shares irrespective of the place of residence, ordinary residence or domicile of the parties. This is because our shares will be regarded as property situated in Ireland. The person who receives the gift or inheritance has primary liability for CAT. Gifts and inheritances passing between spouses are exempt from CAT. Children have a tax-free threshold of €320,000 per lifetime in respect of taxable gifts or inheritances received from their parents for periods on or after 10 October 2018.

***Financial risk management***

***Interest rate risk***

Our debt portfolio as of December 31, 2018, was comprised of debt predominantly denominated in U.S. dollars. This debt portfolio is comprised of 88% fixed-rate debt and 12% variable-rate debt. Changes in interest rates and foreign currency rates have different impacts on the fixed and variable-rate portions of our debt portfolio. A change in interest rates on the fixed portion of the debt portfolio impacts the fair value, but has no impact on interest incurred or cash flows. A change in interest rates on the variable portion of the debt portfolio impacts the interest incurred and cash flows but does not impact the net financial instrument position.

Based on the fixed-rate debt included in our debt portfolio, as of December 31, 2018, a 100 basis point increase or decrease in interest rates would result in an \$11.6 million decrease or a \$12.0 million increase in fair value, respectively.

Based on the variable-rate debt included in our debt portfolio as of December 31, 2018, a 100 basis point increase or decrease in interest rates would result in a \$1.0 million increase or decrease in interest incurred.

***Foreign currency risk***

We conduct business in various locations throughout the world and are subject to market risk due to changes in the value of foreign currencies in relation to our reporting currency, the U.S. dollar. Periodically, we use derivative financial instruments to manage these risks. The functional currencies of our foreign operating locations are generally the local currency in the country of domicile. We manage these operating activities at the local level and turnovers, costs, assets and liabilities are generally denominated in local currencies, thereby mitigating the risk associated with changes in foreign exchange. However, our results of operations and assets and liabilities are reported in U.S. dollars and thus will fluctuate with changes in exchange rates between such local currencies and the U.S. dollar.

From time to time, we may enter into short duration foreign currency contracts to hedge foreign currency risks. As the majority of our foreign currency contracts have an original maturity date of less than one year, there is no material foreign currency risk. At December 31, 2018 and 2017, we had outstanding foreign currency derivative contracts with gross notional U.S. dollar equivalent amounts of \$331.4 million and \$481.4 million, respectively. Changes in the fair value of all derivatives are recognized immediately in income unless the derivative qualifies as a hedge of future cash flows. Gains and losses related to a hedge are deferred and recorded in the Consolidated Balance Sheets as a component of *Accumulated other comprehensive loss* and subsequently recognized in the Consolidated Profit and Loss Account and the Statement of Comprehensive Profit (Loss) when the hedged item affects earnings.

At December 31, 2018, we had €136.6 million 2.45% Senior Notes due 2019 (the “2019 Euro Notes”) designated as a net investment hedge of our investments in certain international subsidiaries that use the Euro as their functional currency. The hedge is intended to reduce, but will not eliminate, the impact on our financial results of changes in the exchange rate between the Euro and the U.S. dollar. The currency risk related to the net investment hedge is measured by estimating the potential impact of a 10% change in the value of the U.S. dollar relative to the Euro. The rates used to perform this analysis were based on the market exchange rates in effect on December 31, 2018. A 10% appreciation of the U.S. dollar relative to the Euro would result in a \$14.1 million net increase in *Accumulated other comprehensive loss*. Conversely, a 10% depreciation of the U.S. dollar relative to the Euro would result in a \$17.2 million net decrease in *Accumulated other comprehensive loss*. However, these increases and decreases in Other comprehensive income would be offset by decreases or increases in the hedged net investments on our balance sheet due to currency translation.

### ***Research and development***

We conduct research and development (“R&D”) activities in our own facilities, which consist primarily of the development of new products, product applications and manufacturing processes. We expense R&D costs as incurred. R&D expenditures from continuing operations during 2018 and 2017 were \$76.7 million and \$73.2 million, respectively.

### ***Acquisition of own shares***

In December 2014, the Board of Directors authorized the repurchase of our ordinary shares up to a maximum dollar limit of \$1.0 billion (the “2014 Authorization”). On May 8, 2018, the Board of Directors authorized the repurchase of our ordinary shares up to a maximum dollar limit of \$750.0 million (the “2018 Authorization”), replacing the 2014 Authorization. The 2018 Authorization expires on May 31, 2021.

During the year ended December 31, 2017, we repurchased 3.0 million of our ordinary shares for \$200.0 million under the 2014 Authorization.

During the year ended December 31, 2018, we repurchased 10.2 million of our shares for \$500.0 million, of which 2.2 million shares, or \$150.0 million, and 8.0 million shares, or \$350.0 million, were repurchased pursuant to the 2014 and 2018 Authorizations, respectively.

As of December 31, 2018, we had \$400.0 million available for share repurchases under the 2018 Authorization.

Dividends on our ordinary shares or reductions of share capital for distribution to shareholders, if any, must be approved by our board of directors for payment out of distributable reserves on our parent company statutory balance sheet. We are not permitted to pay dividends out of share capital, which includes share premiums. Our distributable reserve balance was \$6.5 billion and \$9.0 billion as of December 31, 2018 and 2017, respectively.

### ***Dividends***

On December 10, 2018, the Board of Directors declared a quarterly cash dividend of \$0.18 that was paid on February 8, 2019 to shareholders of record at the close of business on January 25, 2019. Additionally, the Board of Directors approved a plan to increase the 2019 annual cash dividend to \$0.72 from \$0.70, adjusted for the Separation. The 2019 dividend is intended to be paid in four quarterly installments. We paid dividends in 2018 of \$187.2 million, or \$1.05 per ordinary share, compared with \$251.7 million, or \$1.38 per ordinary share, in 2017.

See Note 5 of the Company financial statements for shareholders’ funds activity of the Company.

### ***Non-Financial Information Statement***

For the purpose of complying with European Union (Disclosure of Non-Financial and Diversity Information by Certain Large Undertakings and Groups) Regulations 2017, Statutory Instrument No. 360 of 2017, as amended by Statutory Instrument No. 410 of 2018, the table below and the information referred to therein is intended to help stakeholders understand our position on key non-financial matters. The information referenced below from our 2017 Corporate Responsibility Report (“CRR”), 2018 Form 10-K (“10-K”) and 2018 Proxy Statement (“PS”) is deemed to be incorporated into this part of the Directors’ Report. Unless otherwise noted, the policies and other documents listed below are published on our website, [www.pentair.com](http://www.pentair.com).

<b>Reporting requirements</b>	<b>Policies and governing standards</b>	<b>Additional information / risk management</b>
<b>Environmental Matters</b>	Environmental, Health & Safety Policy	Winning Operations (CRR pages 24-36)
<b>Social and Employee Matters</b>	Code of Business Conduct and Ethics Environmental, Health & Safety Policy Global Employee Privacy Policy <sup>(1)</sup>	Winning Workplace (CRR pages 38-47) Winning Communities (CRR pages 49-55)
<b>Human Rights</b>	Supplier Code of Conduct Slavery and Human Trafficking Statement Privacy and Data Security Notice	Governance-Privacy & Data Security (CRR page 60)
<b>Anti-Corruption and Anti-Bribery</b>	Code of Business Conduct and Ethics Anti-Bribery & Corruption Policy <sup>(1)</sup> Procedures Governing Interactions with Government Officials <sup>(1)</sup> Conflicts of Interest, Gifts & Entertainment Policy <sup>(1)</sup>	Governance-Code of Conduct (CRR page 58)
<b>Supply Chain Matters and Conflict Minerals</b>	Global Supplier Guide Supplier Code of Conduct California Transparency in Supply Chains Act Disclosure Conflict Minerals Policy	Governance - Supplier Relationships (CRR page 59) Conflict Minerals Report
<b>Description of Principal Risks and Impact of Business Activity</b>		Risk Factors (10-K pages 4-14) Legal Proceedings (10-K pages 14-15) Risk Oversight (PS page 25) Corporate Governance Principles
<b>Description of the Business Model</b>		Business (10-K pages 1-4) A Winning Company (CRR pages 5-10) Winning Solutions (CRR pages 11-22) Winning Operations (CRR pages 24-36)
<b>Non-Financial Key Performance Indicators</b>		Winning Operations (CRR pages 24-36)

(1) Not published externally

### ***Company accounting records***

We are responsible for ensuring that the Company keeps adequate accounting records and appropriate accounting systems. The measures taken by the directors to ensure compliance with the Company’s obligation to keep adequate accounting records are the use of appropriate systems and procedures and the employment of competent persons. We have appointed a Chief Financial Officer who makes regular reports to us and ensures compliance with the requirements of Sections 281-285 of the Companies Act 2014. The Company also has a Chief Accounting Officer, who works closely with the Chief Financial Officer and who makes regular reports to our Audit Committee. In addition, the Company’s Senior Director of Internal Audit and the Company’s General Counsel and Secretary each make regular reports to our Audit Committee regarding fraud and other financial-related irregularities. Our Audit Committee, in turn, briefs us on significant financial matters arising from reports of the Chief Financial Officer, the Chief Accounting Officer, the Senior Director of Internal Audit, the external auditor and the General Counsel and Secretary.

The books and accounting records of Pentair plc are maintained at the Company’s executive office at Regal House, 70 London Road, Twickenham, London, TW13QS U.K. and are readily accessible at Pentair plc’s registered address of Arthur Cox, 10 Earlsfort Terrace, Dublin 2, Ireland.

### **Directors**

Glynis A. Bryan, Jacques Esculier, T. Michael Glenn, Theodore L. Harris, David A. Jones, Michael T. Speetzen, John L. Stauch and Billie I. Williamson served as directors of Pentair plc during 2018 and each of their terms expire at the 2019 annual general meeting of shareholders. Jerry W. Burris, Carol Anthony (John) Davidson, Edward P. Garden, David H. Y. Ho, Randall J. Hogan, Ronald L. Merriman and William T. Monahan resigned as directors in connection with the Separation effective April 30, 2018, and the Board elected Theodore L. Harris, Matthew H. Peltz, Michael T. Speetzen and John L. Stauch as new directors effective May 1, 2018. Matthew Peltz was appointed as a director on April 30, 2018 and resigned as a director effective September 10, 2018.

There were no other changes to the composition of the Board during the financial year or since the financial year end other than those mentioned above.

### **Directors and Secretary's interests in shares**

No director, the general counsel and secretary, or any member of their immediate family had any interest in shares or debentures of any subsidiary. Directors' remuneration is set forth in Note 24 to the consolidated financial statements. The interests of the directors and company secretary holding office at the year end in the ordinary share capital of Pentair plc at the beginning of the financial year, or date of appointment if later, and at the end of the financial year were as follows:

	Number of ordinary shares of \$0.01 each			
	December 31, 2018		December 31, 2017	
	Shares <sup>(1)</sup>	Options	Shares <sup>(1)</sup>	Options
<b>Directors</b>				
Glynis A. Bryan	26,005	38,665	23,498	56,019
Jacques Esculier	8,905	—	7,176	—
T. Michael Glenn	22,784	38,665	20,352	56,019
Theodore L. Harris <sup>(2)</sup>	2,862	—	—	—
David A. Jones	44,212	38,665	41,251	38,819
Michael T. Speetzen <sup>(2)</sup>	2,862	—	—	—
John L. Stauch <sup>(2)</sup>	257,891	544,549	—	—
Billie I. Williamson	9,462	—	7,498	—
<b>General Counsel and Secretary</b>				
Karla C. Robertson	7,334	15,457	—	—

(1) The amounts in this column include ordinary shares owned by the director, both directly and indirectly, and unvested restricted stock units.

(2) New appointment to the Board, following the Separation of nVent on April 30, 2018.

### **Audit Committee**

In accordance with Section 167 of the Companies Act 2014, the Company has established an audit committee for the full financial year.

### **Statement on relevant audit information**

Each of the persons who is a director at the date of approval of this report confirms that:

- so far as that director is aware, there is no relevant audit information of which the company's auditor is unaware, and
- that director has taken all the steps that ought to have been taken as a director in order to be aware of any relevant audit information and to establish that the company's auditor is aware of that information.

This confirmation is given and should be interpreted in accordance with the provisions of Section 330 of the Companies Act 2014.

***Directors' Compliance Statement***

As required by Section 225 of the Companies Act 2014, the directors acknowledge that they are responsible for securing Pentair plc's compliance with its "relevant obligations" (as defined in that legislation). The directors further confirm that a compliance policy statement has been drawn up, and that appropriate arrangements and structures have been put in place that are, in the directors' opinion, designed to secure material compliance with the relevant obligations. In discharging their responsibilities under Section 225, the directors relied on the advice of persons who the directors believe have the requisite knowledge and experience to advise Pentair plc on compliance with its relevant obligations. During the financial year to which this report relates, a review of the arrangements or structures referred to above have been conducted.

***Political donations***

No political contributions that require disclosure under Irish law were made during the financial year.

***Subsidiary companies and branches***

Information regarding subsidiary undertakings, including information regarding branches, is provided in Note 27 to the consolidated financial statements.

***Going concern***

The directors have a reasonable expectation that the Pentair plc Group and Company have adequate resources to continue in operational existence for the foreseeable future. Accordingly, they continue to adopt the going concern basis in preparing the financial statements.

***Post balance sheet events***

Two acquisitions have been made since the financial year end. Details of these acquisitions have been disclosed in Note 2.

***Auditor***

The auditor, Deloitte Ireland LLP, Chartered Accountants and Statutory Audit Firm, continue in office in accordance with Section 383(2) of the Companies Act 2014.

On behalf of the Directors

/s/John L. Stauch  
Director

/s/ Glynis A. Bryan  
Director

February 19, 2019

**PENTAIR PLC**  
**STATEMENT OF DIRECTORS' RESPONSIBILITIES**

The directors are responsible for preparing the directors' report and the financial statements in accordance with the Companies Act 2014.

Irish company law requires the directors to prepare financial statements for each financial year. Under the law, the directors have elected to prepare the group financial statements in accordance with accounting principles generally accepted in the United States of America ("US GAAP"), as defined in Section 279 of the Companies Act 2014 to the extent that the use of those principles in preparation of the group financial statements does not contravene any provision of Part 6 of the Companies Act 2014, and the parent company financial statements in accordance with FRS 102 The Financial Reporting Standard applicable in the U.K. and Republic of Ireland ("relevant financial reporting framework"). Under company law, the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the assets, liabilities and financial position of the group and the company as at the financial year end date and of the profit or loss of the group for the financial year and otherwise comply with the Companies Act 2014.

In preparing the group and company financial statements, the directors are required to:

- select suitable accounting policies for the group and the parent company financial statements and then apply them consistently;
- make judgments and estimates that are reasonable and prudent;
- state whether the financial statements have been prepared in accordance with applicable accounting standards, identify those standards, and note the effect and the reasons for any material departure from those standards; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the company will continue in business.

The directors are responsible for ensuring that the company keeps or causes to be kept adequate accounting record which correctly explain and record the transactions of the company, enable at any time the assets, liabilities, financial position and profit or loss of the group and company to be determined with reasonable accuracy, enable them to ensure that the group and company financial statements and directors' report comply with the Companies Act 2014 and enable financial statements to be audited. They are also responsible for safeguarding the assets of the company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Legislation in Ireland governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions. The directors are responsible for the maintenance and integrity of the corporate and financial information included on the company's website.

## **INDEPENDENT AUDITOR’S REPORT TO THE MEMBERS OF PENTAIR PLC (the “GROUP”)**

### **Report on the audit of the financial statements**

#### **Opinion on the financial statements of Pentair plc**

In our opinion the Group and Parent Company financial statements:

- give a true and fair view of the assets, liabilities and financial position of the Group and Parent Company as at 31 December 2018 and of the profit of the Group for the financial year then ended; and
- have been properly prepared in accordance with the relevant financial reporting frameworks and, in particular, with the requirements of the Companies Act 2014.

The financial statements we have audited comprise:

the Group financial statements:

- the Consolidated Profit and Loss Account and the Statement of Comprehensive Profit (Loss);
- the Consolidated Balance Sheet;
- the Consolidated Reconciliation of Movement in Shareholders’ Funds;
- the Statement of Cash Flows; and
- the related notes 1 to 27 including a summary of significant accounting policies as set out in note 1.

the Parent Company financial statements:

- the Company Balance sheet;
- the Company Statement of Cash Flows;
- the Company Statement of Changes in Equity; and
- the related notes 1 to 10 including a summary of significant accounting policies as set out in note 1.

The relevant financial reporting framework that has been applied in the preparation of the Group financial statements is the Companies Act 2014 and US Generally Accepted Accounting Principles (US GAAP), as defined in Section 279 of the Companies Act 2014, to the extent that the use of those principles in the preparation of the financial statements does not contravene Part VI of the Companies Act 2014 (“the relevant financial reporting framework”).

The relevant financial reporting framework that has been applied in the preparation of the Parent Company financial statements is the Companies Act 2014 and FRS 102 “The Financial Reporting Standard applicable in the UK and Republic of Ireland” issued by the Financial Reporting Council (“the relevant financial reporting framework”).

#### **Basis for opinion**

We conducted our audit in accordance with International Standards on Auditing (Ireland) (ISAs (Ireland)) and applicable law. Our responsibilities under those standards are described below in the “*Auditor’s responsibilities for the audit of the financial statements*” section of our report.

We are independent of the Group and Parent Company in accordance with the ethical requirements that are relevant to our audit of the financial statements in Ireland, including the Ethical Standard issued by the Irish Auditing and Accounting Supervisory Authority, as applied to listed entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

## Summary of our audit approach

### *Key audit matters*

The key audit matters that we identified in the current year were:

- Valuation of Indefinite-life Intangible Assets;
- Completeness of Unrecognised Tax Positions; and
- Valuation of Pension and Other Post-Retirement Plan Obligation.

Within this report, any new key audit matters are identified with and any key audit matters which are the same as the prior year identified with.

### *Materiality*

The materiality that we used for the Group and Parent Company financial statements in the current year was \$24,000,000 which was determined on the basis of profit before tax.

### *Scoping*

We determined the scope of our audit by obtaining an understanding of the Group and Parent Company and its environment, including Group-wide controls, and assessing the risks of material misstatement at the Group level.

### *Significant changes in our approach*

No significant changes to note.

### **Conclusions relating to going concern**

We have nothing to report in respect of the following matters in relation to which ISAs (Ireland) require us to report to you where:

- the directors' use of the going concern basis of accounting in preparation of the financial statements is not appropriate; or
- the directors have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the Group or Parent Company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

### **Key Audit Matters**

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current financial year and include the most significant assessed risks of material misstatement (whether or not due to fraud) we identified, including those which had the greatest effect on: the overall audit strategy, the allocation of resources in the audit; and directing the efforts of the engagement team. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

## Valuation of Indefinite-life Intangible Assets

**Key audit matter description** The assessment of the potential impairment of indefinite-lived intangible assets requires significant judgement in determining the appropriate assumptions when projecting future cash flows for these assets.

The indefinite-life intangible asset balance was \$159m as of 31 December 2018, (2017: \$163m).

Refer to note 1 (accounting policy for indefinite-life intangible assets) and note 5 in the financial statements.

**How the scope of our audit responded to the key audit matter** In order to evaluate management's assumptions and data inputs used in the valuation of indefinite-lived intangible assets, we performed the following specific procedures:

- We obtained an understanding of management's controls over the development and approval of the projections, and performed testing of relevant controls, which involved reviews by senior members of management to ensure the assumptions used are appropriate.
- We performed risk assessment procedures that included gaining an understanding of the key changes to the business to determine the nature, timing and extent of procedures to be performed over management's assumptions and assessing whether there had been any triggering events or conditions during 2018 and whether these have been factored into management's assessment.
- Assisted by Deloitte fair value specialists within our audit team, we challenged the key assumptions made by management for a sample of indefinite-lived intangibles. Our audit procedures for indefinite lived intangible assets included: (1) Assessment of the revenue growth assumptions used within the forecasts, (2) recalculation of the discount rate, and (3) validation of the royalty rate.

**Key observations** Based on the evidence obtained, we found that the data and assumptions used by management in the valuation of indefinite-life intangible assets are within a range we consider reasonable.

## Completeness of Unrecognised Tax Positions

**Key audit matter description** The calculation of unrecognized tax positions ("UTP") involves assessing uncertainties in the application of complex tax regulations in a multitude of jurisdictions. There are complexities in identifying and evaluating these tax positions due to the disaggregated nature of the Group.

As of 31 December 2018, the Group's gross UTP balance was \$51.4m, (2017 \$13.8m).

Refer also to note 1 (accounting policy for income taxes) and note 10 in the financial statements.

**How the scope of our audit responded to the key audit matter** In order to assess the completeness of unrecognized tax positions, we performed the following specific procedures:

We obtained an understanding of management's controls over the identification and review of unrecognized tax positions, and performed testing of relevant controls, being periodic reviews by members of management over tax positions and cross border interest charges.

We performed risk assessment procedures in order to determine the nature, timing and extent of procedures to be performed over unrecognized tax positions and to identify material unrecognized tax positions. For these we have performed audit procedures to assess if the criteria to determine that the positions were supportable.

Assisted by Deloitte tax specialists as part of our audit team, we performed periodic inquiries of the Tax and Corporate Controlling departments to assess the measurement of unrecognized tax positions, the determination of the basis of the estimates and any changes in the business environment in order to assess the completeness of the balance. The testing performed with assistance from our tax specialists included: (1) verifying the mathematical accuracy of the provision calculation and rate reconciliation; (2) testing a selection of permanent adjustments and deferred tax balances; (3) evaluating the possible sources of taxable income; (4) assessing material uncertain tax positions and evaluating against the more likely than not criteria; and (5) ensuring that the valuation allowances are appropriate and complete.

**Key observations** Based on the evidence obtained, we found that the data and estimates used by management in the calculation of unrecognized tax positions are within a range we consider to be reasonable.

## **Valuation of Pension and Other Post-Retirement Plan Obligation**

**Key audit matter description** Significant estimates are made in valuing the Group's retirement benefit obligation and the related mark-to-market adjustment. Small changes in assumptions and estimates used to value the Group's pension obligation may have a significant impact on the Group's financial position.

As of 31 December 2018, the Pension and other Post-Retirement Plan Obligation is \$277.9m (2017: \$473.8m)

Refer to note 1 (accounting policy for pension and other post-retirement plans) and note 11 in the financial statements.

**How the scope of our audit responded to the key audit matter** In order to assess the Group's valuation of pension and other post retirement benefit obligations, we performed the following specific procedures;

- We obtained an understanding of management's controls over the development and approval of the assumptions used, and performed testing of relevant controls over approval of the assumptions by management.
- We performed risk assessment procedures that included gaining an understanding of the key assumptions used in the pension and other post retirement plans to determine the nature, timing and extent of procedures to be performed over the assumptions used.
- We evaluated the Group's accounting for pension and other post-retirement plans through a combination of analytical and substantive testing procedures over a sample of plan assets and the benefits paid. Assisted by Deloitte actuarial specialists as part of our audit team, we challenged the discount rate, rate of return and mark-to-market adjustment recorded by the Company in order to assess the pension valuations.

