

# JOHNSON ELECTRIC HOLDINGS LIMITED

FY2015/16

Interim Results

January 2016



innovating motion

---

Group Overview

Key Financial Highlights

Operational Results

Stackpole Acquisition

Outlook

Appendix

# JOHNSON ELECTRIC GROUP OVERVIEW

---

*Johnson Electric is the global leader in custom designed motion subsystems, including motors, solenoids, switches and flexible interconnects. We serve a broad range of industry segments including automotive, building automation and security, business machines, security and aerospace, food and beverage equipment, home technologies, HVAC, industrial equipment, medical devices, personal care, power equipments and power tools.*

*Established in 1959, Johnson Electric designs and produces custom motion solutions throughout the world for use in a broad range of product applications. Innovation centers are located in Hong Kong, China, Switzerland, Germany, Italy, Israel, Japan and the UK and the USA. Total global headcount including contract staff stands at approximately 34,500 people.*

*The annual production capacity are over one billion motor and actuators and manufactures products in more than a dozen countries on four continents.*

*Johnson Electric has been listed on The Stock Exchange of Hong Kong Limited since 1984.*

# COMPANY VISION AND BRAND PROMISE

---



## Company Vision

To be the world's definitive provider of innovative and reliable motion systems

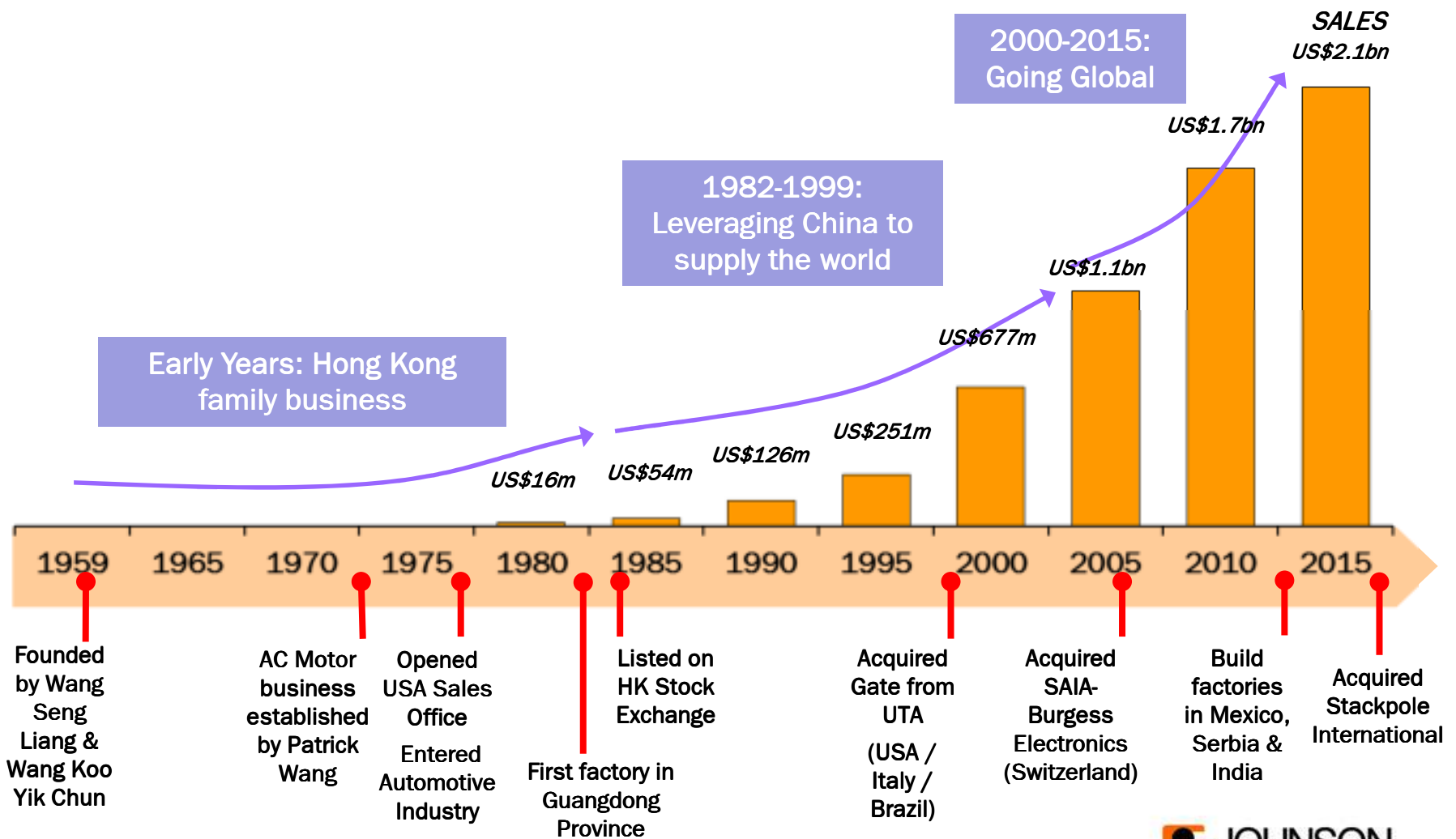
## Brand Promise

“Technology Leadership”

“The Safe Choice”



# KEY MILESTONES 1959 – 2015



# APG APPLICATIONS

<b>Powertrain Cooling</b>  <b>Cooling Fan Module</b>	<b>Haptic</b>  <b>Command Feedback</b>	<b>HVAC</b>  <b>Mix</b>  <b>Air Distribution</b>	<b>Door Locks</b>  <b>Door Lock</b>	<b>Window Lift &amp; Sunroof Drives</b>  <b>Window Lift Drive</b>  <b>Sunroof Drive</b>	<b>Seating</b>  <b>Seat Adjuster</b>  <b>Seatbelt Pretensioner</b>		
 <b>Battery Cooling</b>	<b>Lighting</b>  <b>Headlamp Adjuster</b>  <b>Headlamp Adjuster</b>  <b>LED Lighting</b>	<b>Washer Pumps</b>  <b>Washer Pump</b>  <b>Windshield Washer</b>  <b>Headlamp Washer</b>	<b>Mirrors</b>  <b>Mirror Adjuster</b>  <b>Power Folder</b>	 <b>Rearner Adjuster</b>  <b>Lumbar Support</b>			
 <b>Grill Shutter</b>  <b>Coolant Valve</b>					<b>Chassis &amp; Braking</b>  <b>Electronic Stability Control</b>  <b>Motorcycle ABS</b>  <b>Electric Parking Brake</b>	<b>Power Closure</b>  <b>Power Lift Gate Drive</b>  <b>Latching / Chocking</b>  <b>Door Closure Assist</b>	
<b>Steering</b>  <b>Electric Power Steering</b>  <b>Electric Steering Column Lock</b>					<b>Engine</b>  <b>Electronic Throttle Control</b>  <b>Exhaust Gas Recirculation</b>  <b>Fuel Pump</b>  <b>Variable Geometry Turbocharger</b>  <b>Diesel Exhaust Fluid</b>	<b>Transmission</b>  <b>Automated Manual Transmission</b>  <b>Dual Clutch Transmission</b>	<b>Driveline</b>  <b>Rear Drive Unit</b>  <b>Power Transfer Unit</b>

# IPG APPLICATIONS



Medical Devices



Smart Meters



Circuit Breakers



Lawn & Garden



Power Tools



Personal Care



Power Sports



HVAC



Building Automation



Business Machines



Digital Security



Home Technologies



Food & Beverages



Industrial Equipment



Special Vehicles



Optronics

---

Group Overview

Key Financial Highlights

Operational Results

Stackpole Acquisition

Outlook

Appendix



# HIGHLIGHTS

---

- ✓ *Group sales* US\$1,022 million – down 5% compared to the first half of prior financial year. Excluding currency effects, sales **increased by 2%**
- ✓ *EBITDA* US\$163 million or **16.0%** of sales (15.9% in prior year)
- ✓ *Operating margin* **11.2%** (11.6% in prior year)
- ✓ *Net profit attributable to shareholders* down **11%** to US\$98 million
- ✓ *Total debt to capital ratio* of **13%** and *cash reserves* of **US\$678 million**
- ✓ *Interim dividend increased* by **7%** to 15 HK Cents per share (1.92 US Cents per share)
- ✓ Acquisition of **Stackpole International** completed on 27th October 2015

# FINANCIAL HIGHLIGHTS

<i>US\$ million</i>	First half of FY2015/16	First half of FY2014/15
Sales	1,022.4	1,079.6
Gross profit	282.3	326.0
<i>Gross margin</i>	27.6%	30.2%
Profit attributable to shareholders	97.8	109.3
Diluted earnings per share (US Cents)	11.12	12.12
EBITDA <sup>1</sup>	163.2	171.8
<i>EBITDA margin</i>	16.0%	15.9%
Free cash flow from operations <sup>2</sup>	16.6	83.4
<i>US\$ million</i>	30 Sep 2015	31 Mar 2015
Cash	677.6	773.2
Total debt <sup>3</sup>	286.6	291.3
Net cash (cash - total debt)	391.0	481.9
Enterprise value <sup>4</sup>	2,477.6	2,589.3
Enterprise value to EBITDA <sup>5</sup>	7.6	7.7
<b>Credit Quality - Financial Ratios <sup>5</sup></b>	30 Sep 2015	31 Mar 2015
Free cash flow from operations <sup>2</sup> to total debt	31%	53%
Total debt to EBITDA	0.9	0.9

1. Earnings before interest, tax, depreciation and amortisation
2. Net cash generated from operating activities plus net interest received, less capital expenditure (net of proceeds from disposal of fixed assets) and capitalisation of engineering development costs.
3. Total debt calculated as borrowings plus convertible bonds
4. Enterprise value calculated as market capitalisation plus non-controlling interests plus total debt less cash
5. EBITDA and free cash flow from operations were annualised using the last twelve months' results