**Key observations** Based on our audit of the principal assumptions, we found that the data and estimates used by management in the valuation of the Group's retirement benefit obligation are within a range we consider to be reasonable.

Our audit procedures relating to these matters were designed in the context of our audit of the financial statements as a whole, and not to express an opinion on individual accounts or disclosures. Our opinion on the financial statements is not modified with respect to any of the risks described above, and we do not express an opinion on these individual matters.

### **Our application of materiality**

We define materiality as the magnitude of misstatement that makes it probable that the economic decisions of a reasonably knowledgeable person, relying on the financial statements, would be changed or influenced. We use materiality both in planning the scope of our audit work and in evaluating the results of our work.

We determined materiality for the Group to be \$24,000,000 which is 6% of profit before tax. We have considered profit before tax to be the critical component for determining materiality because it is of the most importance to the principle external users of the financial statements.

As Pentair plc, the Company, is a component that is consolidated into Pentair plc and subsidiaries, the materiality determination for the Group audit as noted above was utilized for the audit of the Company Financial Statements as component materiality cannot exceed Group materiality.

We agreed with the Audit Committee that we would report to them any audit differences in excess of \$1,200,000, as well as differences below that threshold which, in our view, warranted reporting on qualitative grounds. We also report to the Audit Committee on disclosure matters that we identified when assessing the overall presentation of the financial statements.

### **An overview of the scope of our audit**

We determined the scope of our audit by obtaining an understanding of the Group and its environment, including Group-wide controls, and assessing the risks of material misstatement at the Group level. Based on that assessment, we focused our Group audit scope primarily on the audit work of nine components. Five of these were subject to a full audit, whilst the remaining four were subject to specified audit procedures where the extent of our testing was based on our assessment of the risks of material misstatement and of the materiality of the Group's operations in those components. The five significant components comprised 73% of total turnover for the year ended December 31, 2018.

They were also selected to provide an appropriate basis for undertaking audit work to address the risks of material misstatement identified above. Our audit work at the nine components was executed at levels of materiality applicable to each individual component which were lower than Group materiality and ranged from \$18m to \$21.6m.

The Parent Company is audited directly by the Group audit team.

We leveraged Deloitte component auditors in the United States. A site visit was performed by the Group team to the US location.

### **Other information**

The directors are responsible for the other information. The other information comprises the information included in the Directors' Report and Consolidated Financial Statements, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

### **Auditor's responsibilities for the audit of the financial statements**

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (Ireland) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs (Ireland), we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group and Parent Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.
- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group and Parent Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of the auditor's report. However, future events or conditions may cause the entity (or where relevant, the Group) to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the business activities within the Group to express an opinion on the consolidated financial statements. The Group auditor is responsible for the direction, supervision and performance of the Group audit. The Group auditor remains solely responsible for the audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that the auditor identifies during the audit.

For listed entities and public interest entities, the auditor also provides those charged with governance with a statement that the auditor has complied with relevant ethical requirements regarding independence, including the Ethical Standard for Auditors (Ireland) 2016, and communicates with them all relationships and other matters that may be reasonably be thought to bear on the auditor's independence, and where applicable, related safeguards.

Where the auditor is required to report on key audit matters, from the matters communicated with those charged with governance, the auditor determines those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. The auditor describes these matters in the auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, the auditor determines that a matter should not be communicated in the auditor's report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

This report is made solely to the Company's members, as a body, in accordance with Section 391 of the Companies Act 2014. Our audit work has been undertaken so that we might state to the Company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Company and the Company's members as a body, for our audit work, for this report, or for the opinions we have formed.

## **Report on other legal and regulatory requirements**

### **Opinion on other matters prescribed by the Companies Act 2014**

Based solely on the work undertaken in the course of the audit, we report that:

- We have obtained all the information and explanations which we consider necessary for the purposes of our audit.
- In our opinion the accounting records of the Parent Company were sufficient to permit the financial statements to be readily and properly audited.
- The Parent Company balance sheet is in agreement with the accounting records.
- In our opinion the information given in those parts of the directors' report as specified for our review is consistent with the financial statements and has been prepared in accordance with the Companies Act 2014.

### **Matters on which we are required to report by exception**

Based on the knowledge and understanding of the Group and Parent Company and its environment obtained in the course of the audit, we have not identified material misstatements in those parts of the directors' report that have been specified for our review.

The Companies Act 2014 also requires us to report to you if, in our opinion, the Company has not provided the information required by Regulation 5(2) to 5(7) of the European Union (Disclosure of Non-Financial and Diversity Information by certain large undertakings and groups) Regulations 2017 (as amended) for the financial year ended 31 December 2018. We have nothing to report in this regard.

We have nothing to report in respect of the provisions in the Companies Act 2014 which require us to report to you if, in our opinion, the disclosures of directors' remuneration and transactions specified by law are not made.

/s/ Richard Howard

For and on behalf of Deloitte Ireland LLP

Chartered Accountants and Statutory Audit Firm

Deloitte & Touche House, Earlsfort Terrace, Dublin 2

19 February 2019

**Pentair plc and Subsidiaries**  
**Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss)**

	Financial years ended December 31						
		2018			2017		
		Note	Continuing Operations	Discontinued Operations (Note 2)	Total	Continuing Operations	Discontinued Operations (Note 2)
<i>In millions, except per-share data</i>							
Turnover	14	\$ 2,965.1	\$ 693.9	\$ 3,659.0	\$ 2,845.7	\$ 2,548.2	\$ 5,393.9
Cost of goods sold		1,917.4	424.0	2,341.4	1,858.2	1,596.2	3,454.4
Gross profit		1,047.7	269.9	1,317.6	987.5	952.0	1,939.5
Selling, general and administrative		534.3	237.8	772.1	536.0	589.2	1,125.2
Research and development		76.7	14.6	91.3	73.2	48.3	121.5
Operating profit		436.7	17.5	454.2	378.3	314.5	692.8
Loss (gain) on sale of businesses		7.3	—	7.3	4.2	(183.5)	(179.3)
Loss on early extinguishment of debt		17.1	—	17.1	101.4	—	101.4
Interest receivable and similar income		(11.1)	(0.2)	(11.3)	(9.9)	(0.3)	(10.2)
Interest payable and similar charges	16	43.7	1.2	44.9	97.2	0.3	97.5
Other (income) expense		(0.1)	(15.3)	(15.4)	12.6	(2.6)	10.0
Profit before taxation		379.8	31.8	411.6	172.8	500.6	673.4
Taxation	10	58.1	6.1	64.2	58.7	(51.8)	6.9
<b>Profit of the group for the financial year</b>		<b>\$ 321.7</b>	<b>\$ 25.7</b>	<b>\$ 347.4</b>	<b>\$ 114.1</b>	<b>\$ 552.4</b>	<b>\$ 666.5</b>
<b>Comprehensive profit (loss), net of tax</b>							
Profit of the group for the financial year		\$ 321.7	\$ 25.7	\$ 347.4	\$ 114.1	\$ 552.4	\$ 666.5
Changes in cumulative translation adjustment		57.8	(47.8)	10.0	123.3	374.2	497.5
Changes in market value of derivative financial instruments, net of tax		4.8	—	4.8	(4.6)	—	(4.6)
<b>Comprehensive profit (loss)</b>		<b>\$ 384.3</b>	<b>\$ (22.1)</b>	<b>\$ 362.2</b>	<b>\$ 232.8</b>	<b>\$ 926.6</b>	<b>\$ 1,159.4</b>
<b>Earnings per ordinary share</b>							
Basic	3	\$ 1.83	\$ 0.15	\$ 1.98	\$ 0.63	\$ 3.04	\$ 3.67
Diluted	3	\$ 1.81	\$ 0.15	\$ 1.96	\$ 0.62	\$ 3.01	\$ 3.63

*See accompanying notes to consolidated financial statements.*

**Pentair plc and Subsidiaries**  
**Consolidated Balance Sheets as at 31 December 2018**

<i>In millions</i>	Note	<b>December 31</b>	
		<b>2018</b>	<b>2017</b>
<b>Fixed assets</b>			
Intangible assets	5	\$ 2,349.0	\$ 2,434.6
Tangible assets	18	272.6	279.8
Financial assets	21	77.1	81.4
Fixed assets held for sale	2	—	3,989.6
<b>Total fixed assets</b>		<b>2,698.7</b>	<b>6,785.4</b>
<b>Current assets</b>			
Stocks	7	387.5	356.9
Debtors	22	646.0	697.1
Cash at bank and in hand		74.3	86.3
Current assets held for sale	2	—	708.0
<b>Total current assets</b>		<b>1,107.8</b>	<b>1,848.3</b>
Creditors (amounts falling due within one year)	19	1,119.6	996.1
Creditors held for sale (amounts falling due within one year)	2	—	352.6
<b>Net current (liabilities) assets</b>		<b>(11.8)</b>	<b>499.6</b>
<b>Total assets less current liabilities</b>		<b>2,686.9</b>	<b>7,285.0</b>
Creditors (amounts falling due after more than one year)	20	503.0	1,350.3
Provisions for liabilities	23	347.8	351.7
Creditors held for sale (amounts falling due after more than one year)	2	—	61.1
Provisions for liabilities held for sale	2	—	484.1
<b>Net assets</b>		<b>\$ 1,836.1</b>	<b>\$ 5,037.8</b>
<b>Capital and Reserves</b>			
Called-up share capital presented as equity	12	\$ 1.7	\$ 1.8
Share premium account		101.5	77.2
Other reserves		1,792.3	2,720.5
Profit and loss account		169.2	2,481.7
Accumulated other comprehensive loss	6	(228.6)	(243.4)
<b>Total shareholders' funds</b>		<b>\$ 1,836.1</b>	<b>\$ 5,037.8</b>

*See accompanying notes to consolidated financial statements.*

Approved by the Board of Directors on February 19, 2019 and signed on its behalf by:

/s/John L. Stauch  
Director

/s/ Glynis A. Bryan  
Director

**Pentair plc and Subsidiaries**  
**Consolidated Statements of Cash Flows**

<i>In millions</i>	Financial years ended December 31	
	2018	2017
<b>Operating activities</b>		
Profit of the group for the financial year	\$ 347.4	\$ 666.5
Profit from discontinued operations, net of tax	(25.7)	(371.3)
Gain from sale of discontinued operations, net of tax	—	(181.1)
<b>Adjustments to reconcile profit of the group to net cash provided by (used for) operating activities</b>		
Equity income of unconsolidated subsidiaries	(8.4)	(1.3)
Depreciation	49.7	50.8
Amortization	34.9	36.4
Loss on sale of businesses	7.3	4.2
Deferred taxation	(4.1)	(18.0)
Share-based compensation	20.9	39.6
Trade name and other impairment	12.0	15.6
Loss on early extinguishment of debt	17.1	101.4
<b>Changes in assets and liabilities, net of effects of business acquisitions</b>		
Trade debtors	(15.3)	(13.4)
Stocks	(40.1)	(20.5)
Trade creditors	58.3	15.6
Other	4.1	(45.9)
Net cash provided by operating activities of continuing operations	458.1	278.6
Net cash provided by (used for) operating activities of discontinued operations	(19.0)	341.6
Net cash provided by operating activities	439.1	620.2
<b>Investing activities</b>		
Capital expenditures	(48.2)	(39.1)
Proceeds from sale of tangible assets	0.2	3.7
(Payments due to) proceeds from sale of businesses and other	(12.8)	2,759.4
Acquisitions, net of cash acquired	(0.9)	(45.9)
Net cash provided by (used for) investing activities of continuing operations	(61.7)	2,678.1
Net cash used for investing activities of discontinued operations	(7.1)	(47.7)
Net cash provided by (used for) investing activities	(68.8)	2,630.4
<b>Financing activities</b>		
Net receipts (repayments) of commercial paper and revolving long-term debt	39.7	(913.1)
Repayment of long-term debt	(675.1)	(2,009.3)
Premium paid on early extinguishment of debt	(16.0)	(94.9)
Transfer of cash to nVent	(74.2)	—
Distribution of cash from nVent	993.6	—
Shares issued to employees, net of shares withheld	13.3	37.2
Repurchases of ordinary shares	(500.0)	(200.0)
Dividends paid	(187.2)	(251.7)
Other	(2.0)	(0.8)
Net cash used for financing activities	(407.9)	(3,432.6)
<b>Change in cash held for sale</b>	27.0	(5.4)
<b>Effect of exchange rate changes on cash at bank and in hand</b>	(1.4)	56.8
<b>Change in cash at bank and in hand</b>	(12.0)	(130.6)
Cash at bank and in hand, beginning of financial year	86.3	216.9
<b>Cash at bank and in hand, end of financial year</b>	\$ 74.3	\$ 86.3
<b>Supplemental disclosure of cash flow information</b>		
Cash paid for interest, net	\$ 43.7	\$ 107.2
Cash paid for income taxes, net	92.9	362.1

*See accompanying notes to consolidated financial statements.*

**Pentair plc and Subsidiaries**  
**Consolidated Reconciliation of Movements in Shareholders' Funds**

<i>In millions</i>	<b>Called-up &amp; fully paid share capital</b>		<b>Other reserves</b>				<b>Accumulated other comprehensive loss (note 6)</b>	<b>Total</b>
	<b>Number</b>	<b>Amount</b>	<b>Share premium account</b>	<b>Capital redemption reserve</b>	<b>Other</b>	<b>Profit and loss account</b>		
Balance - December 31, 2016	181.8	\$ 1.8	\$ 31.6	\$ 0.1	\$ 2,889.1	\$ 2,068.1	\$ (736.3)	\$ 4,254.4
Profit after taxation	—	—	—	—	—	666.5	—	666.5
Other comprehensive income, net of tax	—	—	—	—	—	—	492.9	492.9
Dividends declared	—	—	—	—	—	(252.9)	—	(252.9)
Share repurchase	(3.0)	—	—	—	(200.0)	—	—	(200.0)
Exercise of options, net of shares tendered for payment	1.2	—	45.6	—	—	—	—	45.6
Issuance of restricted shares, net of cancellations	0.4	—	—	—	—	—	—	—
Shares surrendered by employees to pay taxes	(0.1)	—	—	—	(8.3)	—	—	(8.3)
Share-based compensation	—	—	—	—	39.6	—	—	39.6
<b>Balance - December 31, 2017</b>	<b>180.3</b>	<b>\$ 1.8</b>	<b>\$ 77.2</b>	<b>\$ 0.1</b>	<b>\$ 2,720.4</b>	<b>\$ 2,481.7</b>	<b>\$ (243.4)</b>	<b>\$ 5,037.8</b>
Profit after taxation	—	—	—	—	—	347.4	—	347.4
Cumulative effect of accounting changes	—	—	—	—	—	(214.0)	—	(214.0)
Other comprehensive income, net of tax	—	—	—	—	—	—	62.6	62.6
Distribution to nVent	—	—	—	—	(438.2)	(2,291.0)	(47.8)	(2,777.0)
Dividends declared	—	—	—	—	—	(154.9)	—	(154.9)
Share repurchase	(10.2)	(0.1)	—	—	(499.9)	—	—	(500.0)
Exercise of options, net of shares tendered for payment	0.9	—	24.3	—	—	—	—	24.3
Issuance of restricted shares, net of cancellations	0.5	—	—	—	—	—	—	—
Shares surrendered by employees to pay taxes	(0.1)	—	—	—	(11.0)	—	—	(11.0)
Share-based compensation	—	—	—	—	20.9	—	—	20.9
<b>Balance - December 31, 2018</b>	<b>171.4</b>	<b>\$ 1.7</b>	<b>\$ 101.5</b>	<b>\$ 0.1</b>	<b>\$ 1,792.2</b>	<b>\$ 169.2</b>	<b>\$ (228.6)</b>	<b>\$ 1,836.1</b>

*See accompanying notes to consolidated financial statements.*

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

**1. Basis of Presentation and Summary of Significant Accounting Policies**

***Basis of presentation***

Pentair plc, is a public limited company, incorporated in the Republic of Ireland under the Companies Act 2014. The books and accounting records of Pentair plc are maintained at the Company's executive office at Regal House, 70 London Road, Twickenham, London, TW13QS U.K. and are readily accessible at Pentair plc's registered address of Arthur Cox, 10 Earlsfort Terrace, Dublin 2, Ireland.

The directors have elected to prepare the consolidated financial statements in accordance with the Companies Act 2014 which provides that a true and fair view of the assets, liabilities and financial performance may be given by preparing the financial statements in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"), as defined in Section 279 of the Companies Act 2014 to the extent that the use of those principles in the preparation of the financial statements does not contravene any provision of Part 6 of the Companies Act 2014 ("the relevant financial reporting framework").

These consolidated financial statements were prepared in accordance with Irish company law, to present to shareholders and file with the Companies Registration Office in Ireland. Accordingly, these consolidated financial statements include disclosures and other presentational and measurement amendments required by the Republic of Ireland's Companies Act 2014 in addition to those required under U.S. GAAP.

The accompanying consolidated financial statements have been prepared in United States dollars ("USD") and reflect the consolidated operations of Pentair plc and its subsidiaries, both the United States ("U.S.") and non-U.S., which we control (Pentair plc and all its subsidiaries, hereinafter referred to as "Pentair," "we," "us," "our," or the "Group"), and where deemed appropriate the presentation format varies from the prescribed formats in Schedule 3 of the Companies Act 2014. Intercompany accounts and transactions have been eliminated. Investments in companies of which we own 20% to 50% of the voting stock or have the ability to exercise significant influence over operating and financial policies of the investee are accounted for using the equity method of accounting and as a result, our share of the earnings or losses of such equity affiliates is included in the Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss).

***Electrical separation***

On April 30, 2018, Pentair completed the separation of its Electrical business from the rest of Pentair (the "Separation") by means of a dividend in specie of the Electrical business, which was effected by the transfer of the Electrical business from Pentair to nVent Electric plc ("nVent") and the issuance by nVent of ordinary shares directly to Pentair shareholders (the "Distribution"). On May 1, 2018, following the Separation and Distribution, nVent became an independent publicly traded company, trading on the New York Stock Exchange under the symbol "NVT."

The Company did not retain any equity interest in nVent. nVent's historical financial results are reflected in the Group's consolidated financial statements as a discontinued operation. Refer to Note 2 for further discussion.

In connection with the Distribution of nVent, the Company and nVent entered into several agreements covering administrative and tax matters to provide or obtain services on a transitional basis, as needed, for varying periods after the Distribution. The administrative agreements cover various services such as information technology, human resources and finance. The Company expects all services to be substantially complete within one year after the Distribution.

***Financial year***

Our financial year ends on December 31.

***Use of estimates***

The preparation of our consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in these consolidated financial statements and accompanying notes, disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of turnover and expenses during the reporting period. These estimates include our accounting for valuation of goodwill and indefinite lived intangible assets, estimated allowance for accounts, estimated realizable value on excess and

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

obsolete stocks, percentage of completion turnover recognition, assets acquired and liabilities assumed in acquisitions, estimated selling proceeds from assets held for sale, contingent liabilities, income taxes, pension and other post-retirement benefits and the estimated impact of the new lease standard, discussed below. Actual results could differ from our estimates.

***Turnover recognition***

Turnover is recognized when control of the promised goods or services are transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for transferring those goods or providing services. We account for a contract when it has approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable.

When determining whether the customer has obtained control of the goods or services, we consider any future performance obligations. Generally, there is no post-shipment obligation on product sold other than warranty obligations in the normal and ordinary course of business. In the event significant post-shipment obligations were to exist, turnover recognition would be deferred until Pentair has substantially accomplished what it must do to be entitled to the benefits represented by the turnover.

***Performance obligations***

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account for purposes of revenue recognition. A contract's transaction price is allocated to each distinct performance obligation and recognized as turnover when, or as, the performance obligation is satisfied. The majority of our contracts have a single performance obligation as the promise to transfer the individual goods or services is not separately identifiable from other promises in the contracts and, therefore, not distinct. For contracts with multiple performance obligations, standalone selling price is generally readily observable.

Our performance obligations are satisfied at a point in time or over time as work progresses. Turnover from goods and services transferred to customers at a point in time accounted for 92.5% and 92.4% of our turnover for the twelve months ended December 31, 2018 and 2017, respectively. Turnover on these contracts is recognized when obligations under the terms of the contract with our customer are satisfied; generally this occurs with the transfer of control upon shipment.

Turnover from products and services transferred to customers over time accounted for 7.5% and 7.6% of our turnover for the twelve months ended December 31, 2018 and 2017, respectively. For the majority of our turnover recognized over time, we use an input measure to determine progress towards completion. Under this method, turnover and gross profit are recognized as work is performed generally based on the relationship between the actual costs incurred and the total estimated costs at completion ("the cost-to-cost method") or based on efforts for measuring progress towards completion in situations in which this approach is more representative of the progress on the contract than the cost-to-cost method. Contract costs include labor, material, overhead and, when appropriate, general and administrative expenses. Changes to the original estimates may be required during the life of the contract, and such estimates are reviewed on a regular basis. Turnover and gross profit are adjusted using the cumulative catch-up method for revisions in estimated total contract costs. These reviews have not resulted in adjustments that were significant to our results of operations. For performance obligations related to long term contracts, when estimates of total costs to be incurred on a performance obligation exceed total estimates of turnover to be earned, a provision for the entire loss on the performance obligation is recognized in the period the loss is determined.

On December 31, 2018, we had \$57.2 million of remaining performance obligations on contracts with an original expected duration of one year or more. We expect to recognize the majority of our remaining performance obligations on these contracts within the next 12 to 18 months.

***Sales returns***

The right of return may exist explicitly or implicitly with our customers. Our return policy allows for customer returns only upon our authorization. Goods returned must be product we continue to market and must be in salable condition.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

When the right of return exists, we adjust the transaction price for the estimated effect of returns. We estimate the expected returns based on historical sales levels, the timing and magnitude of historical sales return levels as a percent of sales, type of product, type of customer and a projection of this experience into the future.

***Pricing and sales incentives***

Our contracts may give customers the option to purchase additional goods or services priced at a discount. Options to acquire additional goods or services at a discount can come in many forms, such as customer programs and incentive offerings including pricing arrangements, promotions and other volume-based incentives.

We reduce the transaction price for certain customer programs and incentive offerings including pricing arrangements, promotions and other volume-based incentives that represent variable consideration. Sales incentives given to our customers are recorded using either the expected value method or most likely amount approach for estimating the amount of consideration to which Pentair shall be entitled. The expected value is the sum of probability-weighted amounts in a range of possible consideration amounts. An expected value is an appropriate estimate of the amount of variable consideration when there are a large number of contracts with similar characteristics. The most likely amount is the single most likely amount in a range of possible consideration amounts (that is, the single most likely outcome of the contract). The most likely amount is an appropriate estimate of the amount of variable consideration if the contract has limited possible outcomes (for example, an entity either achieves a performance bonus or does not).

Pricing is established at or prior to the time of sale with our customers, and we record sales at the agreed-upon net selling price. However, one of our businesses allows customers to apply for a refund of a percentage of the original purchase price if they can demonstrate sales to a qualifying end customer. We use the expected value method to estimate the anticipated refund to be paid based on historical experience and reduce sales for the probable cost of the discount. The cost of these refunds is recorded as a reduction of the transaction price.

Volume-based incentives involve rebates that are negotiated at or prior to the time of sale with the customer and are redeemable only if the customer achieves a specified cumulative level of sales or sales increase. Under these incentive programs, at the time of sale, we determine the most likely amount of the rebate to be paid based on forecasted sales levels. These forecasts are updated at least quarterly for each customer, and the transaction price is reduced for the anticipated cost of the rebate. If the forecasted sales for a customer change, the accrual for rebates is adjusted to reflect the new amount of rebates expected to be earned by the customer.

***Shipping and handling costs***

Amounts billed to customers for shipping and handling activities after the customer obtains control are treated as a promised service performance obligation and recorded in *Turnover* in the accompanying Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss). Shipping and handling costs incurred by Pentair for the delivery of goods to customers are considered a cost to fulfill the contract and are included in *Cost of goods sold* in the accompanying Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss).

***Contract assets and liabilities***

Contract assets consist of unbilled amounts resulting from sales under long-term contracts when the cost-to-cost method of turnover recognition is utilized and turnover recognized exceeds the amount billed to the customer, such as when the customer retains a small portion of the contract price until completion of the contract. We typically receive interim payments on sales under long-term contracts as work progresses, although for some contracts, we may be entitled to receive an advance payment. Contract liabilities consist of advanced payments, billings in excess of costs incurred and deferred turnover.

Contract assets are recorded within *Debtors*, and contract liabilities are recorded within *Creditors (amounts falling due within one year)* in the Consolidated Balance Sheets.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

Contract assets and liabilities consisted of the following:

<i>In millions</i>	<b>December 31</b>		<b>\$ Change</b>	<b>% Change</b>
	<b>2018</b>	<b>2017</b>		
Contract assets	\$ 36.5	\$ 51.5	\$ (15.0)	(29.1)%
Contract liabilities	32.8	29.2	3.6	12.3%
Net contract assets	\$ 3.7	\$ 22.3	\$ (18.6)	(83.4)%

The \$18.6 million decrease in net contract assets from December 31, 2017 to December 31, 2018 was primarily the result of timing of milestone payments. Approximately 70% of our contract liabilities at December 31, 2017 were recognized in turnover during the twelve months ended December 31, 2018. There were no impairment losses recognized on our contract assets for the twelve months ended December 31, 2018.

***Practical expedients and exemptions***

We generally expense incremental costs of obtaining a contract when incurred because the amortization period would be less than one year. These costs primarily relate to sales commissions and are recorded in *Selling, general and administrative expense* in the Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss).

We do not disclose the value of unsatisfied performance obligations for contracts with an original expected length of one year or less. Further, we do not adjust the promised amount of consideration for the effects of a significant financing component if we expect, at contract inception, that the period between when we transfer a promised good or service to a customer and when the customer pays for that good or service will be one year or less.

***Turnover by category***

We disaggregate our turnover from contracts with customers by segment, geographic location and vertical, as we believe these best depict how the nature, amount, timing and uncertainty of our turnover and cash flows are affected by economic factors. Refer to Note 14 for turnover disaggregated by segment.

Geographic turnover information for continuing operations, based on geographic destination of the sale, was as follows:

<i>In millions</i>	<b>Years ended December 31</b>	
	<b>2018</b>	<b>2017</b>
U.S.	\$ 1,858.1	\$ 1,752.7
Western Europe	402.7	381.9
Developing <sup>(1)</sup>	476.5	478.2
Other Developed <sup>(2)</sup>	227.8	232.9
Consolidated turnover <sup>(3)</sup>	\$ 2,965.1	\$ 2,845.7

(1) Developing includes China, Eastern Europe, Latin America, the Middle East and Southeast Asia.

(2) Other Developed includes Australia, Canada and Japan.

(3) Turnover held in Ireland, for each of the years presented, were not material.

Vertical turnover information was as follows:

<i>In millions</i>	<b>Years ended December 31</b>	
	<b>2018</b>	<b>2017</b>
Residential	\$ 1,665.9	\$ 1,579.0
Commercial	630.7	604.4
Industrial	668.5	662.3
Consolidated turnover	\$ 2,965.1	\$ 2,845.7

**Pentair plc and Subsidiaries**  
**Notes to consolidated financial statements**

**Research and development**

We conduct research and development (“R&D”) activities primarily in our own facilities, which mostly consist of development of new products, product applications and manufacturing processes. We expense R&D costs as incurred. R&D expenditures from continuing operations during 2018 and 2017 were \$76.7 million and \$73.2 million, respectively.

**Cash equivalents**

We consider highly liquid investments with original maturities of three months or less at the date of acquisition to be cash equivalents.

**Trade debtors and concentration of credit risk**

We record an allowance for doubtful accounts, reducing our debtors balance to an amount we estimate is collectible from our customers. Estimates used in determining the allowance for doubtful accounts are based on current trends, aging of trade debtors, periodic credit evaluations of our customers’ financial condition, and historical collection experience. We generally do not require collateral.

**Stocks**

Stocks are stated at the lower of cost or market with substantially all inventories recorded using the first-in, first-out (“FIFO”) cost method.

**Tangible assets**

Tangible assets are stated at historical cost. We compute depreciation by the straight-line method based on the following estimated useful lives:

	<u>Years</u>
Land improvements	5 to 20
Buildings and leasehold improvements	5 to 50
Machinery and equipment	3 to 15

Significant improvements that add to productive capacity or extend the lives of properties are capitalized. Costs for repairs and maintenance are charged to expense as incurred. When property is retired or otherwise disposed of, the recorded cost of the assets and their related accumulated depreciation are removed from the Consolidated Balance Sheets and any related gains or losses are included in the Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss).

The following table presents geographic *Tangible assets* by region as of December 31:

<i>In millions</i>	<b>2018</b>	<b>2017</b>
U.S.	\$ 156.9	\$ 151.9
Western Europe	76.6	82.8
Developing <sup>(1)</sup>	28.8	33.0
Other Developed <sup>(2)</sup>	10.3	12.1
Consolidated <sup>(3)</sup>	\$ 272.6	\$ 279.8

(1) Developing includes China, Eastern Europe, Latin America, the Middle East and Southeast Asia.

(2) Other Developed includes Australia, Canada and Japan.

(3) Tangible assets held in Ireland, for each of the years presented, were not material.

We review the recoverability of long-lived assets to be held and used, such as tangible assets, when events or changes in circumstances occur that indicate the carrying value of the asset or asset group may not be recoverable. The assessment of possible impairment is based on our ability to recover the carrying value of the asset or asset group from the expected future pre-tax cash flows (undiscounted and without interest charges) of the related operations. If these cash flows are less than the carrying value of such asset or asset group, an impairment loss is recognized for the difference between estimated fair value and carrying value. Impairment losses on long-lived assets held for sale are determined in a similar manner, except that fair values are reduced for the cost to dispose of the assets. The measurement of impairment requires us to estimate future cash flows and the fair value of long-lived assets. We recorded no long-lived asset impairment charges in 2018 or 2017 in conjunction with restructuring activities.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

***Goodwill and identifiable intangible assets***

***Goodwill***

Goodwill represents the excess of the cost of acquired businesses over the net of the fair value of identifiable tangible net assets and identifiable intangible assets purchased and liabilities assumed. Irish company law requires goodwill and indefinite-lived intangible assets to be amortized. However, Pentair does not believe this gives a true and fair view because not all goodwill and intangible assets decline in value. In addition, since goodwill that does decline in value rarely does so on a straight-line basis, straight-line amortization of goodwill over an arbitrary period does not reflect the economic reality. Therefore, in order to present a true and fair view of the economic reality, under U.S. GAAP, goodwill and certain other intangible assets are considered indefinite-lived and are not amortized.

Goodwill is tested at least annually for impairment and is tested for impairment more frequently if events or changes in circumstances indicate that the asset might be impaired. We complete our annual goodwill impairment evaluation as of the first day of the fourth quarter. We last performed a two-step assessment of goodwill impairment as of October 1, 2017, referred to as a “step 1” approach. In the first step of the step 1 approach, the fair value of each reporting unit is compared with the carrying amount of the reporting unit, including goodwill. If the estimated fair value is less than the carrying amount of the reporting unit there is an indication that goodwill impairment exists and a second step must be completed in order to determine the amount of the goodwill impairment, if any, that should be recorded. In the second step of the step 1 approach, an impairment loss is recognized for any excess of the carrying amount of the reporting unit’s goodwill over the implied fair value of that goodwill. The implied fair value of goodwill is determined by allocating the fair value of the reporting unit in a manner similar to a purchase price allocation.

The fair value of each reporting unit is determined using a discounted cash flow analysis and market approach. Projecting discounted future cash flows requires us to make significant estimates regarding future turnovers and expenses, projected capital expenditures, changes in working capital and the appropriate discount rate. Use of the market approach consists of comparisons to comparable publicly-traded companies that are similar in size and industry. Actual results may differ from those used in our valuations. In developing our discounted cash flow analysis, assumptions about future turnovers and expenses, capital expenditures and changes in working capital, are based on our annual operating plan and long-term business plan for each of our reporting units. These plans take into consideration numerous factors including historical experience, anticipated future economic conditions, changes in raw material prices and growth expectations for the industries and end markets we participate in. These assumptions are determined over a six year long-term planning period. The six year growth rates for turnovers and operating profits vary for each reporting unit being evaluated.

Discount rate assumptions for each reporting unit take into consideration our assessment of risks inherent in the future cash flows of the respective reporting unit and our weighted-average cost of capital.

In estimating fair value using the market approach, we identify a group of comparable publicly-traded companies for each reporting unit that are similar in terms of size and product offering. These groups of comparable companies are used to develop multiples based on total market-based invested capital as a multiple of earnings before interest, taxes, depreciation and amortization (“EBITDA”). We determine our estimated values by applying these comparable EBITDA multiples to the operating results of our reporting units. The ultimate fair value of each reporting unit is determined considering the results of both valuation methods.

As of October 1, 2018, we performed a qualitative assessment, referred to as a “step 0” approach, and determined that it was more likely than not that the fair value of the reporting units exceeded their respective carrying amounts. As a result, the Group was not required to proceed to a “step 1” impairment assessment. Factors considered included the 2017 “step 1” analysis and the calculated excess fair value over carrying amount, financial performance, forecasts and trends, market cap, regulatory and environmental issues, macro-economic conditions, industry and market considerations, raw material costs and management stability. We consider the extent to which each of the adverse events and circumstances identified affect the comparison of the respective reporting unit’s fair value with its carrying amount. We place more weight on the events and circumstances that most affect the respective reporting unit’s fair value or the carrying amount of its net assets. We consider positive and mitigating events and circumstances that may affect its determination of whether it is more likely than not that the fair value exceeds the carrying amount.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

We completed our annual goodwill impairment evaluation as of the first day of the fourth quarter of 2018 and 2017 with no indications of impairment. This non-recurring fair value measurement is a “Level 3” measurement under the fair value hierarchy in Note 9.

***Identifiable intangible assets***

Our primary identifiable intangible assets include: customer relationships, trade names, proprietary technology and patents. Identifiable intangibles with finite lives are amortized and those identifiable intangibles with indefinite lives are not amortized. Identifiable intangible assets that are subject to amortization are evaluated for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. Identifiable intangible assets not subject to amortization are tested for impairment annually or more frequently if events warrant. We complete our annual impairment test during the fourth quarter each year for those identifiable assets not subject to amortization.

We compute amortization by the straight-line method based on the following estimated useful lives:

	<b><u>Years</u></b>
Customer relationships	5 to 20
Trade names	5 to 10
Proprietary technology	5 to 20
Patents	5 to 20
Backlog	1 to 5

The impairment test for trade names consists of a comparison of the fair value of the trade name with its carrying value. Fair value is measured using the relief-from-royalty method. This method assumes the trade name has value to the extent that the owner is relieved of the obligation to pay royalties for the benefits received from them. This method requires us to estimate the future turnover for the related brands, the appropriate royalty rate and the weighted average cost of capital. The non-recurring fair value measurement is a “Level 3” measurement under the fair value hierarchy described in Note 9.

There were no impairment charges recorded in 2018 for identifiable intangible assets.

An impairment charge of \$8.8 million was recorded in 2017 related to certain trade names in Filtration Solutions and Flow Technologies as a result of lower forecasted sales volume or rebranding strategies implemented in the fourth quarter of 2017. The trade name impairment charges were recorded in *Selling, general and administrative* in our Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss).

***Income taxes***

We use the asset and liability approach to account for income taxes. Under this method, deferred tax assets and liabilities are recognized for the expected future tax consequences of differences between the carrying amounts of assets and liabilities and their respective tax bases using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period when the change is enacted. We maintain valuation allowances unless it is more likely than not that all or a portion of the deferred tax assets will be realized. Changes in valuation allowances from period to period are included in our tax provision in the period of change. We recognize the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs.

***Pension and other post-retirement plans***

We sponsor U.S. and non-U.S. defined-benefit pension and other post-retirement plans. The pension and other post-retirement benefit costs for group-sponsored benefit plans are determined from actuarial assumptions and methodologies, including discount rates and expected returns on plan assets. These assumptions are updated annually and are disclosed in Note 11.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

We recognize changes in the fair value of plan assets and net actuarial gains or losses for pension and other post-retirement benefits annually in the fourth quarter each year (“mark-to-market adjustment”) and, if applicable, in any quarter in which an interim remeasurement is triggered. Net actuarial gains and losses occur when the actual experience differs from any of the various assumptions used to value our pension and other post-retirement plans or when assumptions change, as they may each year. The remaining components of pension expense, including service and interest costs and estimated return on plan assets, are recorded on a quarterly basis.

***Insurance subsidiary***

We insure certain general and product liability, property, workers’ compensation and automobile liability risks through our regulated wholly-owned captive insurance subsidiary, Penwald Insurance Company (“Penwald”). Reserves for policy claims are established based on actuarial projections of ultimate losses. As of December 31, 2018 and 2017, reserves for policy claims included in *Provisions for liabilities* were \$60.9 million and \$61.5 million, respectively.

***Share-based compensation***

We account for share-based compensation awards on a fair value basis. The estimated grant date fair value of each option award is recognized in the Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss) on an accelerated basis over the requisite service period (generally the vesting period). The estimated fair value of each option award is calculated using the Black-Scholes option-pricing model. From time to time, we have elected to modify the terms of the original grant. These modified grants are accounted for as a new award and measured using the fair value method, resulting in the inclusion of additional compensation expense in our Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss).

Restricted share awards and units (“RSUs”) are recorded as compensation cost over the requisite service periods based on the market value on the date of grant.

Performance share units (“PSUs”) are stock awards where the ultimate number of shares issued will be contingent on the Company’s performance against certain financial performance targets. The fair value of each PSU is based on the market value on the date of grant. We recognize expense related to the estimated vesting of our PSUs granted. The estimated vesting of the PSUs is based on the probability of achieving certain financial performance thresholds over the specified performance period.

***Earnings per ordinary share***

We present two calculations of earnings per ordinary share (“EPS”). Basic EPS equals profit divided by the weighted-average number of ordinary shares outstanding during the period. Diluted EPS is computed by dividing profit by the sum of weighted-average number of ordinary shares outstanding plus dilutive effects of ordinary share equivalents.

***Derivative financial instruments***

We recognize all derivatives, including those embedded in other contracts, as either assets or liabilities at fair value in our Consolidated Balance Sheets. If the derivative is designated and is effective as a cash-flow hedge, the effective portion of changes in the fair value of the derivative are recorded in *Accumulated other comprehensive profit/(loss)* (“AOCI”) as a separate component of shareholders’ funds in the Consolidated Balance Sheets and is recognized in the Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss) when the hedged item affects earnings. If the underlying hedged transaction ceases to exist or if the hedge becomes ineffective, all changes in fair value of the related derivatives that have not been settled are recognized in current earnings. For a derivative that is not designated as or does not qualify as a hedge, changes in fair value are reported in earnings immediately.

Gains and losses on net investment hedges are included in AOCI as a separate component of equity in the Consolidated Balance Sheets.

We use derivative instruments for the purpose of hedging interest rate and currency exposures, which exist as part of ongoing business operations. We do not hold or issue derivative financial instruments for trading or speculative purposes. All other contracts that contain provisions meeting the definition of a derivative also meet the requirements of and have been designated as, normal purchases or sales. Our policy is not to enter into contracts with terms that cannot be designated as normal purchases or sales. From time to time, we may enter into short duration foreign currency contracts to hedge foreign currency risks.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

***Foreign currency translation***

The financial statements of subsidiaries located outside of the U.S. are generally measured using the local currency as the functional currency, except for certain corporate entities outside of the U.S. which are measured using USD. Assets and liabilities of these subsidiaries are translated at the rates of exchange at the balance sheet date. Income and expense items are translated at average monthly rates of exchange. The resultant translation adjustments are included in AOCI, a component of shareholders' funds.

***New accounting standards***

In February 2016, the Financial Accounting Standards Board issued ASU No. 2016-02, "Leases" ("the new lease standard" or "ASC 842"), which requires an entity to recognize both assets and liabilities arising from financing and operating leases, along with additional qualitative and quantitative disclosures. The new lease standard requirements are effective for annual reporting periods beginning after December 15, 2018, including interim periods within that reporting period. We adopted the new lease guidance as of January 1, 2019, using the transition method of adoption applied to those leases which were not completed as of that date. Under the transition method of adoption, comparative periods will not be restated for the new standard. We also elected the package of practical expedients permitted under the transition guidance, which among other things allowed us to carry forward the historical lease classification. In preparation for adoption of the new guidance, we have implemented appropriate changes to our business processes, systems and controls to support preparation of financial information and have reached conclusions on key accounting assessments related to the standard. As a result of these assessments, we anticipate the adoption of the new standard to increase assets and liabilities on the consolidated balance sheet by approximately \$75.0 million as of the adoption date. We currently do not expect ASC 842 to have a material effect on either our Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss) or Consolidated Statements of Cash Flows.

On January 1, 2018, we adopted ASU No. 2017-01, "Clarifying the Definition of a Business." This ASU clarifies the definition of a business and provides guidance on whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The adoption of the new standard did not have a material impact on our consolidated financial statements.

On January 1, 2018, we adopted ASU No. 2017-07, "Retirement Benefits-Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost." As a result of the adoption, the interest cost, expected return on plan assets and net actuarial gain/loss components of net periodic pension and post-retirement benefit cost have been reclassified from *Selling, general and administrative expense* to *Other (income) expense*. Only the service cost component remains in *Operating profit* and will be eligible for capitalization in assets on a prospective basis. The effect of the retrospective presentation change related to the net periodic cost of our defined benefit pension and other post-retirement plans on our Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss) was a reclassification of expense of \$13.9 million for the year ended December 31, 2017, from *Selling, general and administrative expense* to *Other (income) expense*.

On January 1, 2018, we adopted ASU No. 2016-16, "Accounting for Income Taxes: Intra-Entity Asset Transfers of Assets Other than Inventory." This ASU requires the tax effects of all intra-entity sales of assets other than inventory to be recognized in the period in which the transaction occurs. The adoption resulted in a \$215.8 million cumulative-effect adjustment (of which \$174.6 million related to nVent) recorded in retained earnings as of the beginning of 2018. The adjustment reflects a \$254.3 million reduction of a prepaid long term tax asset, partially offset by the establishment of \$38.5 million of deferred tax assets.

On January 1, 2018, we adopted ASU No. 2014-09, "Revenue from Contracts with Customers" and the related amendments ("the new revenue standard") using the modified retrospective method. The cumulative impact to our retained earnings at January 1, 2018 was not material. The comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods. We expect the impact of the adoption of the new standard to be immaterial to our net income on an ongoing basis.

## ***Pentair plc and Subsidiaries***

### ***Notes to consolidated financial statements***

A majority of our turnover continue to be recognized when products are shipped from our manufacturing facilities or delivery has occurred, depending on terms of the sale. Under the new revenue standard, timing for recognition of certain revenue may be accelerated such that a portion of revenue will be recognized prior to shipment or delivery dependent upon contract-specific terms.

## **2. Acquisitions and Discontinued Operations**

### ***Acquisitions***

In January 2019, as part of Filtration Solutions, we entered into definitive agreements to acquire Aquion Inc. (“Aquion”) and Pelican Water Systems (“Pelican”) for \$160.0 million and \$120.0 million in cash, respectively, and subject to certain customary adjustments. We completed the Aquion acquisition on February 13, 2019 and the Pelican acquisition on February 12, 2019. Aquion offers a diverse line of water conditioners, water filters, drinking-water purifiers, ozone and ultraviolet disinfection systems, reverse osmosis systems and acid neutralizers for the residential and commercial water treatment industry. Pelican Water Systems provides residential whole home water treatment systems. These acquisitions are not expected to have a material impact on our consolidated financial position, results of operations or cash flows.

During 2017, our continuing operations completed acquisitions with purchase prices totaling \$45.9 million in cash, net of cash acquired. Identifiable intangible assets acquired included \$19.1 million of definite-lived customer relationships with an estimated useful life of 11 years.

In November 2016, our continuing operations completed an acquisition with a purchase price of \$25.0 million in cash, net of cash acquired.

The pro forma impact of these acquisitions was not material.

### ***Discontinued Operations***

#### ***Electrical separation***

On April 30, 2018, we completed the Separation and Distribution. The results of the Electrical business have been presented as discontinued operations and the related assets and liabilities were reclassified as held for sale for all periods presented. The Electrical business had been previously disclosed as a stand-alone reporting segment. Separation costs related to the Separation and Distribution were \$84.2 million and \$39.3 million for the twelve months ended December 31, 2018 and 2017, respectively. These costs are reported in discontinued operations as they represent a cost directly related to the Separation and Distribution and were included within *Selling, general and administrative expenses* in the operating results of discontinued operations.