---

Group Overview

Key Financial Highlights

**Operational Results**

Stackpole Acquisition

Outlook

Appendix

# PROFITABILITY REVIEW

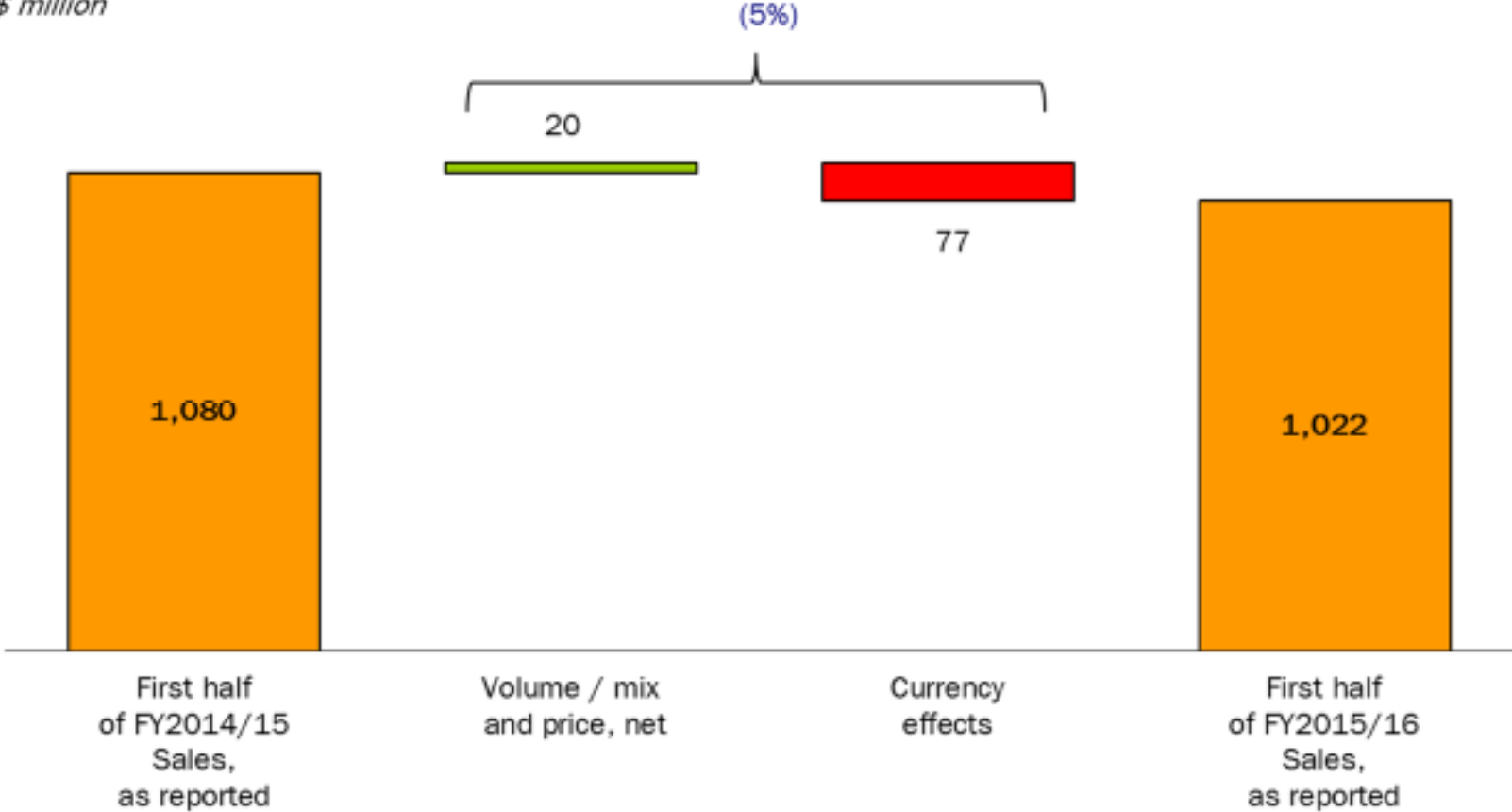
## 1H FY2015/16 vs. 1H FY2014/15

<i>US\$ million</i>	First half of FY2015/16	First half of FY2014/15	Increase/ (decrease) in profit
Sales	1,022.4	1,079.6	(57.2)
Gross profit	282.3	326.0	(43.7)
<i>Gross margin %</i>	<i>27.6%</i>	<i>30.2%</i>	
Other income and gains, net	14.0	7.5	6.5
Selling and administrative expenses ("S&A")	(181.4)	(208.5)	27.1
<i>S&amp;A %</i>	<i>17.7%</i>	<i>19.3%</i>	
Operating profit	114.9	125.0	(10.1)
<i>Operating profit margin %</i>	<i>11.2%</i>	<i>11.6%</i>	
Net interest (expense) / income	(0.3)	3.2	(3.5)
Share of profit of associate	0.5	0.4	0.1
Profit before income tax	115.1	128.6	(13.5)
<i>Income tax expense</i>	<i>(13.0)</i>	<i>(15.0)</i>	<i>2.0</i>
Effective tax rate	11.3%	11.7%	
Profit for the period	102.1	113.6	(11.5)
Non-controlling interests	(4.3)	(4.3)	-
Profit attributable to shareholders	97.8	109.3	(11.5)