#### ***Sale of Valves & Controls***

On April 28, 2017, we completed the sale of the Valves & Controls business to Emerson Electric Co. for \$3.15 billion in cash. The sale resulted in a gain of \$181.1 million, net of tax. The results of the Valves & Controls business have been presented as discontinued operations. The Valves & Controls business was previously disclosed as a stand-alone reporting segment. Transaction costs of \$56.4 million related to the sale of Valves & Controls were incurred during the year ended December 31, 2017 and were recorded within *Selling, general and administrative expenses* in the operating results of discontinued operations.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

The carrying amounts of major classes of assets and liabilities that were classified as held for sale on the Consolidated Balance Sheets were as follows:

<i>In millions</i>	<b>December 31</b>
	<b>2017</b>
Cash at bank and in hand	\$ 27.0
Trade debtors	348.5
Stocks	224.1
Other current assets	108.4
<b>Current assets held for sale</b>	<b>\$ 708.0</b>
Tangible assets, net	\$ 265.8
Goodwill	2,238.2
Intangibles, net	1,236.6
Other non-current assets	249.0
<b>Fixed assets held for sale</b>	<b>\$ 3,989.6</b>
Trade creditors	\$ 174.1
Employee compensation and benefits	70.8
Other current liabilities	107.7
<b>Creditors held for sale (amounts falling due within one year)</b>	<b>\$ 352.6</b>
Income taxes payable	\$ 31.3
Other non-current liabilities	29.8
<b>Creditors held for sale (amounts falling due after more than one year)</b>	<b>\$ 61.1</b>
Pension and other post-retirement compensation and benefits	\$ 189.2
Deferred taxation	286.2
Accrued warranty	2.9
Accrued restructuring	5.3
Environmental liabilities	0.5
<b>Provisions for liabilities held for sale</b>	<b>\$ 484.1</b>

*Pentair plc and Subsidiaries*  
*Notes to consolidated financial statements*

**3. Earnings Per Share**

Basic and diluted earnings per share were calculated as follows:

<i>In millions, except per share data</i>	<b>Financial years ended December 31</b>	
	<b>2018</b>	<b>2017</b>
<b>Profit of the group for the financial year</b>	\$ 347.4	\$ 666.5
<b>Profit from continuing operations of the group for the financial year</b>	\$ 321.7	\$ 114.1
<b>Weighted average ordinary shares outstanding</b>		
Basic	175.8	181.7
Dilutive impact of stock options and restricted stock awards	1.5	2.0
Diluted	177.3	183.7
<b>Earnings per ordinary share</b>		
<i>Basic</i>		
Continuing operations	\$ 1.83	\$ 0.63
Discontinued operations	0.15	3.04
Basic earnings per ordinary share	\$ 1.98	\$ 3.67
<i>Diluted</i>		
Continuing operations	\$ 1.81	\$ 0.62
Discontinued operations	0.15	3.01
Diluted earnings per ordinary share	\$ 1.96	\$ 3.63
<b>Anti-dilutive stock options excluded from the calculation of diluted earnings per share</b>	1.2	1.8

**4. Restructuring**

During 2018 and 2017, we initiated and continued execution of certain business restructuring initiatives aimed at reducing our fixed cost structure and realigning our business. Initiatives during the years ended December 31, 2018 and 2017 included a reduction in hourly and salaried headcount of approximately 300 employees and 250 employees, respectively.

Restructuring related costs included in *Selling, general and administrative* expenses in the Profit and Loss Account and Statement of Comprehensive Profit (Loss) included costs for severance and other restructuring costs as follows:

<i>In millions</i>	<b>Financial years ended December 31</b>	
	<b>2018</b>	<b>2017</b>
Severance and related costs	\$ 13.2	\$ 27.3
Other	27.4	0.9
Total restructuring costs	\$ 40.6	\$ 28.2

Other restructuring costs primarily consist of asset impairment and various contract termination costs.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

Restructuring costs of continuing operations by reportable segment were as follows:

<i>In millions</i>	<b>Financial years ended December 31</b>	
	<b>2018</b>	<b>2017</b>
Aquatic Systems	\$ 15.3	\$ 3.6
Filtration Solutions	14.6	13.0
Flow Technologies	9.3	7.0
Other	1.4	4.6
<b>Consolidated</b>	<b>\$ 40.6</b>	<b>\$ 28.2</b>

Activity related to accrued severance and related costs of continuing operations recorded in *Provision for liabilities* in the Consolidated Balance Sheets is summarized as follows:

<i>In millions</i>	<b>Financial years ended December 31</b>	
	<b>2018</b>	<b>2017</b>
Beginning balance	\$ 34.5	\$ 15.1
Costs incurred	13.2	27.3
Cash payments and other	(20.6)	(7.9)
<b>Ending balance</b>	<b>\$ 27.1</b>	<b>\$ 34.5</b>

**5. Intangible Assets**

The changes in the carrying amount of goodwill for the years ended December 31, 2018 and 2017 by reportable segment were as follows:

<i>In millions</i>	<b>December 31, 2017</b>	<b>Foreign currency translation/other</b>	<b>December 31, 2018</b>
Aquatic Systems	\$ 973.1	\$ (7.2)	\$ 965.9
Filtration Solutions	667.6	(24.1)	643.5
Flow Technologies	472.1	(8.8)	463.3
<b>Total goodwill</b>	<b>\$ 2,112.8</b>	<b>\$ (40.1)</b>	<b>\$ 2,072.7</b>

There has been no impairment of goodwill for the year presented.

**Pentair plc and Subsidiaries**  
**Notes to consolidated financial statements**

Identifiable intangible assets consisted of the following at December 31:

<i>In millions</i>	2018			2017		
	Cost	Accumulated amortization	Net	Cost	Accumulated amortization	Net
<b>Definite-life intangibles</b>						
Customer relationships	\$ 347.1	\$ (247.9)	\$ 99.2	\$ 360.9	\$ (229.9)	\$ 131.0
Trade names	0.4	(0.4)	—	1.5	(1.4)	0.1
Proprietary technology and patents	86.2	(68.4)	17.8	117.0	(89.3)	27.7
Total finite-life intangibles	433.7	(316.7)	117.0	479.4	(320.6)	158.8
<b>Indefinite-life intangibles</b>						
Trade names	159.3	—	159.3	163.0	—	163.0
Total intangibles	\$ 593.0	\$ (316.7)	\$ 276.3	\$ 642.4	\$ (320.6)	\$ 321.8

Identifiable intangible asset amortization expense in 2018 and 2017 was \$34.9 million and \$36.4 million, respectively.

There was no impairment charge for trade name intangible assets in 2018. In 2017, we recorded an impairment charge for trade name intangible assets of \$8.8 million in Filtration Solutions and Flow Technologies.

Estimated future amortization expense for identifiable intangible assets during the next five years is as follows:

<i>In millions</i>	2019	2020	2021	2022	2023
Estimated amortization expense	\$ 27.4	\$ 22.4	\$ 17.3	\$ 10.1	\$ 7.8

**6. Accumulated Other Comprehensive Loss**

Components of *Accumulated Other Comprehensive Loss* consist of the following:

<i>In millions</i>	December 31	
	2018	2017
Cumulative translation adjustments	\$ (211.4)	\$ (221.4)
Market value of derivative financial instruments, net of tax	(17.2)	(22.0)
Accumulated other comprehensive loss	\$ (228.6)	\$ (243.4)

**7. Stocks**

Stocks consisted of the following at December 31:

<i>In millions</i>	December 31	
	2018	2017
Raw materials and supplies	\$ 191.3	\$ 190.8
Work-in-process	64.0	57.9
Finished goods	132.2	108.2
Total stocks	\$ 387.5	\$ 356.9

Aggregate reductions in the carrying value of stocks that were still on hand at December 31, 2018 and 2017, that were deemed to be excess, obsolete, slow-moving or in excess of market, were \$36.5 million and \$42.8 million, respectively.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

**8. Debt**

Debt and the average interest rates on debt outstanding were as follows:

<i>In millions</i>	Average	Maturity	December 31	
	interest rate at December 31, 2018		year	2018
Commercial paper	3.248%	2023	\$ 76.0	\$ 34.0
Revolving credit facilities	3.703%	2023	26.2	28.4
Senior notes - fixed rate <sup>(1)</sup>	2.900%	2018	—	255.3
Senior notes - fixed rate <sup>(1)</sup>	2.650%	2019	250.0	250.0
Senior notes - fixed rate - Euro <sup>(1)</sup>	2.450%	2019	155.1	594.4
Senior notes - fixed rate <sup>(1)</sup>	3.625%	2020	74.0	74.0
Senior notes - fixed rate <sup>(1)</sup>	5.000%	2021	103.8	103.8
Senior notes - fixed rate <sup>(1)</sup>	3.150%	2022	88.3	88.3
Senior notes - fixed rate <sup>(1)</sup>	4.650%	2025	19.3	19.3
Unamortized issuance costs and discounts	N/A	N/A	(5.1)	(6.8)
Total debt			787.6	1,440.7
Less: Current maturities and short-term borrowings (note 19)			405.1	255.3
Long-term debt (note 20)			\$ 382.5	\$ 1,185.4

(1) Senior notes are guaranteed as to payment by Pentair plc and PISG

On April 25, 2018, Pentair, Pentair Investments Switzerland GmbH (“PISG”), Pentair Finance S.à r.l. (“PFSA”) and Pentair, Inc. entered into a credit agreement, providing for a five-year \$800.0 million senior unsecured revolving credit facility (the “Senior Credit Facility”), with Pentair and PISG as guarantors and PFSA and Pentair, Inc. as borrowers. The Senior Credit Facility replaced PFSA’s existing credit facility under that certain Amended and Restated Credit Agreement, dated as of October 3, 2014. PFSA has the option to request to increase the Senior Credit Facility in an aggregate amount of up to \$300.0 million, subject to customary conditions, including the commitment of the participating lenders. The Senior Credit Facility has a maturity date of April 25, 2023. Borrowings under the Senior Credit Facility bear interest at a rate equal to an adjusted base rate or the London Interbank Offered Rate, plus, in each case, an applicable margin. The applicable margin is based on, at PFSA’s election, Pentair’s leverage level or PFSA’s public credit rating.

PFSA is authorized to sell short-term commercial paper notes to the extent availability exists under the Senior Credit Facility. PFSA uses the Senior Credit Facility as back-up liquidity to support 100% of commercial paper outstanding. PFSA had \$76.0 million of commercial paper outstanding as of December 31, 2018 and \$34.0 million as of December 31, 2017, all of which was classified as long-term debt.

Our debt agreements contain various financial covenants, but the most restrictive covenants are contained in the Senior Credit Facility. The Senior Credit Facility contains covenants requiring us not to permit (i) the ratio of our consolidated debt (net of its consolidated unrestricted cash in excess of \$5.0 million but not to exceed \$250.0 million) to our consolidated net income (excluding, among other things, non-cash gains and losses) before interest, taxes, depreciation, amortization and non-cash share-based compensation expense (“EBITDA”) on the last day of any period of four consecutive fiscal quarters to exceed 3.75 to 1.00 (the “Leverage Ratio”) and (ii) the ratio of our EBITDA to our consolidated interest expense, for the same period to be less than 3.00 to 1.00 as of the end of each fiscal quarter. For purposes of the Leverage Ratio, the Senior Credit Facility provides for the calculation of EBITDA giving pro forma effect to certain acquisitions, divestitures and liquidations during the period to which such calculation relates. As of December 31, 2018, we were in compliance with all financial covenants in our debt agreements.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

Total availability under the Senior Credit Facility was \$697.8 million as of December 31, 2018.

In addition to the Senior Credit Facility, we have various other credit facilities with an aggregate availability of \$21.1 million, of which there were no outstanding borrowings at December 31, 2018. Borrowings under these credit facilities bear interest at variable rates.

In June 2018, we used the \$993.6 million of cash received from nVent as a result of the Distribution to pay down commercial paper and revolving credit facilities, redeem the remaining \$255.3 million aggregate principal of our 2.9% fixed rate senior notes due 2018, and complete a cash tender offer in the amount of €363.4 million aggregate principal of our 2.45% senior notes due 2019. All costs associated with the repurchases of debt were recorded as a *Loss on early extinguishment of debt* in the Consolidated Statements of Operations and Comprehensive Income, including \$16.0 million premium paid on early extinguishment and \$1.1 million of unamortized deferred financing costs.

In May 2017, we repurchased an aggregate principal amount of certain series of outstanding senior notes totaling \$1,659.3 million. All costs associated with the repurchases were recorded as *Loss on early extinguishment of debt*, including \$6.5 million of unamortized deferred financing costs.

Debt outstanding, excluding unamortized issuance costs and discounts, at December 31, 2018 matures on a calendar year basis as follows:

<i>In millions</i>	2019	2020	2021	2022	2023	Thereafter	Total
Contractual debt obligation maturities	\$ 405.1	\$ 74.0	\$ 103.8	\$ 88.3	\$ 102.1	\$ 19.4	\$ 792.7

**9. Derivatives and Financial Instruments**

***Derivative financial instruments***

We are exposed to market risk related to changes in foreign currency exchange rates. To manage the volatility related to this exposure, we periodically enter into a variety of derivative financial instruments. Our objective is to reduce, where it is deemed appropriate to do so, fluctuations in earnings and cash flows associated with changes in foreign currency rates. The derivative contracts contain credit risk to the extent that our bank counterparties may be unable to meet the terms of the agreements. The amount of such credit risk is generally limited to the unrealized gains, if any, in such contracts. Such risk is minimized by limiting those counterparties to major financial institutions of high credit quality.

***Foreign currency contracts***

We conduct business in various locations throughout the world and are subject to market risk due to changes in the value of foreign currencies in relation to our reporting currency, the U.S. dollar. We manage our economic and transaction exposure to certain market-based risks through the use of foreign currency derivative financial instruments. Our objective in holding these derivatives is to reduce the volatility of net earnings and cash flows associated with changes in foreign currency exchange rates. The majority of our foreign currency contracts have an original maturity date of less than one year. The derivative contracts contain credit risk to the extent that our bank counterparties may be unable to meet the terms of the agreements. The amount of such credit risk is generally limited to the unrealized gains, if any, in such contracts. Such risk is minimized by limiting those counterparties to major financial institutions of high credit quality.

At December 31, 2018 and 2017, we had outstanding foreign currency derivative contracts with gross notional U.S. dollar equivalent amounts of \$331.4 million and \$481.4 million, respectively. The impact of these contracts on the Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss) was not material for any period presented.

Gains or losses on foreign currency contracts designated as hedges are reclassified out of *Accumulated other comprehensive loss* and into *Selling, general and administrative expense* in the Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss) when the hedged item affects earnings. Such reclassifications during 2018 and 2017 were not material.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

***Net investment hedge***

We have net investments in foreign subsidiaries that are subject to changes in the foreign currency exchange rate. In September 2015, we designated the €500 million 2.45% Senior Notes due 2019 (the “2019 Euro Notes”) as a net investment hedge for a portion of our net investment in our Euro denominated subsidiaries. In June 2018, the Company completed a tender offer for €363.4 million of the 2019 Euro Notes. The remaining €136.6 million of the 2019 Euro Notes have been re-designated as a net investment hedge in our Euro denominated subsidiaries. The gains/losses on the 2019 Euro Notes have been included as a component of the cumulative translation adjustment account within *Accumulated other comprehensive loss*. As of December 31, 2018 and 2017, we had deferred foreign currency losses of \$0.8 million and \$29.6 million, respectively, in *Accumulated other comprehensive loss* associated with the net investment hedge activity.

***Fair value measurements***

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Assets and liabilities measured at fair value are classified using the following hierarchy, which is based upon the transparency of inputs to the valuation as of the measurement date:

*Level 1:* Valuation is based on observable inputs such as quoted market prices (unadjusted) for identical assets or liabilities in active markets.

*Level 2:* Valuation is based on inputs such as quoted market prices for similar assets or liabilities in active markets or other inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.

*Level 3:* Valuation is based upon other unobservable inputs that are significant to the fair value measurement.

In making fair value measurements, observable market data must be used when available. When inputs used to measure fair value fall within different levels of the hierarchy, the level within which the fair value measurement is categorized is based on the lowest level input that is significant to the fair value measurement.

***Fair value of financial instruments***

The following methods were used to estimate the fair values of each class of financial instrument:

- *short-term financial instruments (cash and cash equivalents, accounts and notes receivable, accounts and notes payable and variable-rate debt)* — recorded amount approximates fair value because of the short maturity period;
- *long-term fixed-rate debt, including current maturities* — fair value is based on market quotes available for issuance of debt with similar terms, which are inputs that are classified as Level 2 in the valuation hierarchy defined by the accounting guidance;
- *foreign currency contract agreements* — fair values are determined through the use of models that consider various assumptions, including time value, yield curves, as well as other relevant economic measures, which are inputs that are classified as Level 2 in the valuation hierarchy defined by the accounting guidance; and
- *deferred compensation plan assets (mutual funds, common/collective trusts and cash equivalents for payment of certain non-qualified benefits for retired, terminated and active employees)* — fair value of mutual funds and cash equivalents are based on quoted market prices in active markets that are classified as Level 1 in the valuation hierarchy defined by the accounting guidance; fair value of common/collective trusts are valued at net asset value (“NAV”), which is based on the fair value of the underlying securities owned by the fund and divided by the number of shares outstanding.

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The recorded amounts and estimated fair values of total debt, excluding unamortized issuance costs and discounts, at December 31 were as follows:

<i>In millions</i>	2018		2017	
	Recorded Amount	Fair Value	Recorded Amount	Fair Value
Variable rate debt	\$ 102.2	\$ 102.2	\$ 62.4	\$ 62.4
Fixed rate debt	690.5	691.8	1,385.1	1,424.0
<b>Total debt</b>	<b>\$ 792.7</b>	<b>\$ 794.0</b>	<b>\$ 1,447.5</b>	<b>\$ 1,486.4</b>

Financial assets and liabilities measured at fair value on a recurring and nonrecurring basis were as follows:

<i>In millions</i>	December 31, 2018				
	Level 1	Level 2	Level 3	NAV	Total
Foreign currency contract liabilities	\$ —	\$ (30.6)	\$ —	\$ —	\$ (30.6)
Deferred compensation plan assets - Rabbi Trust (Note 21)	17.6	—	—	3.3	20.9

<i>In millions</i>	December 31, 2017				
	Level 1	Level 2	Level 3	NAV	Total
Foreign currency contract assets	\$ —	\$ 0.6	\$ —	\$ —	\$ 0.6
Foreign currency contract liabilities	—	(47.2)	—	—	(47.2)
Deferred compensation plan assets - Rabbi Trust (Note 21)	18.7	—	—	4.5	23.2

Nonrecurring fair value measurements <sup>(1)</sup>

- (1) During the fourth quarter of 2017, we completed our annual intangible assets impairment review. As a result, we recorded a pre-tax non-cash impairment charge of \$8.8 million for trade name intangibles, reducing the carrying value of these intangibles to \$10.8 million. The fair value of trade names is measured using the relief-from-royalty method. This method assumes the trade name has value to the extent that the owner is relieved of the obligation to pay royalties for the benefits received from them. This method requires us to estimate the future revenue for the related brands, the appropriate royalty rate and the weighted average cost of capital.

## 10. Taxation

Profit from continuing operations before taxation consisted of the following:

<i>In millions</i>	Financial years ended December 31	
	2018	2017
Federal <sup>(1)</sup>	\$ (24.6)	\$ (34.1)
International <sup>(2)</sup>	404.4	206.9
<b>Profit from continuing operations before taxation</b>	<b>\$ 379.8</b>	<b>\$ 172.8</b>

- (1) "Federal" reflects U.K. income from continuing operations before income taxes.

- (2) "International" reflects non-U.K. income from continuing operations before income taxes.

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Taxation from continuing operations consisted of the following:

<i>In millions</i>	<b>Financial years ended</b>	
	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
<b>Current</b>		
Federal <sup>(1)</sup>	\$ (0.1)	\$ —
International <sup>(2)</sup>	62.3	76.7
Total current taxation	62.2	76.7
<b>Deferred</b>		
Federal <sup>(1)</sup>	—	—
International <sup>(2)</sup>	(4.1)	(18.0)
Total deferred taxation	(4.1)	(18.0)
Total taxation	\$ 58.1	\$ 58.7

(1) “Federal” represents U.K. taxes.

(2) “International” represents non-U.K. taxes.

Reconciliations of the federal taxation at the statutory rate to the Group’s effective tax rate on ordinary activities were as follows:

<i>Percentages</i>	<b>Financial years ended</b>	
	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
U.K federal statutory income tax rate	19.0%	19.3%
Tax effect of international operations <sup>(1)</sup>	(12.0)	(20.8)
Change in valuation allowances	7.9	27.6
Withholding taxes	0.3	0.4
Interest limitations	1.8	1.7
Excess tax benefits on stock-based compensation	(1.7)	(4.5)
Tax effect of U.S. tax reform	(0.9)	1.3
Tax effect of early extinguishment of debt	0.9	9.0
Effective tax rate	15.3%	34.0%

(1) The tax effect of international operations consists of non-U.K. jurisdictions.

Reconciliations of the Group’s beginning and ending gross unrecognized tax benefits were as follows:

<i>In millions</i>	<b>Financial years ended</b>	
	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
Beginning balance	\$ 13.8	\$ 46.3
Gross increases for tax positions in prior periods	44.0	4.7
Gross decreases for tax positions in prior periods	(4.4)	(3.4)
Gross increases based on tax positions related to the current year	0.9	0.7
Gross decreases related to settlements with taxing authorities	(1.8)	(33.6)
Reductions due to statute expiration	(1.1)	(0.9)
Ending balance	\$ 51.4	\$ 13.8

We record gross unrecognized tax benefits in *Creditors (amounts falling due within one year)* and *Creditors (amounts falling due after more than one year)* in the Consolidated Balance Sheets. Included in the \$51.4 million of total gross unrecognized tax benefits as of December 31, 2018 was \$50.3 million of tax benefits that, if recognized, would

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impact the effective tax rate. It is reasonably possible that the gross unrecognized tax benefits as of December 31, 2018 may decrease by a range of zero to \$8.1 million during 2019, primarily as a result of the resolution of non-U.K. examinations, including U.S. state examinations, and the expiration of various statutes of limitations.

Based on the outcome of these examinations, or as a result of the expiration of statute of limitations for specific jurisdictions, it is reasonably possible that certain unrecognized tax benefits for tax positions taken on previously filed tax returns will materially change from those recorded as liabilities in our financial statements. A number of tax periods from 2003 to present are under audit by tax authorities in various jurisdictions, including China, Germany, India and New Zealand. We anticipate that several of these audits may be concluded in the foreseeable future.

We record penalties and interest related to unrecognized tax benefits in *Taxation and Interest payable and related expenses*, respectively, in the Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss). As of December 31, 2018 and 2017, we have liabilities of \$0.5 million and \$0.3 million, respectively, for the possible payment of penalties and \$3.6 million and \$2.9 million, respectively, for the possible payment of interest expense, which are recorded in *Creditors (amounts falling due within one year)* in the Consolidated Balance Sheets.

Deferred taxes arise because of different treatment between financial statement accounting and tax accounting, known as “temporary differences.” We record the tax effect of these temporary differences as “deferred tax assets” (generally items that can be used as a tax deduction or credit in future periods) and “deferred tax liabilities” (generally items for which we received a tax deduction but the tax impact has not yet been recorded in the Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss)).

Deferred taxes were recorded in the Consolidated Balance Sheets as follows:

<i>In millions</i>	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
Deferred taxation (amounts falling due after more than one year) (note 22)	\$ 26.2	\$ 29.0
Provisions for liabilities (note 23)	105.9	108.6
Net deferred taxation	\$ 79.7	\$ 79.6

The tax effects of the major items recorded as deferred tax assets and liabilities from continuing operations were as follows:

<i>In millions</i>	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
<b>Deferred tax assets</b>		
Accrued liabilities and reserves	\$ 42.9	\$ 43.9
Pension and other post-retirement compensation and benefits	25.2	35.7
Employee compensation and benefits	21.8	39.2
Tax loss and credit carryforwards	724.7	670.5
Other assets	4.4	—
Total deferred tax assets	819.0	789.3
Valuation allowance	711.9	656.2
Deferred tax assets, net of valuation allowance	107.1	133.1
<b>Deferred tax liabilities</b>		
Tangible assets	7.1	3.7
Goodwill and other intangibles	179.7	190.6
Other liabilities	—	18.4
Total deferred tax liabilities	186.8	212.7
Net deferred taxation	\$ 79.7	\$ 79.6

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Included in tax loss and credit carryforwards in the table above is a deferred tax asset of \$29.6 million as of December 31, 2018 related to foreign tax credit carryover from the tax period ended December 31, 2017 and related to transition taxes. The entire amount is subject to a valuation allowance. The foreign tax credit is eligible for carryforward until the tax period ending December 31, 2027.

As of December 31, 2018, tax loss carryforwards of \$2,911.9 million were available to offset future income. A valuation allowance of \$692.3 million exists for deferred income tax benefits related to the tax loss carryforwards which may not be realized. The increase in tax loss carryforwards and valuation allowance from 2017 to 2018 were primarily related to internal restructuring transactions. We believe sufficient taxable income will be generated in the respective jurisdictions to allow us to fully recover the remainder of the tax losses. The tax losses primarily relate to non-U.S. carryforwards of \$2,818.2 million which are subject to varying expiration periods. Non-U.S. carryforwards of \$2,345.7 million are located in jurisdictions with unlimited tax loss carryforward periods, while the remainder will begin to expire in 2019. In addition, there were \$93.7 million of state tax loss carryforwards as of December 31, 2018. State tax losses of \$56.1 million are in jurisdictions with unlimited tax loss carryforward periods, while the remainder will expire in future years through 2038.

***U.S. tax reform***

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the “Act”) was signed into law making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a corporate tax rate decrease from 35% to 21% effective for tax years beginning after December 31, 2017, the transition of U.S. international taxation from a worldwide tax system to a territorial system, and a one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. For 2018, the Company considered in its annual effective tax rate additional provisions of the Act including changes to the deduction for executive compensation and interest expense, a tax on global intangible low-taxed income provisions (“GILTI”), the base erosion anti-abuse tax, and a deduction for foreign-derived intangible income. The Company has elected to treat tax on GILTI income as a period cost and has therefore included it in its annual effective tax rate.

Given the significance of the Act, Staff Accounting Bulletin No. 118 (“SAB 118”) was issued to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Act. SAB 118 allows registrants to record provisional amounts during a one year “measurement period.” The measurement period is deemed to have ended earlier when the registrant has obtained, prepared, and analyzed the information necessary to finalize its accounting. During the measurement period, impacts of the law are expected to be recorded at the time a reasonable estimate for all or a portion of the effects can be made, and provisional amounts can be recognized and adjusted as information becomes available, prepared, or analyzed.

The Company calculated its best estimate of the impact of the Act in its December 31, 2017 income tax provision in accordance with its understanding of the Act and guidance available as of the date of the filing of the 2017 Annual Report and as a result recorded a provisional income tax expense of \$2.2 million in the fourth quarter of 2017, the period in which the legislation was enacted. We subsequently recorded a \$3.6 million decrease to the provisional income tax expense in the third quarter of 2018, resulting in a \$1.4 million net decrease to income tax expense as a result of the Act.

The amount related to the remeasurement of certain deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future was a decrease to income tax expense of \$28.0 million. The amount related to the one-time transition tax on the mandatory deemed repatriation of foreign earnings was an increase to income tax expense of \$26.6 million. No additional income taxes have been provided for any remaining undistributed foreign earnings not subject to the transition tax, or any additional outside basis difference inherent in these entities, as these amounts continue to be indefinitely reinvested in foreign operations.

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**11. Benefit Plans**

**Pension and other post-retirement plans**

We sponsor U.S. and non-U.S. defined-benefit pension and other post-retirement plans. Pension benefits are based principally on an employee's years of service and/or compensation levels near retirement. In addition, we provide certain post-retirement health care and life insurance benefits. Generally, the post-retirement health care and life insurance plans require contributions from retirees.

In November 2017, our Board of Directors authorized the termination of the Pentair Salaried Plan (the "Salaried Plan"), a U.S. qualified pension plan, effective December 31, 2017. The Salaried Plan participants will not be adversely affected by the plan termination. Those participants whose plan benefits were not in pay status as of July 1, 2018 were given the opportunity to elect a lump sum (or monthly annuity) payment during a special election window. Payments of \$171.9 million were made to participants who elected to receive a lump sum during this window. For all participants whose Salaried Plan benefits were not paid in lump sum, the Company will purchase an annuity for them with an annuity provider within 120 days after all required government approvals for the Salaried Plan termination have been received. The termination is expected to be completed in 2019.

At December 31, 2018, the projected benefit obligation of the Salaried Plan was \$175.9 million and the plan assets were \$153.7 million. Due to the changing nature of these assumptions, it is at least reasonably possible that changes in these assumptions will occur in the near term and, due to the uncertainties inherent in setting assumptions, that the effect of such changes could be material to the financial statements.

As described in Note 1, during the first quarter of 2018, the Company adopted ASU 2017-07. As a result, service costs are classified as employee compensation costs within *Cost of goods sold* and *Selling, general and administrative expense* within the Consolidated Profit and Loss Account and Statement of Comprehensive Profit (Loss). All other components of net periodic benefit expense are classified within *Other (income) expense* for the periods presented.

The information herein relates to defined-benefit pension and other post-retirement plans of our continuing operations only.

**Obligations and funded status**

The following tables present reconciliations of plan benefit obligations, fair value of plan assets and the funded status of pension plans and other post-retirement plans as of and for the years ended December 31, 2018 and 2017:

<i>In millions</i>	<b>Pension plans</b>		<b>Other post-retirement plans</b>	
	<b>2018</b>	<b>2017</b>	<b>2018</b>	<b>2017</b>
<b>Change in benefit obligations</b>				
Benefit obligation beginning of year	\$ 473.8	\$ 423.8	\$ 17.5	\$ 18.9
Service cost	4.1	11.7	—	—
Interest cost	11.5	16.4	0.6	0.7
Actuarial loss (gain)	(23.6)	41.4	(1.4)	(0.1)
Foreign currency translation	(0.2)	0.6	—	—
Benefits paid	(187.7)	(20.1)	(1.8)	(2.0)
Benefit obligation end of year	\$ 277.9	\$ 473.8	\$ 14.9	\$ 17.5
<b>Change in plan assets</b>				
Fair value of plan assets beginning of year	\$ 382.8	\$ 352.3	\$ —	\$ —
Actual return on plan assets	(21.4)	42.4	—	—
Company contributions	7.1	6.3	1.8	2.0
Foreign currency translation	(0.1)	1.9	—	—
Benefits paid	(187.7)	(20.1)	(1.8)	(2.0)
Fair value of plan assets end of year	\$ 180.7	\$ 382.8	\$ —	\$ —
<b>Funded status</b>				
Benefit obligations in excess of the fair value of plan assets	\$ (97.2)	\$ (91.0)	\$ (14.9)	\$ (17.5)

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Amounts recorded in the Consolidated Balance Sheets were as follows:

<i>In millions</i>	<b>Pension plans</b>		<b>Other post-retirement plans</b>	
	<b>2018</b>	<b>2017</b>	<b>2018</b>	<b>2017</b>
Amount to be settled within one year	\$ (28.3)	\$ (6.1)	\$ (1.7)	\$ (1.9)
Amount to be settled after one year	(68.9)	(84.9)	(13.2)	(15.6)
Benefit obligations in excess of the fair value of plan assets	\$ (97.2)	\$ (91.0)	\$ (14.9)	\$ (17.5)

The accumulated benefit obligation for all defined benefit plans was \$275.0 million and \$470.4 million at December 31, 2018 and 2017, respectively.

Information for pension plans with an accumulated benefit obligation or projected benefit obligation in excess of plan assets as of December 31 was as follows:

<i>In millions</i>	<b>Projected benefit obligation exceeds the fair value of plan assets</b>		<b>Accumulated benefit obligation exceeds the fair value of plan assets</b>	
	<b>2018</b>	<b>2017</b>	<b>2018</b>	<b>2017</b>
Projected benefit obligation	\$ 277.9	\$ 473.8	\$ 270.6	\$ 464.9
Fair value of plan assets	180.7	382.8	173.7	374.5
Accumulated benefit obligation	N/A	N/A	268.3	462.3

Components of net periodic benefit expense for our pension plans for the years ended December 31 were as follows:

<i>In millions</i>	<b>2018</b>	<b>2017</b>
Service cost	\$ 4.1	\$ 11.7
Interest cost	11.5	16.4
Expected return on plan assets	(7.6)	(11.6)
Net actuarial loss	5.2	8.4
Net periodic benefit expense	\$ 13.2	\$ 24.9

Components of net periodic benefit expense for our other post-retirement plans for the years ended December 31 2018 and 2017, were not material.

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***Assumptions***

The following table provides the weighted-average assumptions used to determine benefit obligations and net periodic benefit cost as they pertain to our pension and other post-retirement plans.

<i>Percentages</i>	<b><u>Pension plans</u></b>		<b><u>Other post-retirement plans</u></b>	
	<b>2018</b>	<b>2017</b>	<b>2018</b>	<b>2017</b>
<b>Benefit obligation assumptions<sup>(1)</sup></b>				
Discount rate	3.73%	4.00%	3.95%	3.40%
Rate of compensation increase	3.77%	3.96%	NA	NA
<b>Net periodic benefit expense assumptions</b>				
Discount rate	4.00%	3.94%	3.40%	3.80%
Expected long-term return on plan assets	4.17%	4.05%	NA	NA
Rate of compensation increase	3.96%	3.96%	NA	NA

<sup>(1)</sup> The benefit obligation for the Salaried Plan as of December 31, 2018 and 2017 were determined using assumptions reflecting the termination of the plan. As a result, the weighted-average assumptions for the pension plans reflected in the table above do not include the Salaried Plan.

***Discount rates***

The discount rate reflects the current rate at which the pension liabilities could be effectively settled at the end of the year based on our December 31 measurement date. The discount rate was determined by matching our expected benefit payments to payments from a stream of bonds rated AA or higher available in the marketplace, adjusted to eliminate the effects of call provisions. There are no known or anticipated changes in our discount rate assumptions that will impact our pension expense in 2019.

***Expected rates of return***

The expected rate of return is designed to be a long-term assumption that may be subject to considerable year-to-year variance from actual returns. In developing the expected long-term rate of return, we considered our historical returns, with consideration given to forecasted economic conditions, our asset allocations, input from external consultants and broader longer-term market indices. Pension plan assets yielded returns of (5.60)% and 12.00% in 2018 and 2017, respectively. As a result of our de-risking strategy to reduce U.S. pension plan liability, we anticipate the expected rate of return on our funded pension plans will continue to be consistent with the discount rate utilized. Any difference in the expected rate and actual returns will be included with the actuarial gain or loss recorded in the fourth quarter when our plans are remeasured.

***Healthcare cost trend rates***

The assumed healthcare cost trend rates for other post-retirement plans as of December 31 were as follows:

	<b>2018</b>	<b>2017</b>
Healthcare cost trend rate assumed for following year	6.2%	6.6%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	4.4%	4.4%
Year the cost trend rate reaches the ultimate trend rate	2038	2038

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The assumed healthcare cost trend rates can have a significant effect on the amounts reported for healthcare plans. A one-percentage-point change in the assumed healthcare cost trend rates would have the following effects as of and for the year ended December 31, 2018:

<i>In millions</i>	<b><u>One Percentage Point</u></b>	
	<b><u>Increase</u></b>	<b><u>Decrease</u></b>
Increase (decrease) in annual service and interest cost	\$ —	\$ —
Increase (decrease) in other post-retirement benefit obligations	0.6	(0.5)

***Pension plans assets***

*Objective*

The primary objective of our investment strategy is to meet the pension obligation to our employees at a reasonable cost to us. This is primarily accomplished through growth of capital and safety of the funds invested.

*Asset allocation*

Our actual overall asset allocation for our pension plans as compared to our investment policy goals as of December 31 was as follows:

<i>Percentages</i>	<b><u>Actual</u></b>		<b><u>Target</u></b>	
	<b><u>2018</u></b>	<b><u>2017</u></b>	<b><u>2018</u></b>	<b><u>2017</u></b>
Fixed income	87%	98%	95%	97%
Alternative	5%	2%	5%	3%
Cash	8%	—%	—	—

*Fair value measurement*

The fair values of our pension plan assets and their respective levels in the fair value hierarchy as of December 31, 2018 and December 31, 2017 were as follows:

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<i>In millions</i>	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Cash and cash equivalents	\$ —	\$ 12.0	\$ —	\$ 12.0
Fixed income:				
Corporate and non U.S. government	—	102.3	—	102.3
U.S. treasuries	—	18.7	—	18.7
Other	—	16.5	—	16.5
Other investments	—	—	9.3	9.3
Total investments at fair value	\$ —	\$ 149.5	\$ 9.3	\$ 158.8
Investments measured at NAV				21.9
Total				\$ 180.7

<i>In millions</i>	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Fixed income:				
Corporate and non U.S. government	\$ —	\$ 262.8	\$ —	\$ 262.8
U.S. treasuries	—	43.2	—	43.2
Mortgage-backed securities	—	3.3	—	3.3
Other	—	37.0	—	37.0
Other investments	—	—	9.4	9.4
Total investments at fair value	\$ —	\$ 346.3	\$ 9.4	\$ 355.7
Investments measured at NAV				27.1
Total				\$ 382.8

Valuation methodologies used for investments measured at fair value were as follows:

- **Cash and cash equivalents:** Cash consists of cash held in bank accounts and is considered a Level 1 investment. Cash equivalents consist of investments in commingled funds valued based on observable market data. Such investments were classified as Level 2.
- **Fixed income:** Investments in corporate bonds, government securities, mortgages and asset backed securities were valued based upon quoted market prices for similar securities and other observable market data. Investments in commingled funds were generally valued at the end of the period based upon the value of the underlying investments as determined by quoted market prices or by a pricing service. Such investments were classified as Level 2.
- **Other investments:** Other investments include investments in commingled funds with diversified investment strategies. Investments in commingled funds that were valued at the end of the period based upon the value of the underlying investments as determined by quoted market prices or by a pricing service were classified as Level 2. Investments in commingled funds that were valued based on unobservable inputs due to liquidation restrictions were classified as Level 3.

Activity for our Level 3 pension plan assets held during the years ended December 31, 2018 and 2017 was not material.

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***Cash flows***

***Contributions***

Pension contributions from continuing operations totaled \$7.1 million and \$6.3 million in 2018 and 2017, respectively. We anticipate our 2019 pension contributions to be approximately \$29.9 million, which includes the planned termination of the Salaried Plan. The changing nature of the termination assumptions used to value the Salaried Plan may cause 2019 pension contributions to be higher or lower than expected. The 2019 expected contributions will equal or exceed our minimum funding requirements.

***Estimated future benefit payments***

The following benefit payments, which reflect expected future service or payout from termination, as appropriate, are expected to be paid by the plans for the years ended December 31 as follows:

<i>In millions</i>	<b>U.S. pension plans</b>	<b>Other post- retirement plans</b>
2019	\$ 183.0	\$ 1.7
2020	7.2	1.6
2021	7.2	1.6
2022	7.3	1.5
2023	6.8	1.4
Thereafter	36.2	5.4

***Savings plan***

We have a 401(k) plan (the “401(k) plan”) with an employee share ownership (“ESOP”) bonus component, which covers certain union and all non-union U.S. employees who meet certain age requirements. Under the 401(k) plan, eligible U.S. employees may voluntarily contribute a percentage of their eligible compensation. We match contributions made by employees who meet certain eligibility and service requirements.

As of January 1, 2018, the 401(k) company match contribution was changed to a dollar-for-dollar (100%) matching contribution on up to 5% of employee eligible earnings, contributed as before-tax contributions. This change replaced the ESOP component discussed below and offers the same 5% total company match.

During 2017, the 401(k) matching contribution was 100% of eligible employee contributions for the first 1% of eligible compensation and 50% of the next 5% of eligible compensation.

During 2018 and 2017, in addition to the matching contribution, all employees who met certain service requirements received a discretionary ESOP contribution equal to 1.5% of annual eligible compensation.

Our combined expense for the 401(k) plan and the ESOP was \$23.4 million and \$27.9 million in 2018 and 2017, respectively.

***Other retirement compensation***

Total other accrued retirement compensation, primarily related to deferred compensation and supplemental retirement plans, was \$28.2 million and \$29.6 million as of December 31, 2018 and 2017, respectively, and is included in *Provisions for liabilities and Creditors (amounts falling due after more than one year)* in the Consolidated Balance Sheets.

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**12. Shareholders' Funds**

***Authorized shares***

Our authorized share capital consists of 426.0 million ordinary shares with a par value of \$0.01 per share. There were no changes to the authorized share capital since the prior financial year end.

***Share repurchases***

In December 2014, the Board of Directors authorized the repurchase of our ordinary shares up to a maximum dollar limit of \$1.0 billion (the "2014 Authorization"). On May 8, 2018, the Board of Directors authorized the repurchase of our ordinary shares up to a maximum dollar limit of \$750.0 million (the "2018 Authorization"), replacing the 2014 Authorization. The 2018 Authorization expires on May 31, 2021.

During the year ended December 31, 2017, we repurchased 3.0 million of our ordinary shares for \$200.0 million under the 2014 Authorization. All 3.0 million shares were subsequently canceled.

During the year ended December 31, 2018, we repurchased 10.2 million of our shares for \$500 million, of which 2.2 million shares, or \$150.0 million, and 8.0 million shares, or \$350.0 million, were repurchased pursuant to the 2014 and 2018 Authorizations, respectively. All 10.2 million shares were subsequently canceled.

As of December 31, 2018, we had \$400.0 million available for share repurchases under the 2018 Authorization.

***Dividends payable***

On December 10, 2018, the Board of Directors declared a quarterly cash dividend of \$0.18 that was paid on February 8, 2019 to shareholders of record at the close of business on January 25, 2019. Additionally, the Board of Directors approved a plan to pay an annual cash dividend of \$0.72 in 2019. As a result, the balance of dividends payable included in *Creditors (amounts falling due within one year)* on our Consolidated Balance Sheets was \$30.8 million at December 31, 2018. We paid dividends in 2018 of \$187.2 million, or \$1.05 per ordinary share, compared with \$251.7 million, or \$1.38 per ordinary share, in 2017.

See Note 5 of the Company financial statements for shareholders' funds activity of the Company.

**13. Share Plans**

***Share-based compensation expense***

Total share-based compensation expense for 2018 and 2017 was as follows:

<i>In millions</i>	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
Restricted stock units	\$ 8.9	\$ 17.5
Stock options	4.6	10.5
Performance share units	7.4	11.6
Total share-based compensation expense	\$ 20.9	\$ 39.6

Of the total share-based compensation expense noted above, \$3.4 million and \$7.6 million for the years ended December 31, 2018 and 2017, respectively, was reported as part of *Income from discontinued operations, net of tax*.

***Share incentive plans***

In 2012, our Board of Directors, and Tyco International Ltd. ("Tyco") as our sole shareholder at the time, approved the Pentair plc 2012 Stock and Incentive Plan (the "2012 Plan"). The 2012 Plan became effective on September 28, 2012 and authorizes the issuance of 9.0 million of our ordinary shares. The shares may be issued as new shares or from shares held in treasury. Our practice is to settle equity-based awards by issuing new shares. The 2012 Plan terminates in September 2022. The 2012 Plan allows for the granting to our officers, directors, employees and consultants of non-qualified stock options, incentive stock options, stock appreciation rights, performance shares, performance units, restricted shares, restricted stock units, deferred stock rights, annual incentive awards, dividend equivalent units and other equity-based awards.

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The 2012 Plan is administered by our compensation committee (the “Committee”), which is made up of independent members of our Board of Directors. Employees eligible to receive awards under the 2012 Plan are managerial, administrative or other key employees who are in a position to make a material contribution to the continued profitable growth and long-term success of our company. The Committee has the authority to select the recipients of awards, determine the type and size of awards, establish certain terms and conditions of award grants and take certain other actions as permitted under the 2012 Plan. The 2012 Plan prohibits the Committee from re-pricing awards or canceling and reissuing awards at lower prices.

***Non-qualified and incentive stock options***

Under the 2012 Plan, we may grant stock options to any eligible employee with an exercise price equal to the market value of the shares on the dates the options were granted. Options generally vest one-third each year over a three-year period commencing on the grant date and expire 10 years after the grant date.

***Restricted shares and restricted stock units***

Under the 2012 Plan, eligible employees may be awarded restricted shares or restricted stock units of our common stock. Restricted shares and restricted stock units generally vest one-third each year over a three-year period commencing on the grant date, subject to continuous employment and certain other conditions. Restricted shares and restricted stock units are valued at market value on the date of grant and are expensed over the vesting period.

***Stock appreciation rights, performance shares and performance units***

Under the 2012 Plan, the Committee is permitted to issue these awards which are generally earned over a three-year vesting period and tied to specific financial metrics. In December 2015, the Committee approved the granting of PSUs to certain employees that vest based on the satisfaction of a three-year service period and the achievement of certain performance metrics over that same period. Upon vesting, PSU holders receive dividends that accumulate during the vesting period. The fair value of these PSUs is determined based on the closing market price of the Company’s ordinary shares at the date of grant. Compensation expense is recognized over the period an employee is required to provide service based on the estimated vesting of the PSUs granted. The estimated vesting of the PSUs is based on the probability of achieving certain financial performance metrics during the three year vesting period.