# SALES CHANGES

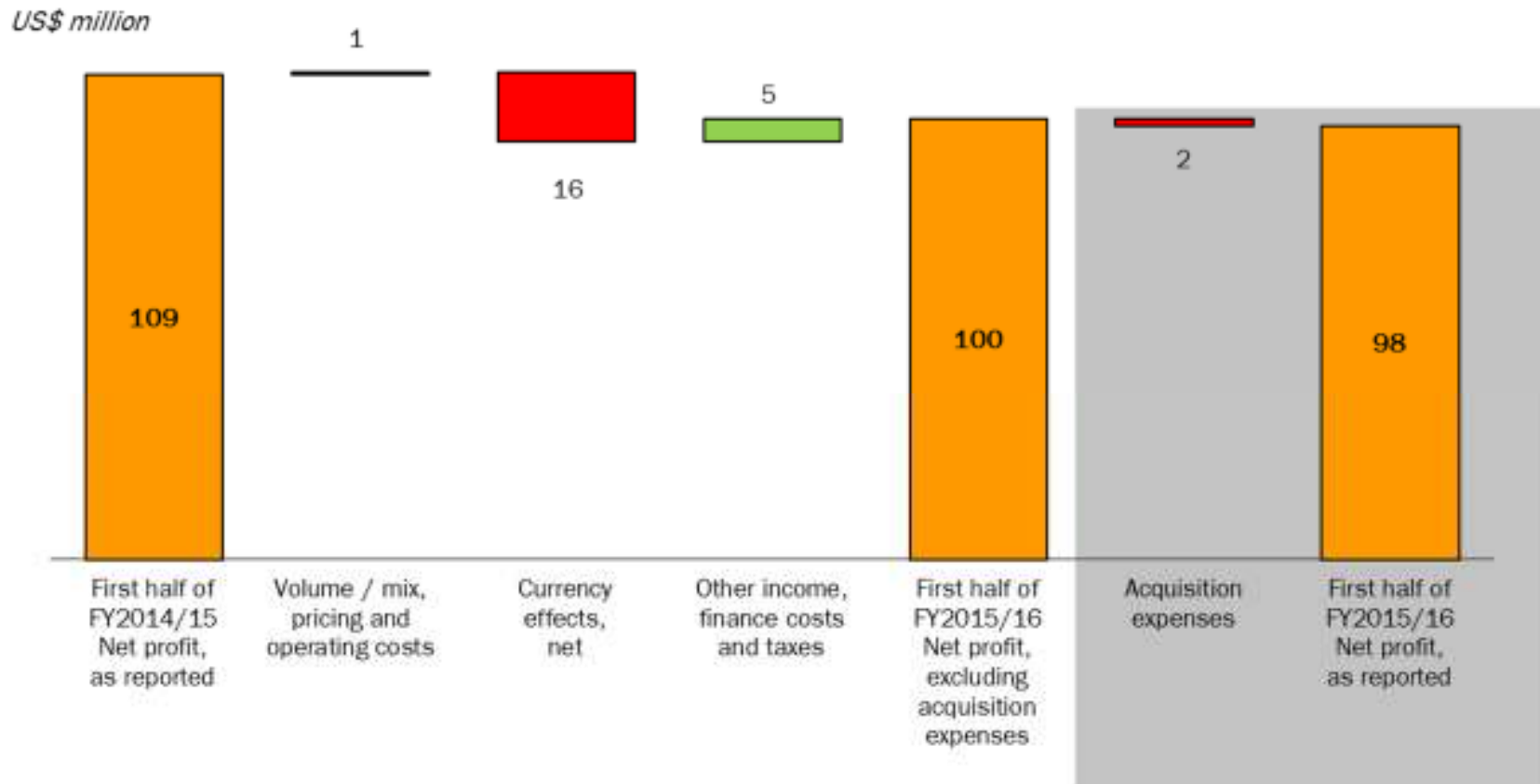
## 1H FY2015/16 vs. 1H FY2014/15

US\$ million



Note: Numbers do not add across due to the effect of rounding

# CHANGES IN PROFIT ATTRIBUTABLE TO SHAREHOLDERS

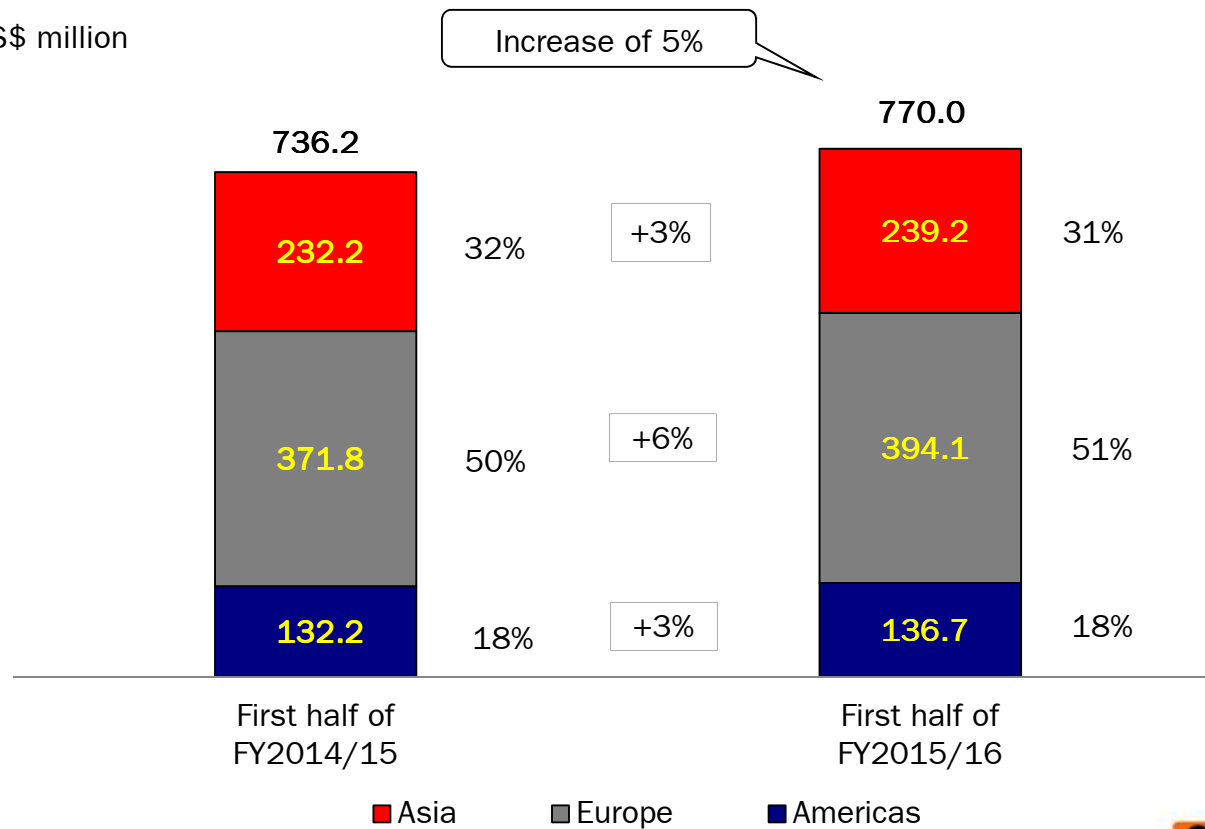


Note: Numbers do not add across due to the effect of rounding

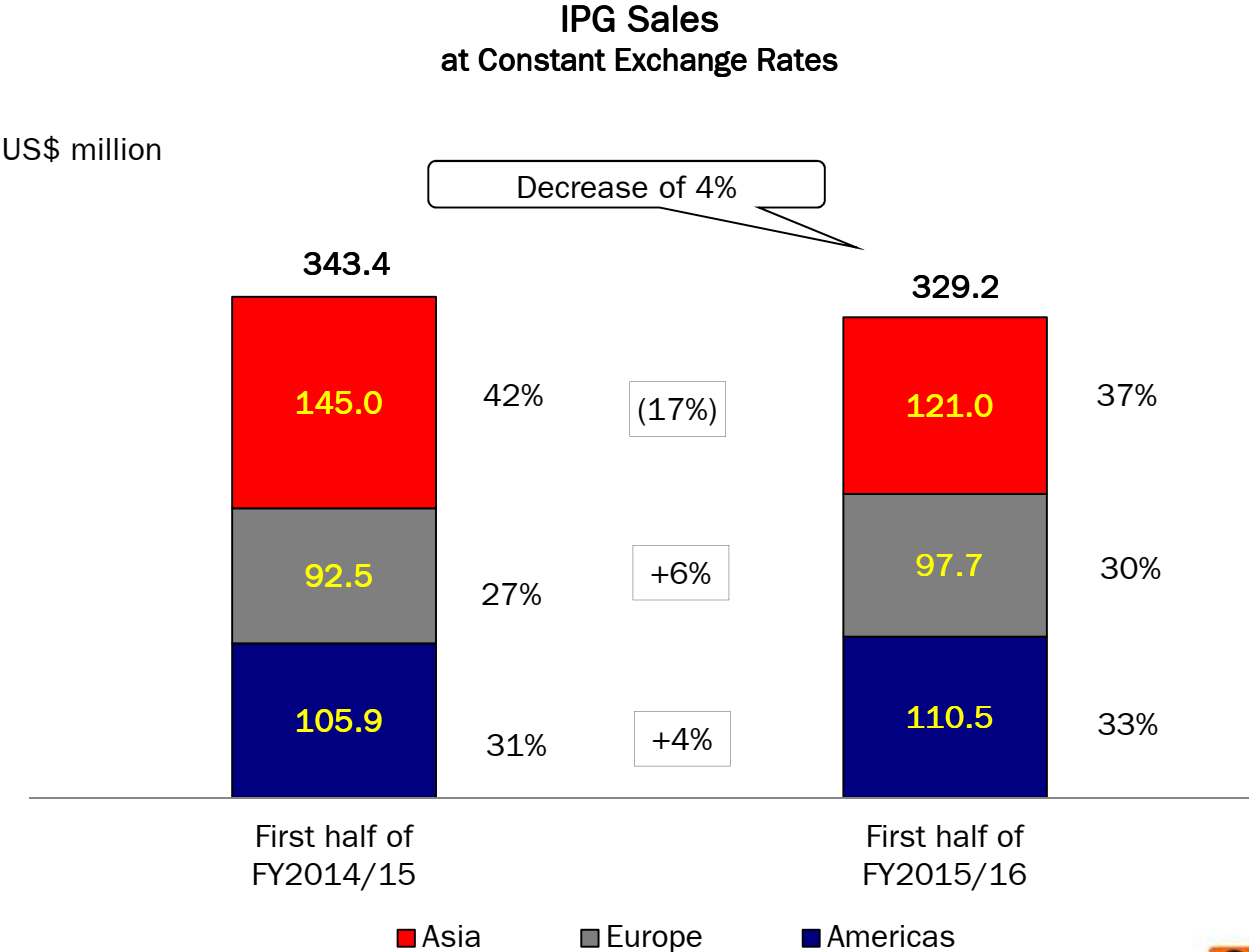
# GROUP SALES BY BUSINESS - APG

APG Sales  
at Constant Exchange Rates

US\$ million



# GROUP SALES BY BUSINESS - IPG





# ANALYSIS OF CASH FLOW

<i>US\$ million</i>	First half of FY2015/16	First half of FY2014/15	Change
Operating profit	114.9	125.0	(10.1)
Depreciation and amortisation	48.3	46.8	1.5
<b>EBITDA</b>	<b>163.2</b>	<b>171.8</b>	<b>(8.6)</b>
Other non-cash items in profit before taxes	(2.4)	1.4	(3.8)
Working capital changes	(60.8)	(14.6)	(46.2)
Interest paid	(1.7)	(0.8)	(0.9)
Income taxes paid	(20.6)	(19.6)	(1.0)
<b>Net cash generated from operating activities</b>	<b>77.7</b>	<b>138.2</b>	<b>(60.5)</b>
Capital expenditure, net of subsidies	(77.7)	(58.7)	(19.0)
Proceeds from disposal of fixed assets	15.1	0.3	14.8
Capitalisation of engineering development costs	(2.5)	(3.8)	1.3
Interest received	4.0	7.4	(3.4)
<b>Free cash flow from operations</b>	<b>16.6</b>	<b>83.4</b>	<b>(66.8)</b>

# OTHER CASH FLOWS

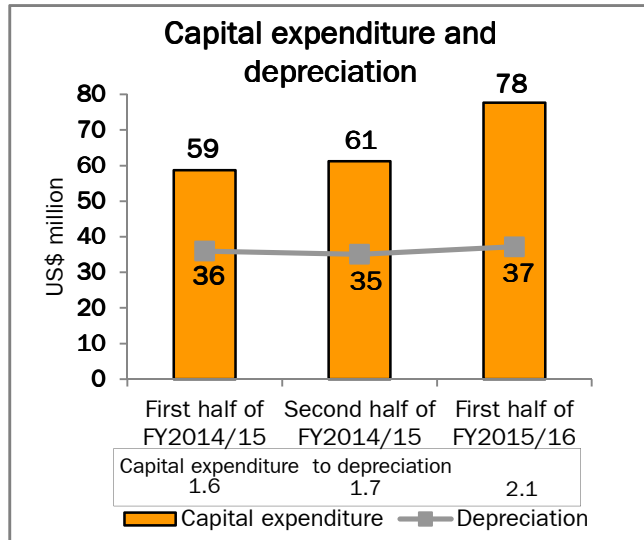
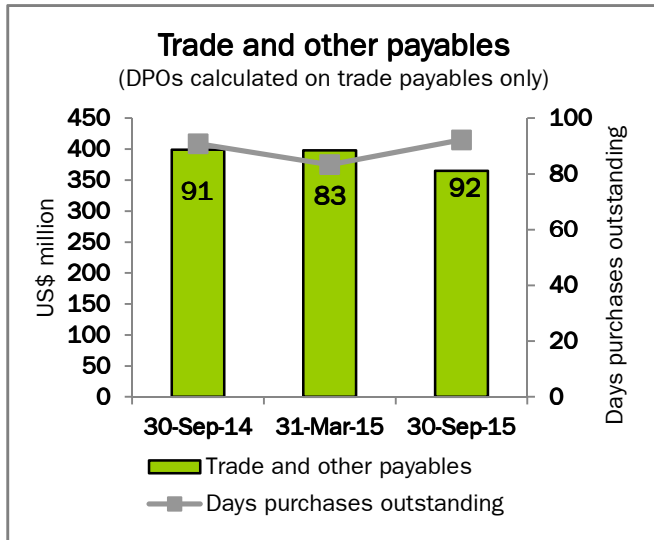
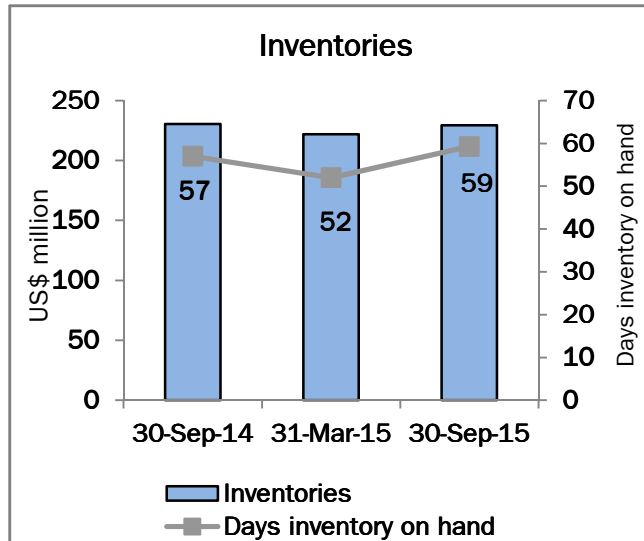
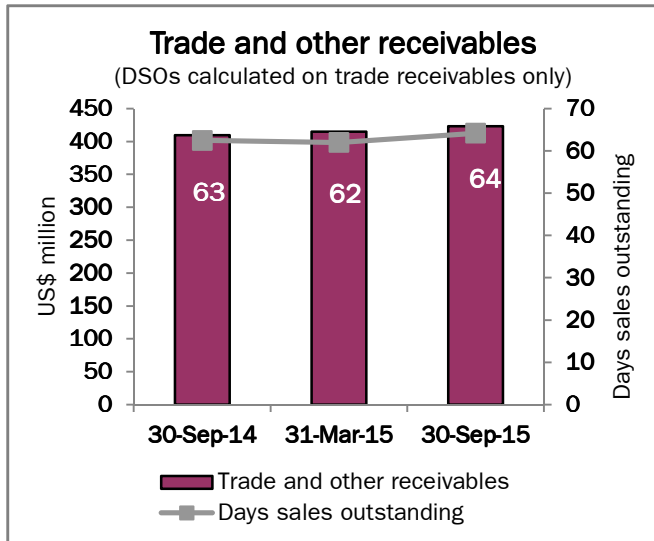
<i>US\$ million</i>	First half of FY2015/16	First half of FY2014/15	Change
<b>Free cash flow from operations</b>	<b>16.6</b>	<b>83.4</b>	<b>(66.8)</b>
Acquisition	(2.0)	(9.2)	7.2
Other investing activities	(42.8)	0.8	(43.6)
Dividends paid	(37.8)	(38.8)	1.0
Purchase of shares held for incentive share schemes	(21.6)	(31.1)	9.5
Purchase of shares for cancellation of issued capital	-	(18.2)	18.2
Total cash flow (excluding changes in borrowings and currency effects)	(87.6)	(13.1)	(74.5)
Net repayment of borrowings	(9.1)	(3.2)	(5.9)
Proceeds from issuance of convertible bonds, net of transaction costs	-	197.3	(197.3)
Net movement in cash, excluding currency effects	(96.7)	181.0	(277.7)
Exchange gains / (losses) on cash	1.1	(15.0)	16.1
<b>Net movement in cash</b>	<b>(95.6)</b>	<b>166.0</b>	<b>(261.6)</b>