***Stock options***

The following table summarizes stock option activity under all plans for the year ended December 31, 2018:

<i>Shares and intrinsic value in millions</i>	<b>Number of shares</b>	<b>Weighted- average exercise price</b>	<b>Weighted- average remaining contractual life (years)</b>	<b>Aggregate intrinsic value</b>
Outstanding as of January 1, 2018	5.2	\$ 28.80		
Granted	0.5	45.42		
Exercised	(0.8)	23.52		
Forfeited	(0.1)	43.77		
Spin-off adjustment	(0.7)	—		
Outstanding as of December 31, 2018	4.1	\$ 35.77	5.2	\$ 20.6
Options exercisable as of December 31, 2018	3.0	\$ 33.93	4.0	\$ 19.5
Options expected to vest as of December 31, 2018	1.1	\$ 40.55	8.2	\$ 1.2

***Fair value of options granted***

The weighted average grant date fair value of options granted under Pentair plans in 2018 and 2017 was estimated to be \$10.92 and \$12.59 per share, respectively. The total intrinsic value of options that were exercised during 2018 and 2017 was \$18.2 million and \$34.3 million, respectively. At December 31, 2018, the total unrecognized compensation cost related to stock options was \$7.8 million. This cost is expected to be recognized over a weighted average period of 2.1 years.

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We estimated the fair value of each stock option award on the date of grant using a Black-Scholes option pricing model, modified for dividends and using the following weighted average assumptions:

	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
Risk-free interest rate	2.58%	1.65%
Expected dividend yield	1.56%	2.35%
Expected share price volatility	24.8%	26.9%
Expected term (years)	6.1	6.3

These estimates require us to make assumptions based on historical results, observance of trends in our share price, changes in option exercise behavior, future expectations and other relevant factors. If other assumptions had been used, share-based compensation expense, as calculated and recorded under the accounting guidance, could have been affected.

We based the expected life assumption on historical experience as well as the terms and vesting periods of the options granted. For purposes of determining expected volatility, we considered a rolling average of historical volatility measured over a period approximately equal to the expected option term. The risk-free rate for periods that coincide with the expected life of the options is based on the U.S. Treasury Department yield curve in effect at the time of grant.

Cash received from option exercises for the years ended December 31, 2018 and 2017 was \$19.5 million and \$46.0 million, respectively. The actual tax benefit realized for the tax deductions from option exercises totaled \$5.6 million and \$7.8 million for the years ended December 31, 2018 and 2017, respectively.

***Restricted stock units***

The following table summarizes restricted stock unit activity under all plans for the year ended December 31, 2018:

<i>Shares in millions</i>	<b>Number of shares</b>	<b>Weighted average grant date fair value</b>
Outstanding as of January 1, 2018	0.6	\$ 39.44
Granted	0.2	45.46
Vested	(0.6)	43.89
Conversion of PSUs	0.5	—
Spin-off adjustment	(0.2)	—
Outstanding as of December 31, 2018	0.5	\$ 41.74

As of December 31, 2018, there was \$18.4 million of unrecognized compensation cost related to restricted share compensation arrangements granted under the 2012 Plan and previous plans. That cost is expected to be recognized over a weighted-average period of 1.0 years. The total fair value of shares vested during the years ended December 31, 2018 and 2017, was \$24.4 million and \$21.7 million, respectively. The actual tax benefit realized for the year ended December 31, 2018 was \$0.7 million. There were no actual tax benefits realized for the year ended December 31, 2017.

***Performance share units***

The following table summarizes performance share unit activity under all plans for the year ended December 31, 2018:

<i>Shares in millions</i>	<b>Number of shares</b>	<b>Weighted average grant date fair value</b>
Outstanding as of January 1, 2018	0.5	\$ 29.53
Granted	0.1	45.42
Conversion to RSUs	(0.5)	—
Outstanding as of December 31, 2018	0.1	\$ 45.42

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The expense recognized each period is dependent upon our estimate of the number of shares that will ultimately be issued. As of December 31, 2018, there was \$4.3 million of unrecognized compensation cost related to performance share compensation arrangements granted under the 2012 Plan and previous plans. That cost is expected to be recognized over a weighted-average period of 2.2 years. The actual tax benefit realized for the year ended December 31, 2018 was \$0.2 million. There were no actual tax benefits realized for the year ended December 31, 2017.

***Electrical separation***

In connection with the Separation and Distribution, the Company adjusted its outstanding equity awards on May 1, 2018 in accordance with the Employee Matters Agreement between Pentair and nVent. The outstanding awards will continue to vest over the original vesting period, which is generally three years from the grant date.

The RSUs, PSUs, and stock option awards issued before May 9, 2017 (the date of Pentair's announcement of its intention to separate its Water and Electrical businesses) were converted into awards of both Pentair and nVent regardless of which company the award holder was employed by immediately after the Separation. These awards were converted as follows:

- *Restricted stock units:* For every unvested Pentair RSU award held, the holder received one nVent RSU.
- *Performance share units:* Pentair PSUs were converted to Pentair RSUs immediately after the Distribution. The PSUs granted in 2016 were converted at rate of 125% of target, and the PSUs granted in 2017 were converted at a rate of 100% of target. For every converted RSU, the shareholder also received one nVent RSU. The converted RSUs retain the original vesting schedule of the awarded PSUs.
- *Stock options:* Every holder of unexercised (vested and unvested) Pentair stock options received both adjusted stock options of Pentair and stock options of nVent, with the number of underlying shares and the exercise price adjusted accordingly to preserve the overall intrinsic value of the awards. The number of Pentair stock options was converted based upon the ratio of Pentair's pre-Distribution stock price divided by the sum of the Pentair and nVent post-Distribution closing prices. The exercise price for the converted Pentair stock options was adjusted based on the Pentair post-Distribution closing price divided by the Pentair pre-Distribution closing price.

The number of new nVent stock options awarded is the same as the converted number of Pentair stock options calculated as described above. The exercise price for the new nVent stock options was calculated based on nVent's post-Distribution closing price divided by the Pentair pre-Distribution closing price.

Generally, unvested awards issued after May 9, 2017 were converted to awards of the Company that the shareholder was employed by immediately after the Separation, with adjustments to the number of underlying shares as appropriate to preserve the intrinsic value of such awards immediately prior to the Distribution. The adjustment of the underlying shares was based on the ratio of Pentair's pre-Distribution stock price divided by the post-Distribution closing price of the respective company's ordinary shares. The exercise prices of the stock options were converted using the inverse ratio in a manner designed to preserve the intrinsic value of such awards.

**14. Segment Information**

Effective May 1, 2018, we reorganized our business segments to reflect a new operating structure, resulting in a change to our reporting segments. All prior period amounts related to the segment change have been retrospectively reclassified to conform to the new presentation. As part of this reorganization the legacy Water segment was separated into three reportable business segments:

- ***Aquatic Systems*** — This segment manufactures and sells a complete line of energy-efficient residential and commercial pool equipment and accessories including pumps, filters, heaters, lights, automatic controls, automatic cleaners, maintenance equipment and pool accessories. Applications for our Aquatic Systems products include residential and commercial pool maintenance, pool repair, renovation, service and construction and aquaculture solutions.

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- **Filtration Solutions** — This segment manufactures and sells water and fluid treatment products and systems, including pressure tanks and vessels, control valves, activated carbon products, conventional filtration products, point-of-entry and point-of-use systems, gas recovery solutions, membrane bioreactors, wastewater reuse systems and advanced membrane filtration and separation systems into the global residential, industrial and commercial markets. These products are used in a range of applications, including use in fluid filtration, ion exchange, desalination, food and beverage, food service and separation technologies for the oil and gas industry.
- **Flow Technologies** — This segment manufactures and sells products ranging from light duty diaphragm pumps to high-flow turbine pumps and solid handling pumps while serving the global residential, commercial and industrial markets. These pumps are used in a range of applications, including residential and municipal wells, water treatment, wastewater solids handling, pressure boosting, fluid delivery, circulation and transfer, fire suppression, flood control, agricultural irrigation and crop spray.

We evaluate performance based on turnover growth and segment income (loss) and use a variety of ratios to measure performance of our reporting segments. These results are not necessarily indicative of the results of operations that would have occurred had each segment been an independent, stand-alone entity during the periods presented. Segment income (loss) represents equity income of unconsolidated subsidiaries and operating profit from continuing operations exclusive of intangible amortization, certain acquisition related expenses, costs of restructuring activities, impairments and other unusual non-operating items.

Financial information of continuing operations by reportable segment is included in the following summary:

<i>In millions</i>	<b>2018</b>		<b>2017</b>	
	<b>Turnover</b>		<b>Segment income (loss)</b>	
Aquatic Systems	\$ 1,026.1	\$ 939.6	\$ 277.6	\$ 254.1
Filtration Solutions	1,001.0	990.6	168.5	154.5
Flow Technologies	936.7	914.2	145.6	140.6
Other	1.3	1.3	(54.9)	(52.7)
Consolidated <sup>(1)</sup>	\$ 2,965.1	\$ 2,845.7	\$ 536.8	\$ 496.5

(1) One customer in the Aquatic Systems segment, Pool Corporation, represented approximately 15% of our consolidated turnover in 2018 and 2017.

<i>In millions</i>	<b>2018</b>		<b>2017</b>		<b>2018</b>		<b>2017</b>	
	<b>Identifiable assets <sup>(1)</sup></b>		<b>Capital expenditures</b>		<b>Depreciation</b>			
Aquatic Systems	\$ 1,304.2	\$ 1,323.0	\$ 10.6	\$ 9.6	\$ 8.1	\$ 10.6		
Filtration Solutions	1,232.4	1,333.3	16.6	19.2	23.2	21.6		
Flow Technologies	1,003.6	1,010.8	10.3	7.3	13.1	13.4		
Other	266.3	4,966.6	10.7	3.0	5.3	5.2		
Consolidated	\$ 3,806.5	\$ 8,633.7	\$ 48.2	\$ 39.1	\$ 49.7	\$ 50.8		

(1) All cash and cash equivalents and assets held for sale are included in "Other."

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The following table presents a reconciliation of consolidated segment income to profit from continuing operations before taxation:

<i>In millions</i>	<b>2018</b>	<b>2017</b>
Segment income	\$ 536.8	\$ 496.5
Restructuring and other	(31.8)	(28.2)
Intangible amortization	(34.9)	(36.4)
Pension and other post-retirement mark-to-market loss	(3.6)	(8.5)
Trade name and other impairment	(12.0)	(15.6)
Loss on sale of businesses	(7.3)	(4.2)
Loss on early extinguishment of debt	(17.1)	(101.4)
Interest expense, net	(32.6)	(87.3)
Corporate allocations	(11.0)	(36.7)
Deal related costs and expenses	(2.0)	—
Other expense	(4.7)	(5.4)
Profit from continuing operations before taxation	\$ 379.8	\$ 172.8

**15. Commitments and Contingencies**

***Operating lease commitments***

Net rental expense under operating leases of continuing operations was as follows:

<i>In millions</i>	<b>Years ended December 31</b>	
	<b>2018</b>	<b>2017</b>
Gross rental expense	\$ 30.4	\$ 29.7
Sublease rental income	(0.4)	(0.2)
Net rental expense	\$ 30.0	\$ 29.5

Future minimum lease commitments under non-cancelable operating leases, principally related to facilities, machinery, equipment and vehicles as of December 31, 2018 were as follows:

<i>In millions</i>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Thereafter</b>	<b>Total</b>
Minimum lease payments	\$ 23.2	\$ 17.6	\$ 13.3	\$ 11.1	\$ 9.5	\$ 13.8	\$ 88.5
Minimum sublease rentals	(0.7)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(3.7)
Net future minimum lease commitments	\$ 22.5	\$ 17.0	\$ 12.7	\$ 10.5	\$ 8.9	\$ 13.2	\$ 84.8

***Purchase and marketing obligations***

The majority of the Group's purchase obligations represent commitments for raw materials to be utilized in the normal course of business. Arrangements are considered purchase obligations if a contract specifies all significant terms, including fixed or minimum quantities to be purchased, a pricing structure and approximate timing of the transaction. At December 31, 2018, the Group has aggregate purchase and marketing obligations of \$38.6 million, of which \$20.6 million relates to fiscal year 2019.

***Other matters***

In addition to the matters described above, from time to time, we are subject to disputes, administrative proceedings and other claims relating to the conduct of our business. These matters include, without limitation, claims relating to commercial or contractual disputes with suppliers, customers or parties to acquisitions and divestitures, intellectual property matters, environmental, safety and health matters, product liability, the use or installation of our products, consumer matters, and employment and labor matters. On the basis of information currently available to it, management does not believe that existing proceedings and claims will have a material impact on our Consolidated Financial Statements. However, litigation is unpredictable, and we could incur judgments or enter into settlements for current or future claims that could adversely affect our financial statements.

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***Warranties and guarantees***

In connection with the disposition of our businesses or product lines, we may agree to indemnify purchasers for various potential liabilities relating to the sold business, such as pre-closing tax, product liability, warranty, environmental, or other obligations. The subject matter, amounts and duration of any such indemnification obligations vary for each type of liability indemnified and may vary widely from transaction to transaction.

Generally, the maximum obligation under such indemnifications is not explicitly stated and as a result, the overall amount of these obligations cannot be reasonably estimated. Historically, we have not made significant payments for these indemnifications. We believe that if we were to incur a loss in any of these matters, the loss would not have a material effect on our financial position, results of operations or cash flows.

We recognize, at the inception of a guarantee, a liability for the fair value of the obligation undertaken in issuing the guarantee. In connection with the disposition of the Valves & Controls business, we agreed to indemnify Emerson Electric Co. for certain pre-closing tax liabilities. In 2017, we recorded a liability representing the fair value of our expected future obligation for this matter.

We provide service and warranty policies on our products. Liability under service and warranty policies is based upon a review of historical warranty and service claim experience. Adjustments are made to accruals as claim data and historical experience warrant.

The changes in the carrying amount of service and product warranties from continuing operations for the years ended December 31, 2018 and 2017 were as follows:

<i>In millions</i>	<b>Years ended December 31</b>	
	<b>2018</b>	<b>2017</b>
Beginning balance	\$ 38.1	\$ 36.3
Service and product warranty provision	50.8	60.8
Payments	(54.6)	(59.6)
Foreign currency translation	(0.4)	0.6
Ending balance (note 23)	\$ 33.9	\$ 38.1

***Stand-by letters of credit, bank guarantees and bonds***

In certain situations, Tyco guaranteed performance by the flow control business of Pentair Ltd. (“Flow Control”) to third parties or provided financial guarantees for financial commitments of Flow Control. In situations where Flow Control and Tyco were unable to obtain a release from these guarantees in connection with the spin-off of Flow Control from Tyco, we will indemnify Tyco for any losses it suffers as a result of such guarantees.

In disposing of assets or businesses, we often provide representations, warranties and indemnities to cover various risks including unknown damage to the assets, environmental risks involved in the sale of real estate, liability to investigate and remediate environmental contamination at waste disposal sites and manufacturing facilities and unidentified tax liabilities and legal fees related to periods prior to disposition. We do not have the ability to reasonably estimate the potential liability due to the inchoate and unknown nature of these potential liabilities. However, we have no reason to believe that these uncertainties would have a material adverse effect on our financial position, results of operations or cash flows.

In the ordinary course of business, we are required to commit to bonds, letters of credit and bank guarantees that require payments to our customers for any non-performance. The outstanding face value of these instruments fluctuates with the value of our projects in process and in our backlog. In addition, we issue financial stand-by letters of credit primarily to secure our performance to third parties under self-insurance programs.

As of December 31, 2018 and 2017, the outstanding value of bonds, letters of credit and bank guarantees totaled \$123.6 million and \$129.2 million, respectively.

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**16. Interest Payable and Similar Charges**

Interest payable and similar charges of continuing operations for 2018 and 2017 were comprised of the following:

<i>In millions</i>	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
Interest on debt repayable within five years, otherwise than by installment	\$ 34.7	\$ 72.9
Interest on debt repayable beyond five years, otherwise than by installment	0.9	5.2
Amortization of debt issuance and bridge financing costs	2.8	4.6
Other	5.3	14.5
<b>Total interest payable and similar charges</b>	<b>\$ 43.7</b>	<b>\$ 97.2</b>

**17. Loss Attributable to Pentair plc**

In accordance with Section 304(2) of the Companies Act 2014, the Company is availing of the exemption from presenting and filing its individual profit and loss account. Pentair plc's loss for the years ended December 31, 2018 and 2017 as determined in accordance with FRS 102, the Financial Reporting Standard applicable in the U.K. and Republic of Ireland, was \$1,893.0 million and \$69.0 million, respectively.

**18. Tangible Assets**

Tangible assets at cost and accumulated depreciation consisted of the following at December 31:

<i>In millions</i>	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
Land and land improvements	\$ 33.5	\$ 33.5
Buildings and leasehold improvements	178.9	184.3
Machinery and equipment	593.8	609.6
Construction in progress	35.7	23.7
<b>Total tangible assets</b>	<b>841.9</b>	<b>851.1</b>
Accumulated depreciation and amortization	569.3	571.3
<b>Total tangible assets, net</b>	<b>\$ 272.6</b>	<b>\$ 279.8</b>

Tangible assets activity for 2018 was as follows:

<i>In millions</i>	<b>Buildings</b>				<b>Total Tangible Assets</b>
	<b>Land and land improvements</b>	<b>and leasehold improvements</b>	<b>Machinery and equipment</b>	<b>Construction in progress</b>	
<b>December 31, 2017</b>	\$ 33.5	\$ 184.3	\$ 609.6	\$ 23.7	\$ 851.1
Additions	1.5	6.7	29.7	13.8	51.7
Disposals	—	(8.6)	(37.5)	(0.8)	(46.9)
Transfers / Other	(0.3)	0.5	3.1	(0.7)	2.6
Currency translation	(1.2)	(4.0)	(11.1)	(0.3)	(16.6)
<b>December 31, 2018</b>	<b>\$ 33.5</b>	<b>\$ 178.9</b>	<b>\$ 593.8</b>	<b>\$ 35.7</b>	<b>\$ 841.9</b>

Tangible asset accumulated depreciation activity for fiscal 2018 was as follows:

<i>In millions</i>	<b>December 31, Depreciation</b>				<b>Currency translation</b>	<b>December 31, 2018</b>
	<b>2017</b>	<b>expense</b>	<b>Disposals</b>	<b>Other</b>		
Accumulated depreciation	\$ 571.3	\$ 49.7	\$ (42.5)	\$ 1.1	\$ (10.3)	\$ 569.3

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**19. Creditors (amounts falling due within one year)**

Creditors (amounts falling due within one year) consisted of the following at December 31:

<i>In millions</i>	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
Current maturities of long-term debt and short-term borrowings (note 8)	\$ 405.1	\$ 255.3
Trade creditors	378.6	321.5
Employee compensation and benefits	81.7	103.2
Dividends payable	30.8	63.1
Billings in excess of cost	21.3	20.1
Accrued professional fees	34.9	48.2
Accrued rebates	55.7	49.8
Income taxes payable	10.4	39.7
Accrued excise tax	2.4	4.1
Freight payable	17.4	13.1
Interest payable	4.6	9.4
Other creditors	76.7	68.6
<b>Total creditors falling due within one year</b>	<b>\$ 1,119.6</b>	<b>\$ 996.1</b>

**20. Creditors (amounts falling due after more than one year)**

Creditors (amounts falling due after more than one year) consisted of the following at December 31:

<i>In millions</i>	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
Long-term debt (note 8)	\$ 382.5	\$ 1,185.4
Income taxes payable	46.8	61.3
Deferred compensation plan liabilities	20.9	23.2
Other creditors falling due after one year	52.8	80.4
<b>Total creditors falling due after one year</b>	<b>\$ 503.0</b>	<b>\$ 1,350.3</b>

**21. Financial Assets**

The Group's financial assets consisted of the following at December 31:

<i>In millions</i>	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
Assets held by Rabbi Trust (note 9)	\$ 20.9	\$ 23.2
Long-term project receivable	21.4	24.9
Other investments	34.8	33.3
<b>Total financial assets</b>	<b>\$ 77.1</b>	<b>\$ 81.4</b>

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**22. Debtors**

Debtors consisted of the following at December 31:

<i>In millions</i>	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
<i>Amounts falling due within one year</i>		
Trade debtors and notes receivable, net of allowances	\$ 488.2	\$ 483.1
Prepaid income taxes	8.5	7.8
Prepaid expenses	36.7	51.4
Cost in excess of billings	36.5	51.5
Other debtors	7.7	3.8
<b>Total debtors falling due within one year</b>	<b>\$ 577.6</b>	<b>\$ 597.6</b>
<i>Amounts falling due after more than one year</i>		
Prepaid income taxes	—	52.8
Deferred taxation (note 10)	26.2	29.0
Other debtors	42.2	17.7
<b>Total debtors falling due after more than one year</b>	<b>\$ 68.4</b>	<b>\$ 99.5</b>
<b>Total debtors</b>	<b>\$ 646.0</b>	<b>\$ 697.1</b>

**23. Provisions for Liabilities**

Provisions for liabilities consisted of the following at December 31:

<i>In millions</i>	<b>Note</b>	<b>December 31</b>	
		<b>2018</b>	<b>2017</b>
Pension and other post-retirement compensation and benefits	11	\$ 120.0	\$ 109.0
Deferred taxation	10	105.9	108.6
Accrued warranty	15	33.9	38.1
Insurance reserves	1	60.9	61.5
Restructuring	4	27.1	34.5
<b>Total provisions for liabilities</b>		<b>\$ 347.8</b>	<b>\$ 351.7</b>

**24. Director's Remuneration**

Directors' remuneration is set forth in the tables below. Mr. Stauch, the Company's President and Chief Executive Officer, is not compensated for his services as director. Accordingly, the amounts below include compensation for Mr. Stauch's services as Chief Executive Officer as of December 31, 2018 and Mr. Hogan, the Company's former Chairman and Chief Executive Officer for the year ended December 31, 2017 and through April 30, 2018, the date Mr. Hogan resigned in connection with the Separation.

<i>In millions</i>	<b>December 31</b>	
	<b>2018</b>	<b>2017</b>
Aggregate emoluments paid to or received by directors in respect of qualifying service	\$ 7.8	\$ 5.5
Money or value of other assets, including shares but excluding share options, paid to or receivable by the directors under long-term incentive schemes	3.9	7.7
Money or value of other assets, in relation to share options, paid to or receivable by the directors under long-term incentive schemes	0.6	2.9

**Pentair plc and Subsidiaries**  
**Notes to consolidated financial statements**

<i>In millions, except number of directors</i>	December 31			
	2018		2017	
	Number of directors	Amount	Number of directors	Amount
<i>Aggregate contributions paid, treated as paid or payable during the financial year to a retirement benefit scheme in respect of qualifying services of directors</i>				
Defined contribution schemes	2	\$ 0.1	1	\$ —
Defined benefit schemes	2	—	1	—

There were no amounts paid or payable to past directors of the Company or of its subsidiary undertakings for the years ended December 2018 and 2017.