# DIVIDENDS & SHARES

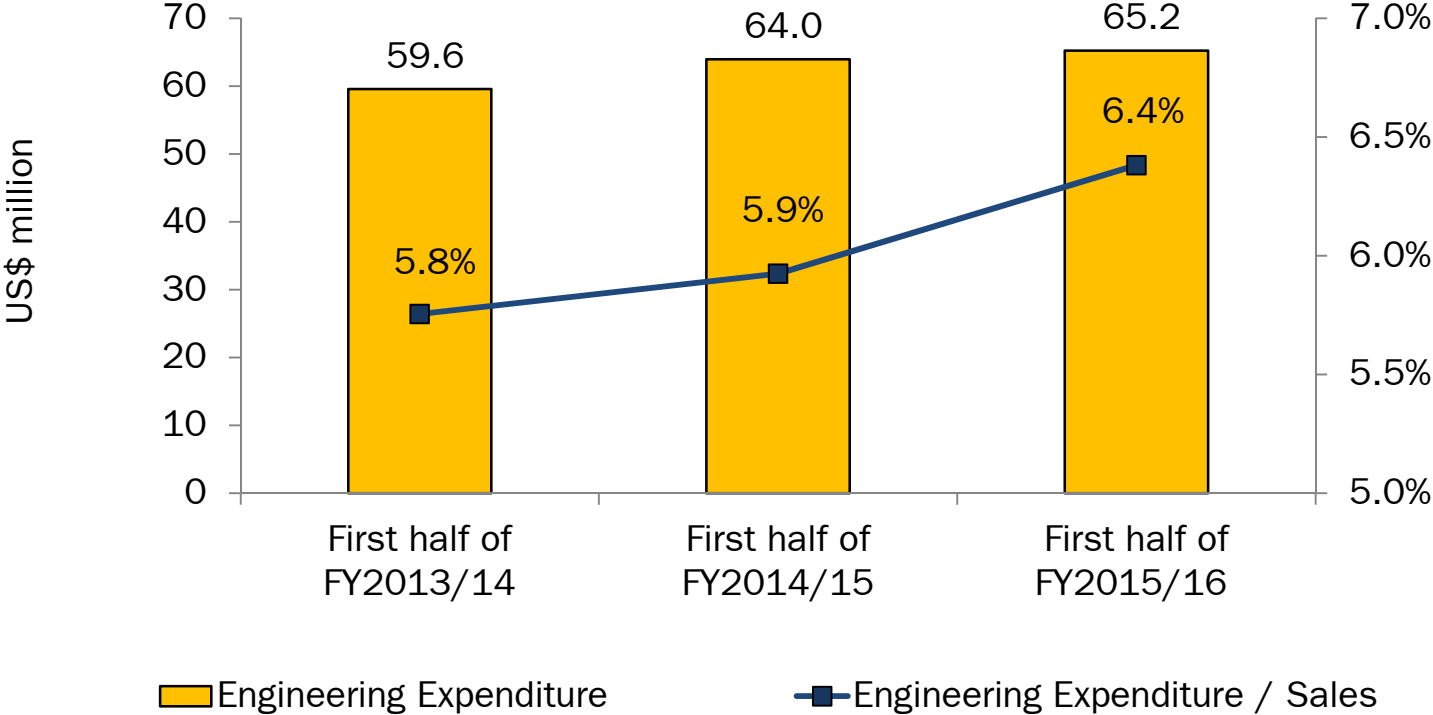
---

- ▶ **Interim dividend increased by 7% to 15 HK Cents per share for FY2015/16 compared to 14 HK Cents paid for FY2014/15**
- ▶ **No purchases of shares for cancellation in the first half of FY2015/16**

# WORKING CAPITAL & CAPEX



# ENGINEERING EXPENDITURE



---

Group Overview

Key Financial Highlights

Operational Results

Stackpole Acquisition

Outlook

Appendix

# Transaction Summary

---

- ▶ Acquisition of Stackpole International, a leading supplier of engine and transmission pumps and powder metal components, primarily for automotive
- ▶ Purchase Consideration: ~C\$870M
  - ▶ Total Enterprise Value of C\$800M
  - EV/Normalized EBITDA in 2014: 9.8-9.9x
  - Purchase Price is subject to post-closing adjustments including working capital and transaction expenses
- ▶ **Financing:** funded by JE's cash reserves and existing revolving credit facilities
- ▶ Transaction was completed on the 27<sup>th</sup> October 2015
- ▶ Excluding one-time transaction costs, estimated to be C\$20M , we expect the acquisition to be earnings enhancing for the Group in FY2015/16

# Transaction Rationale

---

- ▶ **JE has identified significant opportunities in Electric Pump market**
  - Demand for increased fuel efficiency and the associated shift to electrical components in vehicle systems have been driving the rapid growth in automotive pumps – particularly in engine and transmission applications
  - With the addition of pump capabilities, JE will be able to offer integrated motor-pump solutions that are compact, light-weight and leak-proof. Significant cost synergies can be obtained
  
- ▶ **Stackpole presents a perfect fit to JE's strategy for automotive**
  - A leading player in engine and transmission pumps, especially in North America, with established OEM relationships
  - A vertically integrated player with powder metals capability, which is crucial to differentiation of pumps and other JE products
  - Helps balance JE's regional footprint to take advantage of the growth of automotive industry in North America





# Overview of Stackpole

---

- **Headquarters:** Ontario, Canada
- **Founded:** 1906
- **Key Products:** Engine and Transmission Pumps
- **Locations:** Canada, Turkey & China
- **Sales:** C\$ 487M (Year 2014)
- **Employees:** ~2,500



# Why Stackpole?

---

- ▶ **A leading player in pumps and powder metals, differentiated by proprietary technologies**
  - Pioneer of variable vane pumps
  - Global leader in precision powder metal parts
- ▶ **Relentless drive for fuel efficiency in the automotive industry will continue to drive demand for Stackpole's products**
  - Both product lines of Stackpole – pumps and powder metal parts – contribute to fuel efficiency
- ▶ **High revenue visibility with longevity of powertrain platforms**
  - New business / successor business booked through to 2025-2027
- ▶ **Manufacturing footprint is well positioned for global growth**

# A Leading Player in Pumps & Powder Metals

Stackpole is a leading player in pumps and powder metals. It is differentiated by know-how in pump design and powder metal manufacturing processes

## Pumps (57% of Total Sales)

## Powder Metals (43% of Total Sales)

*Key Products*



Engine Oil Pumps



Transmission Oil Pumps



Vacuum Pumps



Carriers



Clutch Components



Gears & Sprockets

*Market Position*

One of the leading oil pump manufacturer in North America and Europe

One of the leading powder metals manufacturer focusing in automotive industry of North America

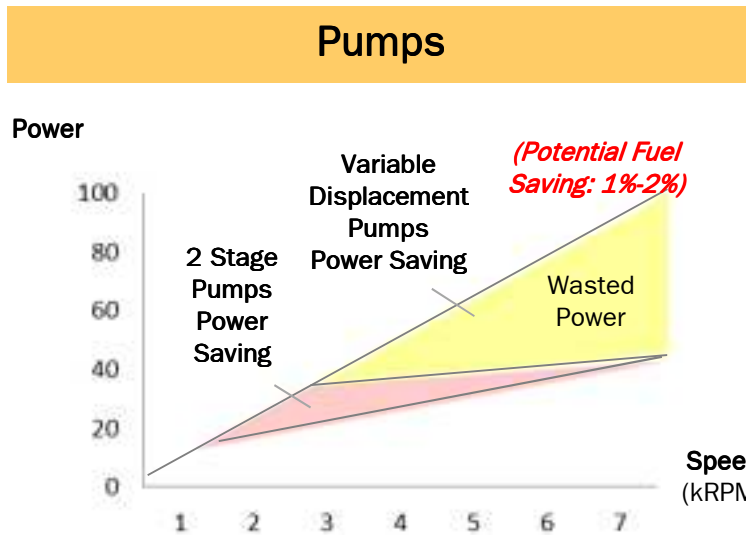
*Stackpole's Differentiation*

- The pioneer of the fuel-efficient variable vane pump more than 20 years ago
  - Over 25 million units installed globally, far in excess of any other supplier
  - In-depth product know-how in noise, vibration and harshness, hydraulic and durability performance
- Proprietary technologies and processes that underpin a portfolio of highly complex, non-commoditized products
  - Relied upon by customers for material process design and production capability
  - Offers leading, value-added finishing capabilities

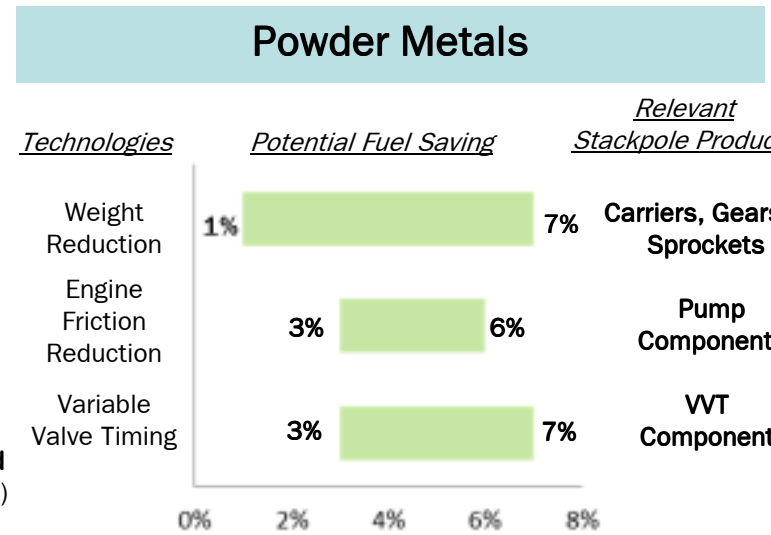
# Contribution to Fuel Efficiency

Relentless drive for fuel efficiency in the automotive industry will continue to drive demand for Stackpole's products

*How Stackpole Products can Help?*



- Variable Displacement Pumps: Enable the engine displacement and the flow rate of oil to be controlled. This saves on wasted energy and power to reduce fuel consumption











- Carriers, gears & sprockets: Reduce mass relative to conventional cast iron parts
- Pump components: Optimize engine and transmission oil pump performance
- VVT components: Enable increased performance for the same engine displacement

1 Variable Valve Timing  
Source: Roland Berger, JE Analysis

# Longevity of Powertrain Platforms

Powertrain platforms typically last 8 to 12 years: Stackpole's business is booked for periods beyond 2025

	Pumps	Powder Metals
<i>Top Customers</i>	   	   
<i>Current &amp; Secured Successor Platforms</i>	<ul style="list-style-type: none"> <li>Variable Transmission Pumps</li> <li>Variable Engine Pumps</li> <li>Variable Tandem Pumps</li> </ul>	<ul style="list-style-type: none"> <li>Carriers</li> <li>Sprockets</li> <li>Variable Valve Timing Components</li> </ul>
<i>End of Life</i>	2025-27	2025-26

# Operating Footprint

Manufacturing footprint is well positioned for global growth

## Geographic Footprint



Note: There are two other facilities in China and Korea operated by HSC Joint Venture, which is 30% owned by Stackpole

# Transaction Rationale

---

Stackpole will be a key element to JE's strategy for automotive business

1

Access to the sizable and rapidly growing electric oil pump market enabled by electrification of vehicle systems

2

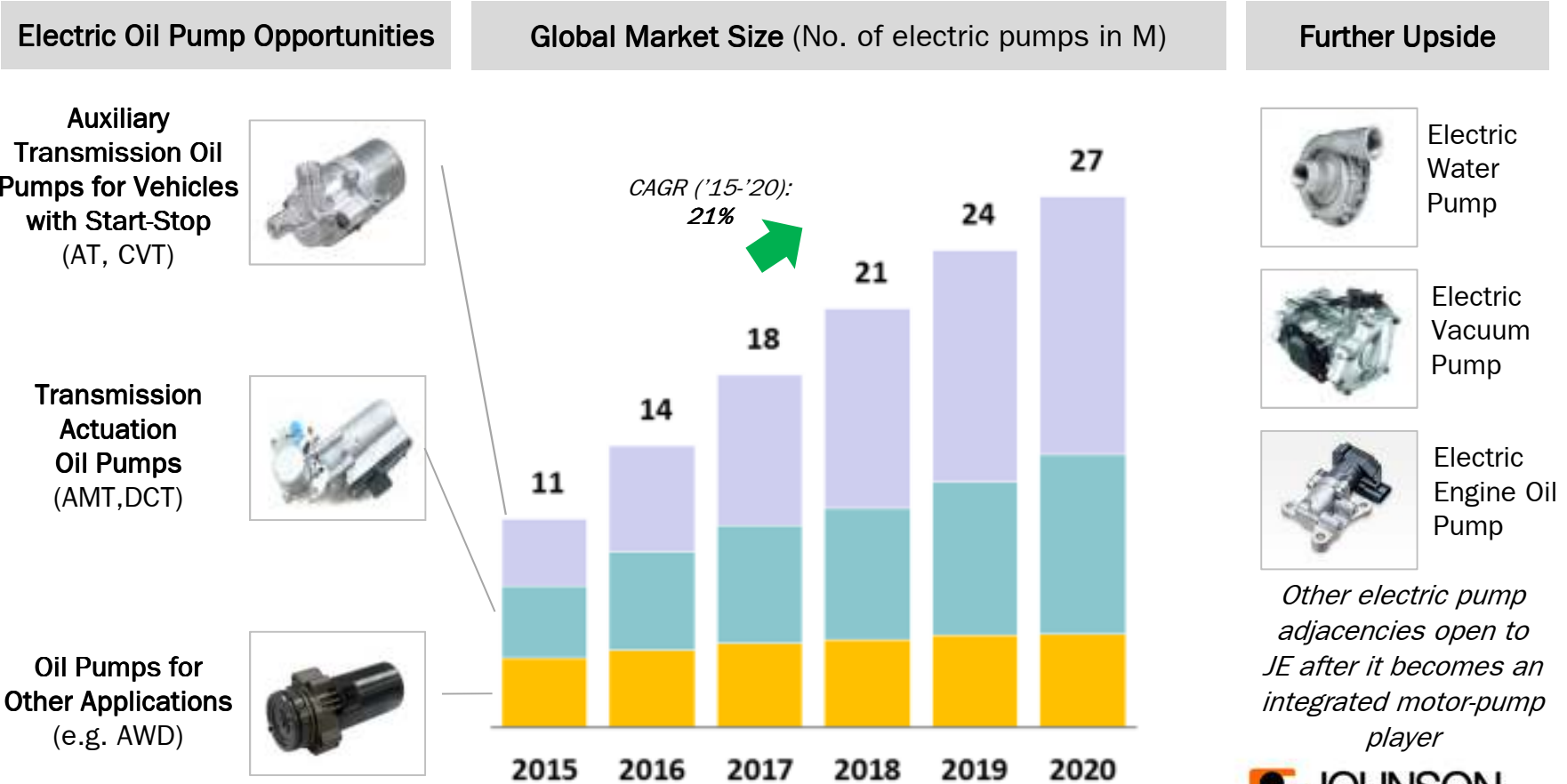
Ability to offer integrated motor-pump solutions that are compact, light-weight and leak-proof. Significant cost synergies can be obtained

3

Balancing JE's regional footprint to take advantage of the growth of automotive industry in North America

# 1 Access to the attractive Electric Oil Pump segment

An acquisition in oil pump segment will offer JE access to a rapidly developing market for electric pumps for both transmission and driveline applications

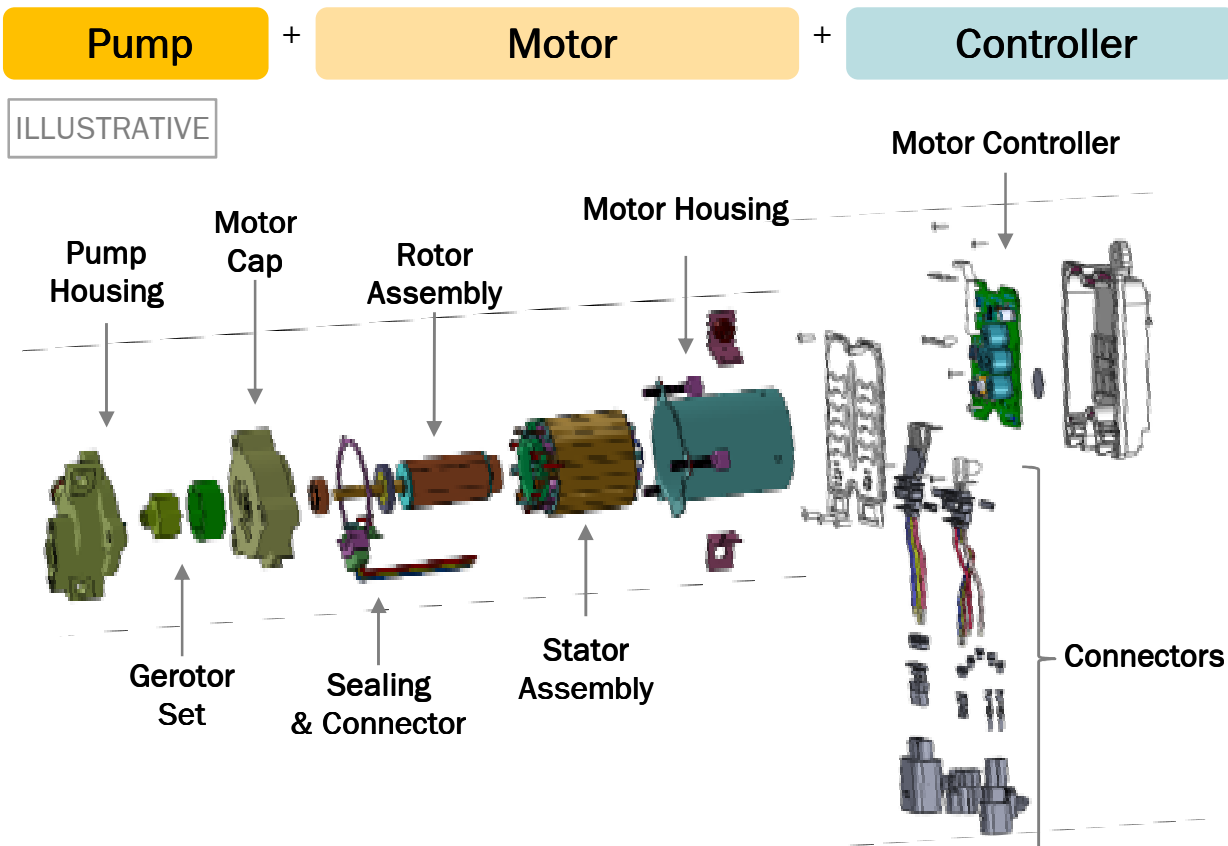


Source: IHS Automotive, Navigant Research, JE Analysis



## “Motor-Pump” as a More Compelling Proposition

An integrated “motor-pump” module is a more compelling product offering than separately sourced and manufactured pumps and motors



### Proposition to Customers:

Compared to separate pumps & motors, integrated modules have:

- More **compact** designs
- Lighter **weight**
- Higher **efficiency**
- Low **noise** and low **vibration**
- Reduced **leaks**
- Lower **costs**