**25. Auditor's Remuneration**

Auditor's remuneration for 2018 and 2017 was as follows:

<i>In millions</i>	December 31	
	2018	2017
Audit of the group accounts	\$ 0.2	\$ 0.2
Other assurance services	—	—
Tax advisory services	—	—
Other non-audit services	—	—
<b>Total auditors' remuneration</b>	<b>\$ 0.2</b>	<b>\$ 0.2</b>

The Group incurred additional fees of \$9.0 million and \$17.2 million in 2018 and 2017, respectively, payable to affiliates of Deloitte Ireland LLP. These additional amounts reflect fees for professional services rendered, including audit fees payable to Deloitte & Touche LLP in the U.S. for the audit of the Group's consolidated annual financial statements and the effectiveness of internal controls over financial reporting and reviews of the Group's quarterly consolidated financial statements.

**26. Employees**

The average monthly number of persons, including executive directors, employed by the Group for our continuing operations during the financial year was as follows:

	2018	2017
Manufacturing	6,760	6,778
Selling and marketing	1,524	1,619
Research and development	498	529
General and administrative	805	1,064
<b>Total average employees</b>	<b>9,587</b>	<b>9,990</b>

Total employee costs for our continuing operations for 2018 and 2017 were expensed as follows:

<i>In millions</i>	December 31	
	2018	2017
Wages and salaries	\$ 689.3	\$ 704.9
Social insurance costs	60.2	48.2
Pension and other retirement benefit costs	12.4	25.5
<b>Total employee costs</b>	<b>\$ 761.9</b>	<b>\$ 778.6</b>

Other compensation costs related to restructuring are disclosed in Note 4.

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

**27. Subsidiary Undertakings**

As of December 31, 2018, the Group had the following subsidiary undertakings:

<b>Company name</b>	<b>Country</b>	<b>Percentage owned</b>	<b>Business purpose</b>	<b>Registered office address</b>
Aplex Industries, Inc.	United States	100%	Manufacturing	2045 S. Loop 250 West, Midland TX 79703, United States
Century Mfg. Co.	United States	100%	Manufacturing	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Chansuba Pumps Private Limited	India	47%	Manufacturing	366 / 5B, Thudiyalur Road, Chinnavedampatti, Coimbatore, 641 006, India
Edward Barber & Company Limited	United Kingdom	100%	Manufacturing	Regal House, 70 London Road, Twickenham, London, TW13QS United Kingdom
Edward Barber (U.K.) Limited	United Kingdom	100%	Manufacturing	Regal House, 70 London Road, Twickenham, London, TW13QS United Kingdom
Epps, Ltd.	Mauritius	100%	Holding Company	C/O Rogers Capital Corporate Services Limited, 3rd Floor, Rogers House, President John Kennedy Street, PO Box 11302, Port Louis, Mauritius
ETE Coliban Pty Limited	Australia	100%	Manufacturing	1-21 Monash Drive, Dandenong South, Victoria 3175, Australia
Everpure Japan Kabushiki Kaisha	Japan	100%	Manufacturing	25-1, Hashimoto 3-Chome, Midori-Ku., Sagamihara-shi., Kanagawa, Japan
FARADYNE Motors (Suzhou) Co., Ltd	China	50%	Manufacturing	EPZ Zone A, No. 200 Suhong Middle Road, Suzhou Industrial Park, Suzhou, Jiangsu, 215021, China
Faradyne Motors LLC	United States	50%	Manufacturing	2077 Division Street, Palmyra NY 14522, United States
FilterSoft, LLC	United States	100%	Manufacturing	4301 West Davis, Conroe TX 77304, United States
Fleck Controls, Inc.	United States	100%	Manufacturing	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Goyen Controls Co. Pty. Limited	Australia	100%	Manufacturing	1-21 Monash Drive, Dandenong South, Victoria 3175, Australia
Goyen Valve LLC	United States	100%	Distribution	1195 Airport Road, Lakewood NJ 08701, United States
Great American Aquaculture, LLC	United States	100%	Manufacturing	64 Avenue of Industry, Waterbury CT 06705, United States
Greenspan Environmental Technology Pty Ltd	Australia	100%	Manufacturing	1-21 Monash Drive, Dandenong South, Victoria 3175, Australia
Haffmans B.V.	Netherlands	100%	Manufacturing	Marinus Dammeweg 30, 5928 PW, Venlo, Netherlands
Haffmans North America, Inc.	United States	100%	Manufacturing	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

<b>Company name</b>	<b>Country</b>	<b>Percentage owned</b>	<b>Business purpose</b>	<b>Registered office address</b>
Hawley Group Canada Limited	Canada	100%	Holding Company	Brookfield Place, 181 Bay Street, Suite 4400, Toronto ON M5J 2T3, Canada
Holding Nijhuis Pompen B.V.	Netherlands	100%	Holding Company	Parallelweg 4, 7102 DE, Winterswijk, Netherlands
Hypro EU Limited	United Kingdom	100%	Manufacturing	Station Road, Longstanton, Cambridge, England, CB24 3DS, United Kingdom
Infinite Water Solutions Private Limited	India	50%	Manufacturing	701 B1/B2 Marathon Innova, Off Ganpatrao Kadam Marg, Lower Parel, Mumbai- 400013, India
Jung Pumpen GmbH	Germany	100%	Manufacturing	Industriestraße 4-6, 33803, Steinhagen, Germany
Lincoln Automotive Company	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
McNeil (Ohio) Corporation	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
MECAIR S.r.L.	Italy	100%	Manufacturing	Via Bertacciola 50, 20813, Bovisio Masciago, Italy
Milperra Developments Pty Limited	Australia	100%	Manufacturing	1-21 Monash Drive, Dandenong South, Victoria 3175, Australia
Moraine Properties, LLC	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Nano Terra, Inc.	United States	5%	Holding Company	1209 Orange Street, Corporation Trust Center, Wilmington DE 19801, United States
Nijhuis International B.V.	Netherlands	100%	Manufacturing	Marssteden 50, 7547 TC, Enschede, Netherlands
Nijhuis Pompen B.V.	Netherlands	100%	Manufacturing	Parallelweg 4, 7102 DE, Winterswijk, Netherlands
Nijhuis Pompen BVBA	Belgium	100%	Manufacturing	Koning Albertstraat 66, 9900 Ecklo, Belgium
Nijhuis Pompen Exploitatiemaatschappij B.V.	Netherlands	100%	Manufacturing	Parallelweg 4, 7102 DE, Winterswijk, Netherlands
Panthro Acquisition Co.	United States	100%	Holding Company	1209 Orange Street, Corporation Trust Center, Wilmington DE 19801, United States
Pentair (NZ) Limited	New Zealand	100%	Manufacturing	Level 30, Vero Centre, 48 Shortland Street, c/o Russell McVeagh, Auckland, 1140, New Zealand
Pentair Aquatic Eco-Systems (Canada), Inc.	Canada	100%	Manufacturing	1500 Royal Centre, 1055 West Georgia Street, P.O. Box 11117, Vancouver BC V6E 4N7, Canada
Pentair Aquatic Eco-Systems, Inc.	United States	100%	Manufacturing	2395 Apopka Blvd., Apopka FL 32703, United States

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

<b>Company name</b>	<b>Country</b>	<b>Percentage owned</b>	<b>Business purpose</b>	<b>Registered office address</b>
Pentair Australia Holdings Pty Limited	Australia	100%	Holding company	1-21 Monash Drive, Dandenong South, Victoria 3175, Australia
Pentair Beteiligungs GmbH	Germany	100%	Manufacturing	Langenalber Strasse 96-100, 75334, Straubenhardt, Germany
Pentair Canada, Inc.	Canada	100%	Distribution	181 Bay Street, Suite 4400, Toronto ON M5J 2T3, Canada
Pentair Chile SpA	Chile	100%	Manufacturing	Cerro El Plomo 5680, of 1204, piso 12, Las Condes, Santiago, Chile
Pentair Clean Process Technologies India Private Limited	India	100%	Manufacturing	Workfella, 37 TTK Road, Alwarpet Chennai, Chennai, Tamilnadu, 600018, India
Pentair Denmark Holding ApS	Denmark	100%	Holding Company	Snaremoesevej 27, Erritsø, 7000, Fredericia, Denmark
Pentair Environmental Systems Limited	United Kingdom	100%	Manufacturing	Regal House, 70 London Road, Twickenham, London, TW13QS United Kingdom
Pentair Epsilon Limited	Bermuda	100%	Holding Company	Canon's Court, 22 Victoria Street, Appleby Services (Bermuda) Ltd., Hamilton, HM 12, Bermuda
Pentair Federal Pump, LLC	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Pentair Filtration Solutions, LLC	United States	100%	Holding Company	1040 Muirfield Drive, Hanover Park IL 60133, United States
Pentair Finance Group GmbH	Switzerland	100%	Holding Company	Freier Platz 10, CH-8200 Schaffhausen, Switzerland
Pentair Finance Holding GmbH	Switzerland	100%	Holding Company	Freier Platz 10, CH-8200 Schaffhausen, Switzerland
Pentair Finance S.a.r.l.	Luxembourg	100%	Holding Company	Regus Business Center, 26, Boulevard Royal, Grand-Duchy of Luxembourg, L-2449, Luxembourg
Pentair Flow Control International Pty Limited	Australia	100%	Holding Company	1-21 Monash Drive, Dandenong South, Victoria 3175, Australia
Pentair Flow FZE	United Arab Emirates	100%	Manufacturing	P.O. Box 52341, Hamriyah Free Zone, plot 1F-09B, Sharjah, United Arab Emirates
Pentair Flow Services AG	Switzerland	100%	Holding Company	Freier Platz 10, CH-8200 Schaffhausen, Switzerland
Pentair Flow Technologies de Mexico, S. de R.L. de C.V.	Mexico	100%	Manufacturing	Los Nogales, Lote 10, Manzana 5, Parque Industrial Villa Florida, Reynosa Tamaulipas, C.P. 88718, Mexico
Pentair Flow Technologies Pacific Pty Ltd	Australia	100%	Manufacturing	1-21 Monash Drive, Dandenong South, Victoria 3175, Australia

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

<b>Company name</b>	<b>Country</b>	<b>Percentage owned</b>	<b>Business purpose</b>	<b>Registered office address</b>
Pentair Flow Technologies, LLC	United States	100%	Manufacturing	208 South LaSalle Street, Suite 814, Chicago IL 60604, United States
Pentair France SARL	France	100%	Manufacturing	Le Broc Center, 1ere avenue 5600 metres, 06510, Carros-Le Broc, France
Pentair Germany GmbH	Germany	100%	Holding Company	Langenalber Strasse 96-100, 75334, Straubenhardt, Germany
Pentair Global Holdings B.V.	Netherlands	100%	Holding Company	Marssteden 50, 7547 TC, Enschede, Netherlands
Pentair Global S.a.r.l.	Luxembourg	100%	Holding Company	Regus Business Center, 26, Boulevard Royal, Grand-Duchy of Luxembourg, L-2449, Luxembourg
Pentair Group (Thailand) Limited	Thailand	100%	Sales & Marketing	33/4 The Ninth Tower Grand Rama 9, Tower B, 16th Floor, Unit TNB03, Rama 9 Road, Huaykwang Sub-district, Huaykwang District, Bangkok, 10310, Thailand
Pentair Holdings S.a.r.l.	Luxembourg	100%	Holding Company	Regus Business Center, 26, Boulevard Royal, Grand-Duchy of Luxembourg, L-2449, Luxembourg
Pentair Holdings, Inc.	United States	100%	Holding Company	1209 Orange Street, Corporation Trust Center, Wilmington DE 19801, United States
Pentair Housing, Inc.	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Pentair Housing, LP	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Pentair Iceland Holdings ehf	Iceland	100%	Holding Company	Katrinartin 2, 19th floor, 105 Reykjavik, Iceland
Pentair International (UK) Ltd	United Kingdom	100%	Holding Company	Regal House, 70 London Road, Twickenham, TW1 3QS, United Kingdom
Pentair International Holding S.a.r.l.	Luxembourg	100%	Holding Company	Regus Business Center, 26, Boulevard Royal, Grand-Duchy of Luxembourg, L-2449, Luxembourg
Pentair International Sarl	Switzerland	100%	Holding Company	Avenue de Sevelin 18, 1004, Lausanne, Vaud, Switzerland
Pentair Investments Switzerland GmbH	Switzerland	100%	Holding Company	Freier Platz 10, CH-8200 Schaffhausen, Switzerland
Pentair Ireland Limited	Ireland	100%	Holding Company	One Earlsfort Centre, Suite 3, Lower Hatch Street, Dublin, DUBLIN 2, Ireland
Pentair Janus Holding LLC	United States	100%	Holding Company	1209 Orange Street, Corporation Trust Center, Wilmington DE 19801, United States
Pentair Janus Holdings	Bermuda	100%	Holding Company	2 Church Street, Clarendon House, c/o Codan Services Limited, Hamilton, HM 11, Bermuda

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

<b>Company name</b>	<b>Country</b>	<b>Percentage owned</b>	<b>Business purpose</b>	<b>Registered office address</b>
Pentair Kenya Limited	Kenya	100%	Manufacturing	ICEA Building, 4th Floor, Kenyatta Avenue, Land Reference Number 209/8287, P.O. Box 30333, Nairobi, 00100, Kenya
Pentair Luxembourg S.a.r.l.	Luxembourg	100%	Holding Company	Regus Business Center, 26, Boulevard Royal, Grand-Duchy of Luxembourg, L-2449, Luxembourg
Pentair Management Company	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Pentair Manufacturing Belgium BVBA	Belgium	100%	Manufacturing	Toekomstlaan 30, B-2200 Herentals, Belgium
Pentair Manufacturing France S.A.S.	France	100%	Manufacturing	Le Broc Center, 1ere avenue 5600 metres, 06510, Carros-Le Broc, France
Pentair Manufacturing Italy S.r.L.	Italy	100%	Manufacturing	Corso Europa 2, angolo Via Trieste, 20020, Lainate (MI), Italy
Pentair Middle East FZE	United Arab Emirates	100%	Manufacturing	Office No. S10122A2039, Jebel Ali, Jebel Ali, United Arab Emirates
Pentair Nanosoft US Holdings, LLC	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Pentair Netherlands Finance B.V.	Netherlands	100%	Holding Company	Marssteden 50, 7547 TC, Enschede, Netherlands
Pentair Netherlands Holding B.V.	Netherlands	100%	Holding Company	Marssteden 50, 7547 TC, Enschede, Netherlands
Pentair Pacific Rim (Water) Limited	Hong Kong	100%	Holding Company	Suite 1106-8, 11/F, Tai Yau Building, No. 181 Johnston Road, Wanchai, Hong Kong
Pentair Pacific Rim, Limited	Hong Kong	100%	Holding Company	Suite 1106-8, 11/F, Tai Yau Building, No. 181 Johnston Road, Wanchai, Hong Kong
Pentair Philippines, Inc.	Philippines	100%	Sales & Marketing	5th floor, Kalimera Building 1747 Nicanor Garcia Street, corner D. Oliman Street, San Miguel Village, Barangay Poblacion, Makati City, Metro Manila, 1210, Philippines
Pentair Residential Filtration, LLC	United States	100%	Manufacturing	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Pentair Services France S.A.S.	France	100%	Manufacturing	Le Broc Center, 1ere avenue 5600 metres, 06510, Carros-Le Broc, France
Pentair Shenzhen Enclosure Company, Ltd.	China	100%	Manufacturing	204, Changhuanjianxing Building No. 3, Block A, West Shahe Road, Nanshan District, Shenzhen, China
Pentair Sudmo GmbH	Germany	100%	Manufacturing	Industriestraße 7, 73469, Riesbürg, Germany
Pentair Tamimi LLC	Saudi Arabia	70%	Manufacturing	Dammam Saudi Arabia

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

<b>Company name</b>	<b>Country</b>	<b>Percentage owned</b>	<b>Business purpose</b>	<b>Registered office address</b>
Pentair Technical Services L.L.C.	United Arab Emirates	49%	Manufacturing	Cornish Road, Al Mizan M1, Office 6, Sheikha Mooza Bint Hamdan Al Nhayan Bulding, Abu Dhabi Island, Abu Dhabi, United Arab Emirates
Pentair Trading (Shanghai) Co., Ltd.	China	100%	Sales & Marketing	921B No.55 Xili Road, Free Trade Zone, Shanghai, China
Pentair Transport, Inc.	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Pentair Tubing Limited	United Kingdom	100%	Holding Company	Regal House, 70 London Road, Twickenham, London, TW13QS United Kingdom
Pentair UK Group Limited	United Kingdom	100%	Holding Company	Regal House, 70 London Road, Twickenham, London, TW13QS United Kingdom
Pentair UK Holdings Limited	United Kingdom	100%	Holding Company	Regal House, 70 London Road, Twickenham, London, TW13QS United Kingdom
Pentair Valves & Controls del Uruguay S.A.	Uruguay	100%	Distribution	Juncal 1327, Of. 2201, Montevideo, 11000, Uruguay
Pentair Water (Suzhou) Company, Ltd.	China	100%	Sales & Marketing	No. 371 He Shan Road, New District, Suzhou, Jiangsu, 215 011, China
Pentair Water Asia Pacific Pte. Ltd.	Singapore	100%	Holding Company	390 Havelock Road, #04-01 King's Centre, 169662, Singapore
Pentair Water Australia Pty Ltd	Australia	100%	Holding Company	1-21 Monash Drive, Dandenong South, Victoria 3175, Australia
Pentair Water Belgium BVBA	Belgium	100%	Manufacturing	Atealaan (HRT) 34, 2200 Herentals, Belgium
Pentair Water Brazil LLC	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Pentair Water do Brasil Ltda.	Brazil	100%	Manufacturing	Av. Marginal Norte da Via Anhanguera, No 53.700, Vila Rami - Jundiai - SP, 13206-245, Brazil
Pentair Water France SAS	France	100%	Manufacturing	Le Broc Center, Iere avenue 5600 metres, 06510, Carros-Le Broc, France
Pentair Water Group, Inc.	United States	100%	Manufacturing	293 Wright Street, Delavan WI 53115, United States
Pentair Water Holdings, LLC	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Pentair Water India Private Limited	India	100%	Manufacturing	L 52-55,Verna Industrial Estate, Phase II, Verna Salcette, Goa, 403 722, India
Pentair Water Italy s.r.l.	Italy	100%	Manufacturing	Corso Europa 2, angolo Via Trieste, 20020, Lainate (MI), Italy
Pentair Water Latinamerica S.A.	Argentina	100%	Manufacturing	San José 165 PB, C1076 AAC, Ciudad Autónoma de Buenos Aires, Argentina

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

<b>Company name</b>	<b>Country</b>	<b>Percentage owned</b>	<b>Business purpose</b>	<b>Registered office address</b>
Pentair Water Operations Australia Pty Ltd	Australia	100%	Manufacturing	1-21 Monash Drive, Dandenong South, Victoria 3175, Australia
Pentair Water Polska Sp.zoo	Poland	100%	Manufacturing	Ul. Plonów 21, 41-200, Sosnowiec, Poland
Pentair Water Pool and Spa, Inc.	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416, United States
Pentair Water Technologie Holding B.V.	Netherlands	100%	Holding Company	Marssteden 50, 7547 TC, Enschede, Netherlands
Pentair Water Process Technology B.V.	Netherlands	100%	Manufacturing	Marssteden 50, 7547 TC, Enschede, Netherlands
Pentair Water Purification Systems (Shanghai) Co., Ltd.	China	100%	Sales & Marketing	622, No.55 Xiya Road, Free Trade Zone, Shanghai, China
Pentair Water Spain, S.L.	Spain	100%	Manufacturing	AV FRANCESC MACIA Num.60 P.10 PTA.4, 08208, SABADELL, Spain
Pentair Water Treatment (OH) Company	United States	100%	Holding Company	220 Park Drive, Chardon OH 44024-1091, United States
Pentair Water Treatment Company	United States	100%	Holding Company	1385 Bishops Drive, Brookfield WI 53045, United States
Pentair Water Treatment Private Limited	India	74%	Manufacturing	L 52-55,Verna Industrial Estate, Phase II, Verna Salcette, Goa, 403 722, India
Pentair Water, LLC	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Pentair Water-Mexico, S. de R.L. de C.V.	Mexico	100%	Manufacturing	Av de los Nogales Lote 6, AL 11 Manzana 5 SN, Parque Industrial, Villa Florida, Tamaulipas, C.P. 88730, Mexico
Pentair, Inc.	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Penwald Insurance Company	United States	100%	Insurance	192 S. Main Street, Barre VT 05641, United States
Peocon ehf.	Iceland	100%	Manufacturing	Katrinartin 2, 19th floor, 105 Reykjavik, Iceland
PES Pty Ltd	Australia	100%	Holding Company	1-21 Monash Drive, Dandenong South, Victoria 3175, Australia
PFAM, Inc.	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Plymouth Products, Inc.	United States	100%	Holding Company	13845 Bishops Drive, Brookfield WI 53045, United States
PTG Accessories Corp.	United States	100%	Manufacturing	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

<b>Company name</b>	<b>Country</b>	<b>Percentage owned</b>	<b>Business purpose</b>	<b>Registered office address</b>
Seneca Enterprises Co.	United States	100%	Manufacturing	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Sta-Rite de Mexico, S.A. de C.V.	Mexico	100%	Sales & Marketing	Avenida Milenium, 2012, Parque Industrial, Milenium, Nuevo León, 66350, Mexico
Sta-Rite de Puerto Rico, Inc.	Puerto Rico	100%	Distribution	361 San Francisco St., San Juan, 00901, Puerto Rico
Sta-Rite Industries, LLC	United States	100%	Manufacturing	293 Wright Street, Delavan WI 53115, United States
Sudmo (UK) Ltd.	United Kingdom	100%	Manufacturing	Regal House, 70 London Road, Twickenham, London, TW13QS United Kingdom
Surface Logix LLC	United States	0.03%	Manufacturing	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Tupelo Real Estate, LLC	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Union Engineering (NingBo) Co., Ltd.	China	100%	Manufacturing	188# Donghui Road Nordic Industrial Park, Zhenhai District, Ningbo Zhejiang, China, 315221, China
Union Engineering A/S	Denmark	100%	Manufacturing	Snarelosevej 27, Erritsø, 7000, Fredericia, Denmark
Union Engineering Holding II A/S	Denmark	100%	Holding Company	Snarelosevej 27, Erritsø, 7000, Fredericia, Denmark
Union Engineering Holding LLC	United States	100%	Holding Company	1 Industry Drive, Palm Coast FL 32137, United States
Union Engineering Latam Ltda	Brazil	100%	Manufacturing	Rodovia Curitiba Ponta Grossa BR 277, número 6047, Bairro Cidade Industrial, cidade de Curitiba, Estado do Paraná, Paraná, CEP 82305-200, Brazil
Union Engineering North America LLC	United States	100%	Manufacturing	1 Industry Drive, Palm Coast FL 32137, United States
Urban Organics Pentair Group, LLC	United States	70%	Holding Company	700 Minnehaha Avenue East, St. Paul MN 55106, United States
Urban Organics Schmidt Real Estate Group, LLC	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Urban Organics St. Paul, LLC	United States	100%	Holding Company	5500 Wayzata Blvd., Suite 900, Golden Valley MN 55416-1261, United States
Vaki A/S	Norway	100%	Manufacturing	HiB, Thormøhlens gate 55, 5006 Bergen, Aksjeselskap, Norway
Vaki Aquaculture Systems ehf.	Iceland	100%	Manufacturing	Katrinartín 2, 19th floor, 105 Reykjavík, Iceland
Vaki Chile Ltda	Chile	100%	Manufacturing	Ruta 5 Sur, Camino a Pargua Km 1024, Megacentro 1, Modulo 9, Puerto Montt, 5480000, Chile

***Pentair plc and Subsidiaries***  
***Notes to consolidated financial statements***

<b>Company name</b>	<b>Country</b>	<b>Percentage owned</b>	<b>Business purpose</b>	<b>Registered office address</b>
Vaki Scotland Ltd	United Kingdom	100%	Manufacturing	13, Rutland Street, Edinburgh, EH1 2AE, United Kingdom
Voltea Ltd.	United Kingdom	10%	Manufacturing	Wasbeekerlaan 24, 2171 AE, Sassenheim, Netherlands
Webster Electric Company, LLC	United States	100%	Manufacturing	293 Wright Street, Delavan WI 53115, United States
WICOR Industries (Australia) Pty. Ltd.	Australia	100%	Holding Company	1-21 Monash Drive, Dandenong South, Victoria 3175, Australia
X-Flow B.V.	Netherlands	100%	Manufacturing	Marssteden 50, 7547 TC, Enschede, Netherlands

**PENTAIR PLC**  
Company Financial Statements  
For the financial year ended 31 December 2018

**Pentair plc**  
**Company Balance Sheet**

<i>In millions</i>	Note	31 December 2018	31 December 2017
<b>Financial assets</b>			
Shares in group undertakings	3	\$ 6,474	\$ 9,065
Other investments other than loans		—	2
Total financial assets		6,474	9,067
<b>Current assets</b>			
Prepaid expenses		1	1
Amounts due from subsidiaries		16	26
Income taxes receivable		—	1
Other debtors		31	—
Total current assets		48	28
<b>Creditors (amounts falling due within one year)</b>			
Other creditors		11	22
Total creditors (amounts falling due within one year)		11	22
<b>Net current assets</b>		37	6
<b>Total assets less current liabilities</b>		6,511	9,073
<b>Creditors (amounts falling after more than one year)</b>			
Amounts owed to group undertakings		30	48
Other creditors		21	30
<b>Net assets</b>		\$ 6,460	\$ 8,995
<b>Capital and reserves</b>			
Called-up share capital presented as equity		\$ 2	\$ 2
Share premium account		101	77
Profit and loss account		6,219	8,799
Other reserves		138	117
<b>Total shareholders' funds</b>		\$ 6,460	\$ 8,995

In accordance with Section 304(2) of the Companies Act 2014, the Company is availing of the exemption from presenting and filing its individual profit and loss account. Pentair plc's loss for the years ended 31 December 2018 and 2017 as determined in accordance with FRS 102, the financial reporting standard applicable in the United Kingdom and Republic of Ireland, was \$1,893 million and \$69 million, respectively.