Note: Based on an illustrative example of Electric Oil Pump

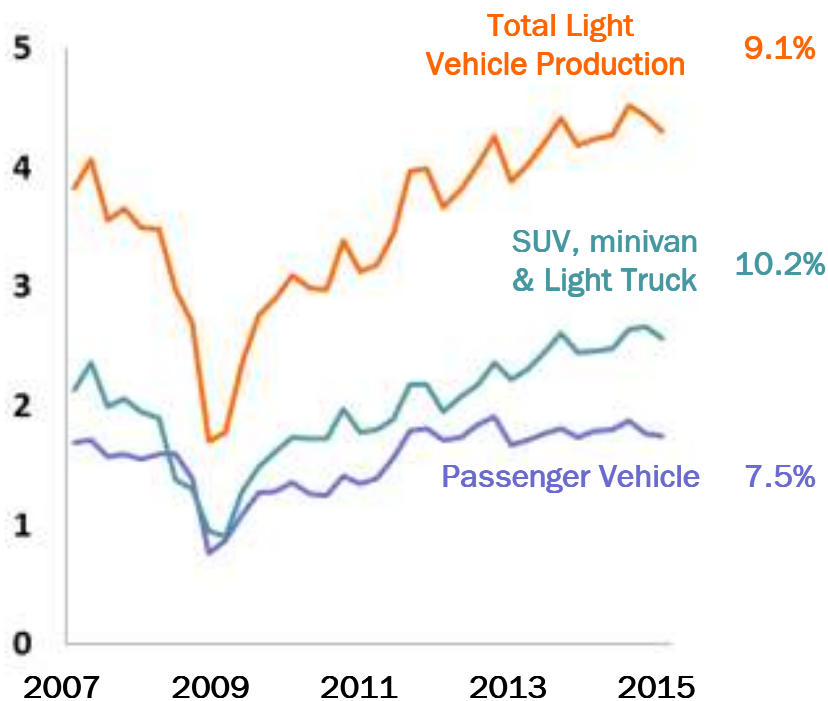
## Benefiting from US Automotive Industry Growth

With Stackpole, JE will be well-positioned to benefit from the thriving automotive industry in North America which has been boosted by recent low gasoline prices

### North American Light Vehicle Production

Quarterly, in M units

*CAGR '11-'14*



### U.S. Retail Petrol and Oil Prices

Weekly, in US\$

Retail Petrol  
(per gallon)

WTI Crude Oil  
(per barrel)



Source: IHS Automotive, U.S. Energy Information Administration, JE Analysis

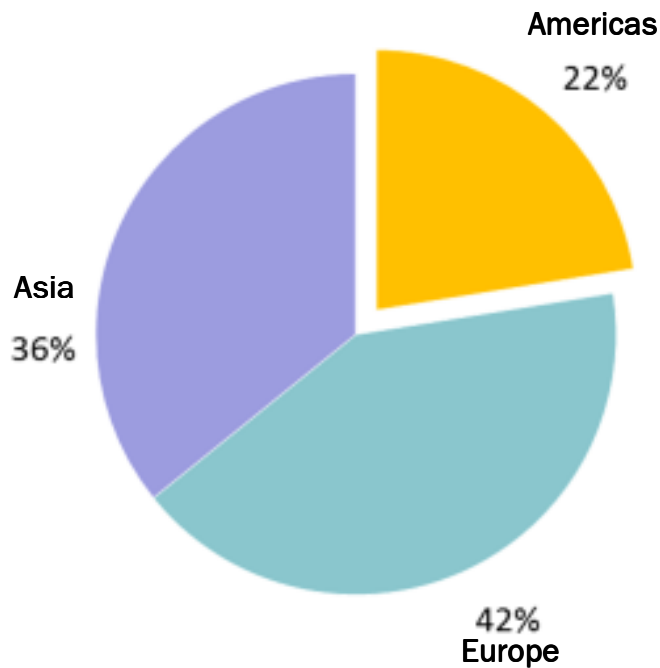


innovating motion

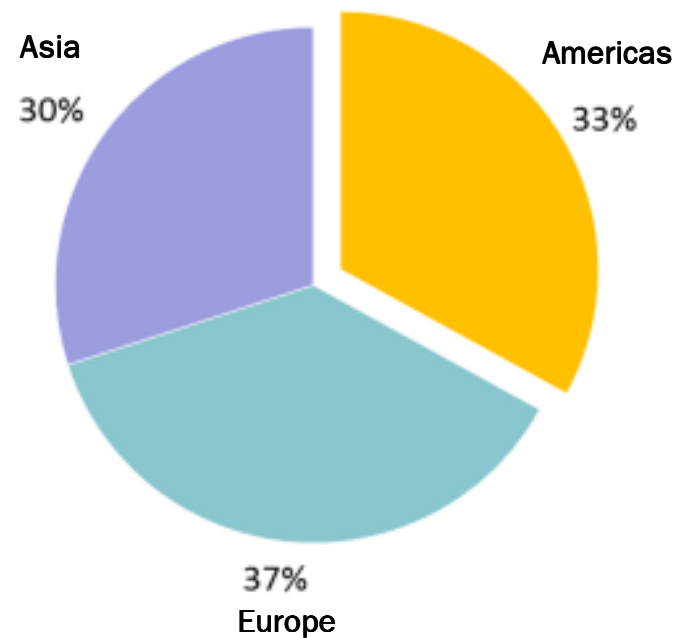
## A More Balanced Business Portfolio

As a result of the transaction, JE's business will be more balanced geographically

JE Sales by Geography  
Pro-forma, FY14/15



JE & Stackpole Sales by Geography  
Pro-forma, FY14/15



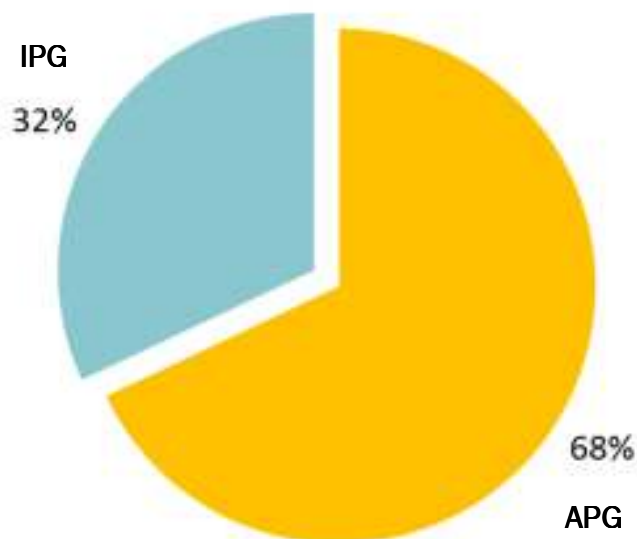
Note: Stackpole's 2014 Actual and 15 Budget financials are proportionally added to those of FY14/15 of JE;  
FX rate: 1USD=1.25CAD

Source: JE Analysis

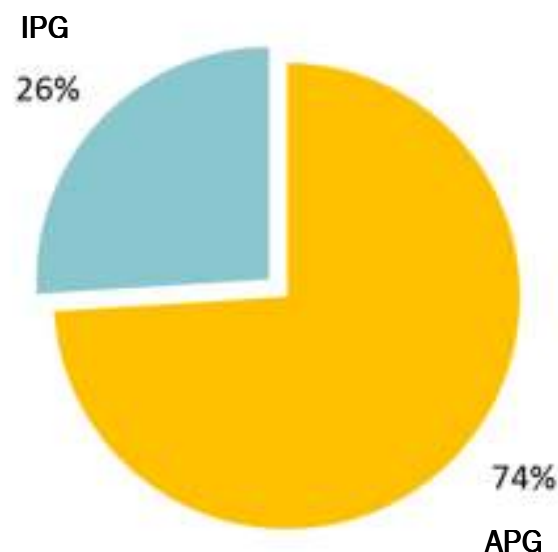
# Implications to Johnson Electric Group

As a result of the transaction, Automotive Products Group will account for approximately three quarters of the JE's total revenue

JE Business Mix<sup>1</sup>  
Pro-forma, FY14/15



JE & Stackpole Business Mix<sup>1</sup>  
Pro-forma, FY14/15



1 APG stands for Automotive Products Group; IPG stands for Industry Products Group

Note: Stackpole's 2014 Actual and 15 Budget financials are proportionally added to those of FY14/15 of JE;

FX rate: 1USD=1.25CAD

Source: JE Analysis

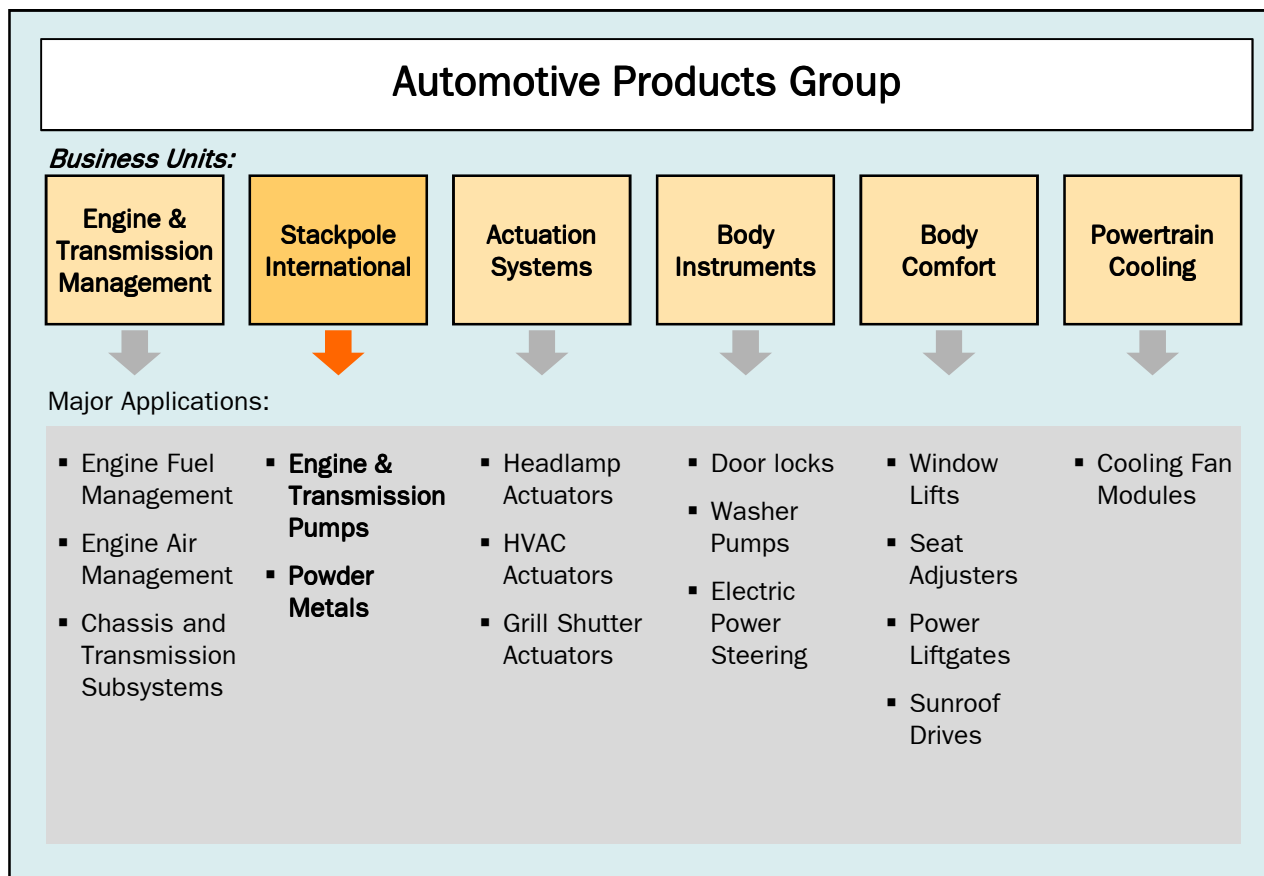
# STACKPOLE – Historical Financial Summary

<i>C\$ million</i>	FYE 31 Dec 2014	FYE 31 Dec 2013
Sales* (Excluding HSC Joint Venture)	486.8	464.7
Normalised EBITDA (including HSC Joint Venture)	81.8	94.3
<i>Normalised EBITDA margin</i>	<i>16.8%</i>	<i>20.3%</i>
Reported (loss) / profit before taxation and extraordinary items	(0.8)	25.8
Net profit after taxation and extraordinary items	0.3	16.9
<i>Net profit margin</i>	<i>0.1%</i>	<i>3.6%</i>
Net assets	152.7	154.2

\* In FYE 31 December 2014, North America sales by destination accounted for approximately 80% of revenue of Stackpole International (excluding sales of HSC Joint Venture).

# Implications to Johnson Electric Group

Stackpole will be a key addition to JE's Automotive Products Group



- Transaction has completed on the 27<sup>th</sup> October 2015
- It is expected to be earnings enhancing for the Group in FY2016/17

# Focus of Integration

---

- ▶ **Joint New Product Development and Sales**
  - A dedicated joint team, based in Canada, will be set up to accelerate new product development and sales opportunities in motor-pumps
- ▶ **Expanded Commitment to R&D**
- ▶ **Retention of Senior Management Team**
- ▶ **Realizing Potential Synergies**
  - Primarily from motor-pump integration
  - Supply chain and logistics

---

Group Overview

Key Financial Highlights

Operational Results

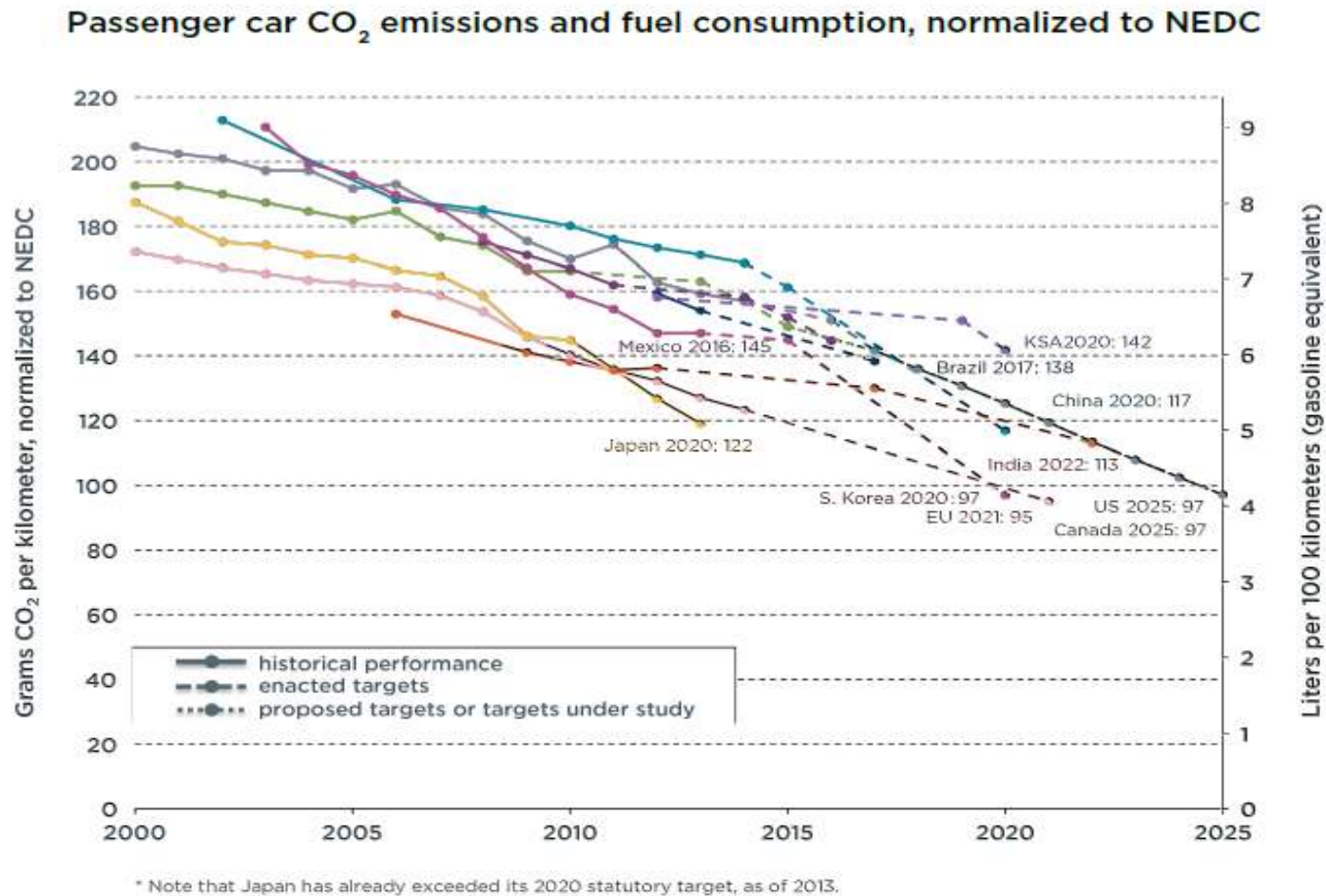
Stackpole Acquisition

Outlook

Appendix



# TRENDS IN AUTOMOTIVE – EMISSIONS



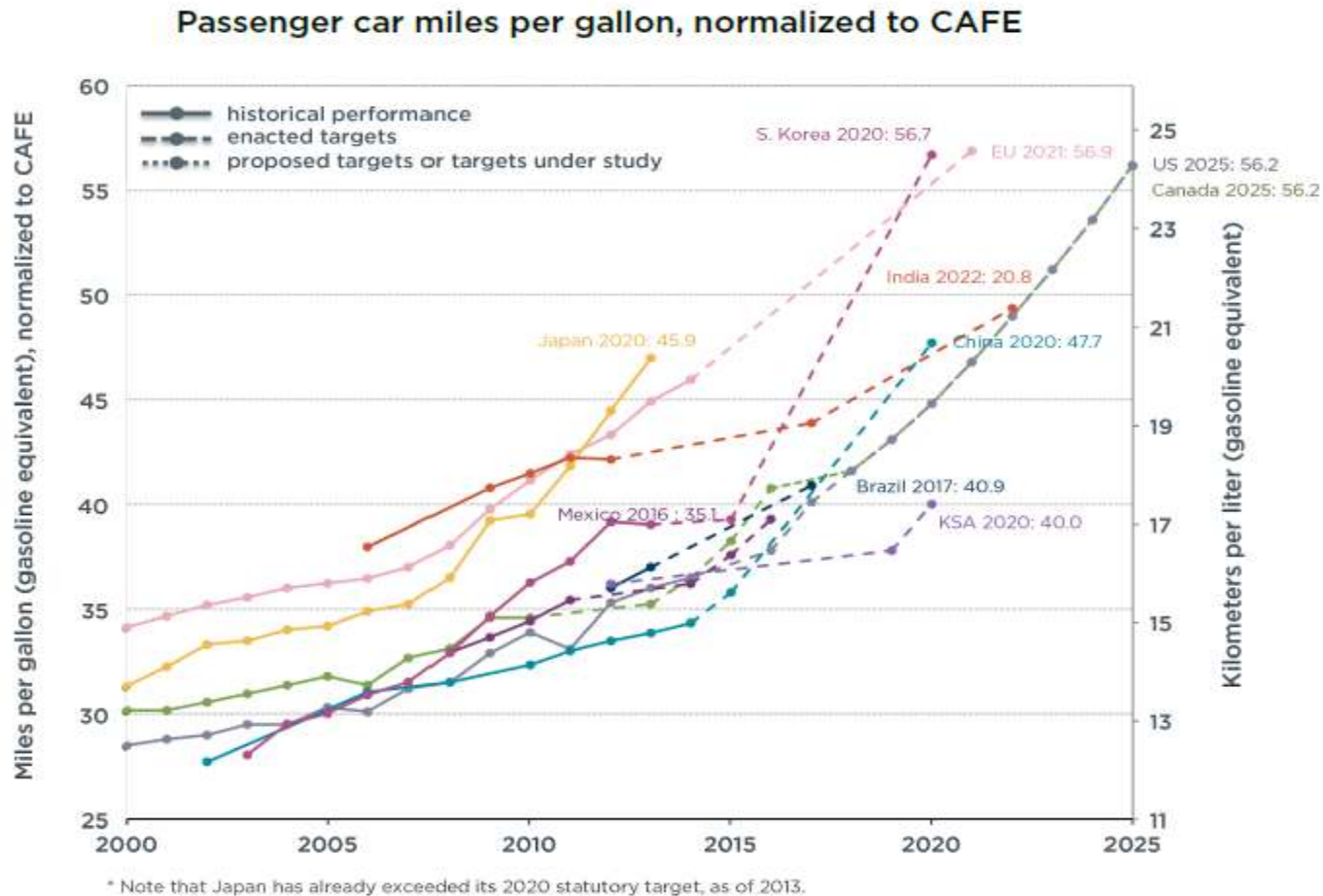
Source: International Council on Clean Transportation - Sep 2015  
<http://www.theicct.org/global-pv-standards-chart-library>

# STRATEGY AND OUTLOOK

---

- ▶ Address the key underlying trends driving long-term consumer demand, including:
  - more emissions reduction
  - more fuel efficiency
  - ever better health and safety
  - increased mobility and controllability
- ▶ Aggressively expand our global operating footprint for:
  - greater customer responsiveness
  - reduced exposure to foreign currency volatility and single country risk
- ▶ Continue to:
  - improve efficiency and eliminate waste from our operations
  - invest in building a team of people committed to making our customers successful and growing a world-class company
- ▶ Sales expected to be broadly similar to the first half, with the weak Euro and slowdown in China's economy exerting pressure on both top and bottom lines
- ▶ Stackpole acquisition
  - Full year results will include five month contribution and one-time transaction expenses
  - Expect positive, meaningful impact on Group's earnings over time

# TRENDS IN AUTOMOTIVE – FUEL ECONOMY



Source: International Council on Clean Transportation - Sep 2015  
<http://www.theicct.org/global-pv-standards-chart-library>