Approved by the Board of Directors on 19 February 2019 and signed on its behalf by:

/s/ John L. Stauch

Director

/s/ Glynis A. Bryan

Director

**Pentair plc**  
**Company Statement of Cash Flows**

The below table provides a reconciliation of net loss for the financial period to cash provided by (used in) operating activities for the financial periods ended 31 December 2018 and 2017:

<i>In millions</i>	<b>Financial periods ended</b>	
	<b>31 December 2018</b>	<b>31 December 2017</b>
<b>Operating activities</b>		
Net loss for the financial period	\$ (1,893)	\$ (69)
Adjustments for:		
Diminution in value of subsidiary undertakings	2,516	—
Cash provided by (used in) operating activities before movement in working capital	623	(69)
Change in debtors	(28)	(124)
Change in creditors	(10)	34
Net cash flows provided by (used in) operating activities	585	(159)
<b>Investing activities</b>		
Dividends received from subsidiaries	96	641
Net cash flows provided by (used in) investing activities	96	641
<b>Financing activities</b>		
Dividends paid	(187)	(252)
Repurchases of ordinary shares	(500)	(200)
Shares issued to employees, net of shares withheld	24	40
Net (repayments to) borrowings from subsidiaries	(18)	(70)
Net cash flows provided by (used in) financing activities	(681)	(482)
<b>Change in cash at bank and in hand</b>	<b>—</b>	<b>—</b>
<b>Cash at bank and in hand, beginning of the year</b>	<b>—</b>	<b>—</b>
<b>Cash at bank and in hand, end of the year</b>	<b>\$ —</b>	<b>\$ —</b>

**Pentair plc**  
**Company Statement of Changes in Equity**

Shareholders' funds activity of the parent Company for the financial years ended 31 December 2018 and 2017 was as follows:

<i>In millions</i>	<b>Called up &amp; fully paid share capital</b>	<b>Share premium reserve</b>	<b>Capital redemption reserve</b>	<b>Profit and loss account</b>	<b>Other reserves</b>	<b>Total</b>
<b>Balance - 31 December 2016</b>	\$ 2	\$ 31	\$ —	\$ 9,320	\$ 77	\$ 9,430
Loss for the financial year	—	—	—	(69)	—	\$ (69)
Repurchase of shares	—	—	—	(200)	—	\$ (200)
Share-based compensation	—	—	—	—	40	\$ 40
Exercise of option net of shares tendered for payment	—	46	—	—	—	\$ 46
Declaration of dividends	\$ —	\$ —	\$ —	\$ (252)	\$ —	\$ (252)
<b>Balance - 31 December 2017</b>	\$ 2	\$ 77	\$ —	\$ 8,799	\$ 117	\$ 8,995
Loss for the financial year	—	—	—	(1,893)	—	(1,893)
Repurchase of shares	—	—	—	(500)	—	(500)
Share-based compensation	—	—	—	—	21	21
Exercise of options, net of shares tendered for payment	—	24	—	—	—	24
Declaration of dividends	—	—	—	(187)	—	(187)
<b>Balance - 31 December 2018</b>	\$ 2	\$ 101	\$ —	\$ 6,219	\$ 138	\$ 6,460

On 6 December 2016, the Board of Directors declared a quarterly cash dividend of \$0.345 that was paid on 10 February 2017 to shareholders of record at the close of business on 27 January 2017. As this dividend was not approved by shareholders as of 31 December 2016, it did not meet the criteria to be provided for as a liability in the Company Balance Sheet. The amount paid on 10 February 2017 related to this dividend was \$62 million.

On 5 December 2017, the Board of Directors declared a quarterly cash dividend of \$0.350 that was paid on 9 February 2018 to shareholders of record at the close of business on 26 January 2018. As this dividend was not approved by shareholders as of 31 December 2017, it did not meet the criteria to be provided for as a liability in the Company Balance Sheet. The amount paid on 9 February 2018 related to this dividend was \$63 million.

On 10 December 2018, the Board of Directors declared a quarterly cash dividend of \$0.180 per share that was paid on 8 February 2019 to shareholders of record at the close of business on 25 January 2019. As this dividend was not approved by shareholders as of 31 December 2018, it did not meet the criteria to be provided for as a liability in the Company Balance Sheet. The amount paid on 8 February 2019 related to this dividend was \$31 million.

Note 12 of the consolidated Group financial statements provides additional details regarding shareholders' funds.

## ***Pentair plc***

### ***Notes to company financial statements***

#### **1. Basis of Presentation and Summary of Significant Accounting Policies**

##### ***General information and basis of accounting***

The books and accounting records of Pentair plc are maintained at the Company's executive office at Regal House, 70 London Road, Twickenham, London, TW13QS U.K. and are readily accessible at Pentair plc's registered address of Arthur Cox, 10 Earlsfort Terrace, Dublin 2, Ireland. Pentair plc (the "Company," "we," "us," or "our") is a company incorporated in Ireland under the Companies Act 2014. The nature of the company's operations and its principal activities are set out in the directors' report on page 1.

The parent company financial statements of the Company for the financial years ended 31 December 2018 and 2017 have been prepared in accordance with generally accepted accounting practice in Ireland ("Irish GAAP"), comprising the Financial Reporting Standards 102 ("FRS 102"), the Financial Reporting Framework applicable in the U.K. and Republic of Ireland ("relevant financial reporting framework"), together with the Companies Act 2014. These financial statements are prepared under Irish GAAP as they are prepared specifically to comply with Irish legislative requirements and represent the results and financial position of the Company, which is incorporated and registered in the Republic of Ireland.

##### ***Functional currency***

Items included in these financial statements are measured using the currency of the primary economic environment in which Pentair plc operates (the "functional currency"). The financial statements are presented in United States ("U.S.") dollars, which is the Company's functional and presentation currency.

##### ***Currency translation***

Gains and losses resulting from foreign currency transactions are included in profit and loss.

##### ***Investments in group undertakings***

Pentair plc's investment in Pentair Investments Switzerland GmbH ("PISG") was recorded at fair value on 3 June 2014, the date Pentair plc acquired 100% of the ordinary share capital of PISG as part of the Merger (defined in Note 2 below). The fair value was based on the Company's market capitalization at that date. This initial valuation became Pentair plc's cost basis for its investment in PISG. The investment is tested for impairment if circumstances or indicators suggest that impairment may exist. The amount of impairment is the difference between the asset's carrying amount and the present value of estimated future cash flows.

##### ***Dividends***

Dividends may only be declared and paid out of the profits available for distribution in accordance with accounting practice generally accepted in Ireland and applicable Irish company law. Any dividends, if and when declared, will be declared and paid in U.S. dollars. We paid dividends in 2018 of \$187 million, or \$1.05 per share, compared with \$252 million, or \$1.38 per share in 2017.

##### ***Share-based compensation***

The Company applies the requirements of FRS 102 Section 26 Share-Based Payment in accounting for all share-based compensation, consequently, the measurement and recognition of compensation expense for all share-based payment awards made to employees and directors is based on estimated fair values.

The Company issues equity-settled share options appreciation rights to certain employees of its subsidiaries. Equity-settled share-based payment transactions are measured at fair value (excluding the effect of non market-based vesting conditions) at the date of grant. Where this expense is not recharged by the Company to its subsidiaries, it is accounted for as a capital contribution included in Shares in group undertakings as reflected in Note 3. See Note 13 of the Group Financial Statements for further discussion of share-based compensation. Where the company pays the related employee tax liability on share options issued, the share option balance outstanding to the employee is reduced by a similar value.

##### ***Going concern***

The directors have a reasonable expectation that the Company has adequate resources to continue in operational existence for the foreseeable future. Thus they continue to adopt the going concern basis of accounting in preparing the annual financial statements.

## *Pentair plc*

### *Notes to company financial statements*

#### ***Critical accounting judgments and key sources of estimation uncertainty***

In the application of the Company's accounting policies, which are described above, the directors are required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods. The main area of accounting judgement and estimate in the Company relates to the carrying value of shares in group undertakings where the Company is required to assess any potential indicators of impairment. The key source of estimation in the carrying value of group undertakings relate to the estimation of the share based payment charge which forms part of the carrying value of group undertakings and involves various inputs in calculating the appropriate share based payment charge.

#### **2. History of the Company**

Pentair plc was incorporated in Ireland, as a public limited company, on 28 November 2013 in order to assist the change of the Company's jurisdiction of incorporation from Switzerland to Ireland. The former group holding company, Pentair Ltd., was incorporated in Switzerland and was listed on the New York Stock Exchange ("NYSE"). Pentair Ltd. became the group holding company on 28 September 2012, subsequent to a spin-off of Pentair Ltd. from its then parent, Tyco International Ltd. ("Tyco") and a reverse acquisition involving Pentair, Inc. (a Minnesota corporation that was listed on the NYSE and predecessor to Pentair Ltd.).

On 10 December 2013, the Board of Directors of Pentair Ltd. approved a merger agreement (the "Merger Agreement") between the Company and Pentair Ltd. (the "Merger"). At an extraordinary meeting of shareholders of Pentair Ltd. held on 20 May 2014, Pentair Ltd. shareholders voted to approve the Merger Agreement. The Merger was completed on 3 June 2014, following entry of the Merger in the Schaffhausen Cantonal register in Switzerland and the jurisdiction of organisation of the Pentair group changed from Switzerland to Ireland.

The reorganisation was effected by: (i) Pentair Ltd. transferring certain assets, liabilities and agreements by way of a contribution to the equity of PISG, a newly-formed wholly-owned, direct subsidiary of Pentair Ltd. organised under the laws of Switzerland (the "Contribution"), followed by; (ii) the Merger, with the Company surviving as the publicly-traded parent entity and successor to Pentair Ltd.

Accordingly, all of the outstanding common shares of Pentair Ltd. were canceled and all holders of such shares were issued Pentair plc ordinary shares on a one-for-one basis. Shares of the Irish company, Pentair plc, began trading on the NYSE on 3 June 2014 under the symbol "PNR," the same symbol under which Pentair Ltd. shares were previously traded. Prior to 3 June 2014, Pentair plc had no substantive operating activity.

#### **3. Shares in Group Undertakings**

Pentair plc owns 100% of the ordinary share capital of PISG. The principal activity of PISG is an investment holding company. As discussed in Note 1, Pentair plc's investment in PISG was recorded at fair value on the date of the reorganisation based on the Company's market capitalization at that date. This initial valuation became Pentair plc's cost basis in PISG. The table below presents a rollforward of activity during the financial years ended 31 December 2018 and 2017 within the investment in subsidiary account.

<i>In millions</i>	<b>2018</b>
At 31 December 2016, at cost less impairment	\$ 9,608
Return of capital from PISG	(641)
Investment in subsidiary undertakings	98
At 31 December 2017, at cost less impairment	\$ 9,065
Diminution in value of subsidiary undertakings	(2,516)
Return of capital from PISG	(96)
Investment in subsidiary undertakings	21
At 31 December 2018, at cost less impairment	\$ 6,474

## ***Pentair plc***

### ***Notes to company financial statements***

The diminution in value of subsidiary undertakings of \$2.5 billion arose primarily due to the demerger of the nVent business in April 2018. Details of the demerger are described in Note 2 of the consolidated Group financial statements.

In 2018, PISG paid dividends of \$745 million to Pentair plc. Of this, \$96 million has been accounted for as a return of capital and \$649 million has been recognized as dividend income by the Company.

In 2017, PISG paid dividends to Pentair plc of \$641 million, respectively, that were utilized to pay down amounts owed by Pentair plc to Pentair Finance S.à r.l. (“PFSA”), a Luxembourg company and indirect wholly-owned subsidiary of the Company, for dividend payments and share repurchases. These dividends were accounted for as returns of capital from PISG.

The \$21 million and \$98 million of investments in subsidiary undertakings during 2018 and 2017, respectively, represent equity-settled share-based payment transactions not recharged to subsidiaries and recorded as a capital contribution for the financial years ended 31 December 2018 and 2017.

No impairment charge was recorded as part of our annual impairment test in 2017.

#### **4. Guarantees and Contingencies**

##### ***Indemnifications of officers and directors***

The Company has indemnification agreements with the members of its board of directors to indemnify them to the extent permitted by law against any and all liabilities, costs, expenses, amounts paid in settlement and damages incurred by any director as a result of any lawsuit or any judicial, administrative or investigative proceeding brought against such director as a result of their service as a member of the Company’s board of directors.

##### ***Debt***

As of 31 December 2018, PFSA and Pentair, Inc., a U.S. company and indirect wholly-owned subsidiary of the Company, have a \$800 million unsecured revolving credit facility expiring in 2023 and PFSA has \$690 million aggregate principal amount of public notes outstanding comprised of the following: \$250 million of 2.65% notes due 2019, €137 million (\$155 million) of 2.45% notes due 2019, \$74 million of 3.625% notes due 2020, \$104 million of 5.0% notes due 2021, \$88 million of 3.15% notes due 2022 and \$19 million of 4.65% notes due 2025. In addition to being the issuer of the listed senior notes and a borrower under the revolving credit facility, PFSA is also the issuer of commercial paper.

The credit facility, public notes of both PFSA and Pentair, Inc. and notes issued under the commercial paper program are fully and unconditionally guaranteed joint and severally on a senior unsecured basis by Pentair plc and Pentair Investments Switzerland GmbH (“PISG”).

##### ***Guarantees***

In connection with the disposition of our businesses or product lines, we may agree to indemnify purchasers for various potential liabilities relating to the sold business, such as pre-closing tax, product liability, warranty, environmental, or other obligations. The subject matter, amounts and duration of any such indemnification obligations vary for each type of liability indemnified and may vary widely from transaction to transaction.

Generally, the maximum obligation under such indemnifications is not explicitly stated and as a result, the overall amount of these obligations cannot be reasonably estimated. Historically, we have not made significant payments for these indemnifications. We believe that if we were to incur a loss in any of these matters, the loss would not have a material effect on our financial position, results of operations or cash flows.

We recognize, at the inception of a guarantee, a liability for the fair value of the obligation undertaken in issuing the guarantee. In connection with the disposition of the Valves & Controls business, we agreed to indemnify Emerson Electric Co. for certain pre-closing tax liabilities. In 2017, we recorded a liability representing the fair value of our expected future obligation for this matter.

In the ordinary course of business, we are required to commit to bonds, letters of credit and bank guarantees that require payment to our customers for any non-performance. The outstanding face value of these instruments fluctuates with the value of our projects in process and in our backlog. In addition, we issue financial stand-by letters of credit primarily to secure our performance to third parties under self-insurance programs.

## *Pentair plc*

### *Notes to company financial statements*

As of 31 December 2018 and 2017, the outstanding value of bonds, letters of credit and bank guarantees totaled \$124 million and \$129 million, respectively.

In addition, we provide support in the form of financial and/or performance guarantees to various subsidiary operating entities. While some of these performance guarantees have no limit, the value of these guarantees that are capped was approximately \$1.7 billion and \$2.2 billion at 31 December 2018 and 2017, respectively.

#### *Statutory audit exemption guarantee*

For the year ended 31 December 2018, the subsidiaries of the Company incorporated under UK law listed below were entitled to exemption from audit under §479A of the U.K. Companies Acts 2006 relating to subsidiary companies.

<b>Company name</b>	<b>Company registration number</b>
Edward Barber & Company Limited	00212339
Edward Barber (U.K.) Limited	01594821
Hypro EU Limited	02571559
Pentair Environmental Systems Limited	02168228
Pentair International (U.K.) Limited	11172430
Pentair U.K. Group Limited	04546395
Sudmo (U.K.) Limited	02599802
Pentair U.K. Holdings Limited	08840081

The liabilities in respect of the undertakings listed above, which have arisen in respect of the financial year ended 30 June 2018 for Sudmo (U.K.) Limited and 31 December 2018 for all other undertakings listed above, are already included within the Group's consolidated balance sheet.

#### **5. Called up Share Capital Presented as Equity**

The authorized share capital of the Company is 426 million ordinary shares of \$0.01 par value.

Called up share capital activity of the Company for the financial years ended 31 December 2018 and 2017 was as follows:

	<b>Ordinary Shares</b>
<b>Balance - 31 December 2016</b>	<b>181,766,551</b>
Repurchase of shares	(2,962,184)
Exercise of options, net of shares tendered for payment	1,240,037
Ordinary shares of \$0.01 par value issued for share-based compensation activity	396,676
Shares surrendered by employees to pay taxes	(134,464)
<b>Balance - 31 December 2017</b>	<b>180,306,616</b>
Repurchase of shares	(10,216,295)
Exercise of options, net of shares tendered for payment	900,371
Ordinary shares of \$0.01 par value issued for share-based compensation activity	488,115
Shares surrendered by employees to pay taxes	(115,193)
<b>Balance - 31 December 2018</b>	<b>171,363,614</b>

#### *Share repurchases*

In December 2014, the Board of Directors authorized the repurchase of our ordinary shares up to a maximum dollar limit of \$1.0 billion (the "2014 Authorization"). On 8 May 2018, the Board of Directors authorized the repurchase of our ordinary shares up to a maximum dollar limit of \$750.0 million (the "2018 Authorization"), replacing the 2014 Authorization. The 2018 Authorization expires on 31 May 2021.

## ***Pentair plc***

### ***Notes to company financial statements***

During the year ended 31 December 2017, we repurchased 3.0 million of our ordinary shares for \$200 million under the 2014 Authorization.

During the year ended 31 December 2018, we repurchased 10.2 million of our shares for \$500 million, of which 2.2 million shares, or \$150 million, and 8.0 million shares, or \$350.0 million, were repurchased pursuant to the 2014 and 2018 Authorizations, respectively.

As of 31 December 2018, we had \$400.0 million available for share repurchases under the 2018 Authorization.

The repurchase of our ordinary shares under these authorizations from the Board of Directors from time to time, based on market conditions, allow management to return excess cash to enhance shareholder value.

#### **6. Loss Attributable to Pentair plc**

In accordance with Section 304(2) of the Companies Act 2014, the Company is availing of the exemption from presenting and filing its individual profit and loss account. Pentair plc's loss for the years ended 31 December 2018 and 2017 as determined in accordance with FRS 102, the financial reporting standard applicable in the United Kingdom and Republic of Ireland, was \$1,893 million and \$69 million, respectively.

#### **7. Directors Remuneration**

Note 24 of the consolidated Group financial statements provides details of directors' remuneration borne by the Company.

#### **8. Auditor's Remuneration**

Auditor's remuneration for the financial years ended 31 December 2018 and 2017 was as follows:

<i>In millions</i>	<b>2018</b>	<b>2017</b>
Audit of the Company financial statements	\$ —	\$ —
Other assurance services	0.2	0.2
Tax advisory services	—	—
Other non-audit services	—	—
<b>Total auditors' remuneration</b>	<b>\$ 0.2</b>	<b>\$ 0.2</b>

Note 25 of the consolidated Group financial statements provides additional details of fees paid by the Group.

#### **9. Related Party Transactions**

The Company has availed of the exemption provided in FRS 102 Section 33, Related Party Disclosures, from disclosing transactions with subsidiary undertakings, 100% of whose voting rights are controlled within the Group. Consequently, the financial statements do not contain disclosures of such transactions with entities in the Pentair plc group.

The directors have determined that key management are the director group. Remuneration related to key management personnel is disclosed in Note 24 of the consolidated Group financial statements.

#### **10. Subsidiary Undertakings**

Pentair plc owns Pentair Investments Switzerland GmbH. All of Pentair Investments Switzerland GmbH's subsidiaries are included in Note 27 of the consolidated Group financial statements.