# GROWING PRODUCTS - APG

## Fuel Economy

- Steering System
- Engine Management



High Power Brush Motor for Electric Power Steering

Variable Geometry Turbocharger Motors

## Emission Control

- Engine Management



Valve Actuators for Automotive Coolant & Refrigerant Circuits

Dosing Solutions for Diesel Exhaust Fluid (DEF)

## Safety

- Chassis Braking
- Lighting Adjustments



Motion & Control Solutions for Lighting Applications

Highest Power Density ESC Motors

# TRENDS IN IPG

---

- ▶ Key growth areas in IPG include:
  - Robotic applications
  - Medical device applications
  - Lawn & garden applications
  - Smart meters and building automation (energy efficiency)
  - Recreation

# GROWING PRODUCTS - IPG

**Smart Meters** – MARKET LEADER – [Gas] Highest intrinsic safety & reliability against gas impurities; Extended battery life; Lowest pressure drop for grid Efficiency. [Electricity] Low power, resistance and self heating design; Fail safe



**Professional Gardening & Power Tools** – INDUSTRY LEADER – High power density & efficiency; Light weight; Low noise and vibration; Integrated motor controller; Highly reliable



**Robotic Machines** – Lowest Noise; Highest efficiency & torque; Longest operation life cycle

**Medical Equipment** – Highest dosing force & precision; Light weight; Compact size; Low power consumption



---

Group Overview

Key Financial Highlights

Operational Results

Stackpole Acquisition

Outlook

Appendix

# GLOBAL SALES & SUPPORT OFFICES & ENGINEERING CENTERS

---

- ▶ Argentina
- ▶ Austria
- ▶ Belgium
- ▶ Brazil
- ▶ China
- ▶ France
- ▶ Germany
- ▶ Hong Kong
- ▶ India
- ▶ Italy
- ▶ Israel
- ▶ Japan
- ▶ Korea
- ▶ Netherlands
- ▶ Singapore
- ▶ Switzerland
- ▶ UK
- ▶ USA





# WORLDWIDE MANUFACTURING

---

- ▶ Argentina
- ▶ Brazil
- ▶ China
- ▶ France
- ▶ Germany
- ▶ Hungary
- ▶ India
- ▶ Italy
- ▶ Israel
- ▶ Mexico
- ▶ Poland
- ▶ Serbia
- ▶ Switzerland
- ▶ UK
- ▶ USA



---

# APPENDIX: NEW PRODUCTS

# IPG – ON/OFF DIVERTER VALVE FOR BOILER

# IPG – MINIATURE MICROSWITCH FOR HOME APPLIANCES



**JOHNSON ELECTRIC**

**"Technology Leadership"**

- Low noise actuation and quiet hydraulic circuit
- Fastest changeover in both directions
- Variable speed 230VAC on/off actuation
- Zero leakage sealing

**"The Safe Choice"**

- Technology leader in diverter valves
- Market leader in combi boilers
- Global engineering and manufacturing footprint
- Installer friendly design features



**High Speed 230V On/Off Diverter Valve**

**sala**

**Noise Level**

Valve Type	Noise Level (db(A))
Traditional Valves	~15
Sala Valve	10 db(A) Lower Noise

**Change-over Time**

Direction	Valve Type	Response
Opening	Traditional Valves	~100%
	Sala Valve	25% Faster Response
Closing	Traditional Valves	~100%
	Sala Valve	50% Faster Response




**JOHNSON ELECTRIC**

**"Technology Leadership"**

- Reliable low current switching
- Robust mechanical design
- Switching capability in milliseconds
- Both AC and DC load compatible

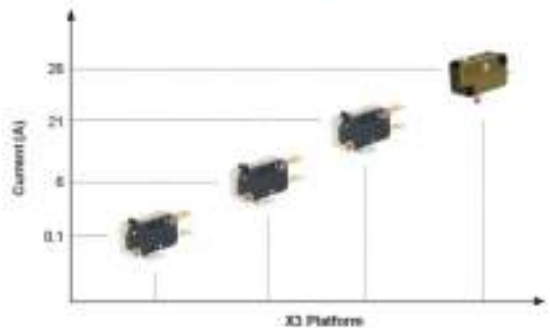
**"The Safe Choice"**

- Reliable switching after long periods of inactivity
- Exceeds international approval requirements
- Assurance of supply and reliability
- Johnson Electric Production System



**Low Current Miniature Microswitch**


**sala - X3 Platform**



The graph shows the current (A) for the X3 Platform microswitch. The y-axis ranges from 0.1 to 20. The x-axis is labeled 'X3 Platform'. Three data points are shown, each with a corresponding microswitch image: 0.1A, 1A, and 20A.

# IPG – IMPACT DRIVER POWER MOTORS

# IPG – ELECTRIC MOTOR FOR BATTERY OPERATED CHAINSAWS




**"Technology Leadership"**

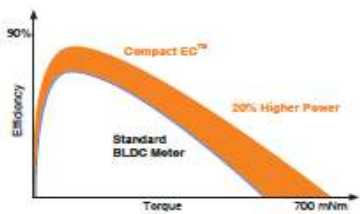
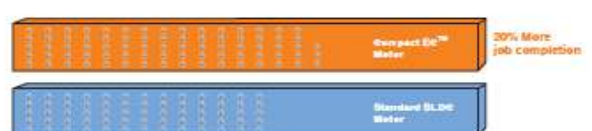

- Highest power for tougher jobs
- Highest efficiency for more work from battery
- Light weight with high power for handheld tools
- Motor platform range for professional tools

**"The Safe Choice"**

- Industry leader in power tool motor technology
- Rugged design for tough environments
- Integrated motor controller
- Custom application engineering



**Compact EC™ Motors for Impact Driver Power**






**"Technology Leadership"**


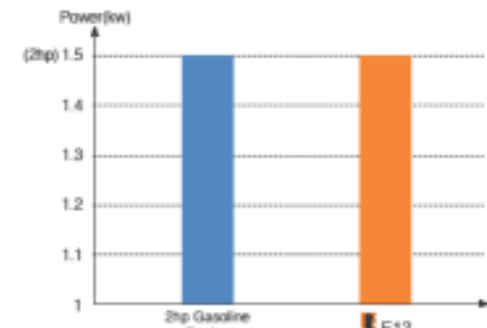
- Power equal to gasoline engines
- Highest efficiency for more work done from battery
- Low noise and low vibration
- Integrated controller + trigger switch

**"The Safe Choice"**

- Industry leader in brushless motor technology
- Industry leader in switches
- Custom software development
- Solution for tough jobs at home & farm



**Powerful Electric Motor for Battery Operated Chainsaws**

# IPG – GAS SHUT-OFF VALVES FOR SMART METERS

# IPG – DISHWASHER HEATER CIRCULATION PUMPS

**JOHNSON ELECTRIC**

**"Technology Leadership"**

- Motor design for intrinsic safety in gas flow
- Extended battery life in meter
- Highest reliability against gas impurities
- Lowest pressure drop for grid efficiency

**"The Safe Choice"**

- Highest intrinsic safety for gas meters
- ATEX zone 2, I, D compliance
- Market leader in gas shut-off valves
- Global engineering and manufacturing




**Gas Shut-off Valves for Small Meters  
Highest Intrinsic Safety**



Model	Features
GME C	Compact linear valve Intrinsic safety
GME S	Motor + Sensor Position detection
GME L	Valve + Sensor + Integrated control

**JOHNSON ELECTRIC**

**"Technology Leadership"**

- High temperature water pump
- Concealed heater for enhanced safety
- Washing and drying time reduced
- Energy efficient 3D heater design

**"The Safe Choice"**

- Concealed heater prevents melting plastic items
- Tested under extreme conditions
- Global manufacturing
- Kills 99.999% of germs




**Heater Circulation Pump for Dishwashers**



Series	Water Temperature	Germ Elimination
Standard Series	167°F (75°C)	Eliminates 90.9%
Super Series	185°F (85°C)	Eliminates 99.999%

# IPG – CIRCULATOR PUMP FOR CONDENSING BOILERS

# APG – ALL WHEEL DRIVE SOLUTIONS



**"Technology Leadership"**

- Exceeds 2015 EEl energy standard
- Highest pressure & flow rate for EEl standards
- Low noise operation
- Compact size


**"The Safe Choice"**

- EN60335-1 & 2 safety compliance
- Pigorous application based testing
- Johnson Electric Production System for reliability
- Awareness of supply globally




**Circulator Pump for Condensing Boilers**

**Best Energy Saving**



EEI	Power Consumption	Energy Savings
0.29	40 W	45% Energy Savings
0.16	20 W	

**Wide Application Range**



Maximum Heat	Pressure Increase
4.2 MW	33% Higher Pressure
5.6 MW	



**"Technology Leadership"**

- High power density
- Long life
- High efficiency
- Compact & light weight

**"The Safe Choice"**

- Industry leader in all wheel drive motors
- Reliability designed-in
- Johnson Electric Production System
- Global manufacturing footprint




**All Wheel Drive Solutions for CO<sub>2</sub> Reduction**

**Custom Engineering**

- Disconnecting Systems
- Power Transfer Units
- Front/Rear Drive Units
- Transfer Cases
- Electronic Limited Slip Differentials




**Engineering Design**

- Electro-Mechanical Actuation
- Electro-Hydraulic Actuation with Dynamic Sealing
- Fast Response
- High Efficiency
- Excellent NVH

# APG – VARIABLE GEOMETRY TURBOCHARGER MOTORS

# APG – DOSING SOLUTIONS FOR DIESEL EXHAUST FLUID

**JOHNSON ELECTRIC**

**"Technology Leadership"**

- Highest torque for fast response
- High resistance to temperature & vibration
- High power density in compact package
- Advanced EMC suppression

**"The Safe Choice"**

- Industry leader in VGT motors
- Robust design for extreme operating conditions
- Global manufacturing footprint
- Johnson Electric Production System



**Variable Geometry Turbocharger Motors**

Activation Torque

Design Platforms + Custom Engineering



DS-HC356MG      LB-HC355L.G      HB-HC375XL.G

Dual stage      Single-stage Low Boost      Single-stage High Boost

VGT Type

**JOHNSON ELECTRIC**

**"Technology Leadership"**

- Precise motion control for exact dosing
- Wide speed range for variable dosing volumes
- Designed for 12 & 24 volt operation
- Long life brushless motor & control subsystem

**"The Safe Choice"**

- Industry leader in DEF dosing solutions
- Robust design for extreme operation conditions
- Self diagnosis subsystem design
- Global engineering & manufacturing footprint



**Dosing Solutions for Diesel Exhaust Fluid (DEF)**

Platforms

Design Platforms + Custom Engineering



120V      24V

Air Assisted Dosing      Airless & Air Assisted Dosing

Dosing Systems

# SALES SUMMARY

---

## Reported Sales (9 months) April 1 – December 31

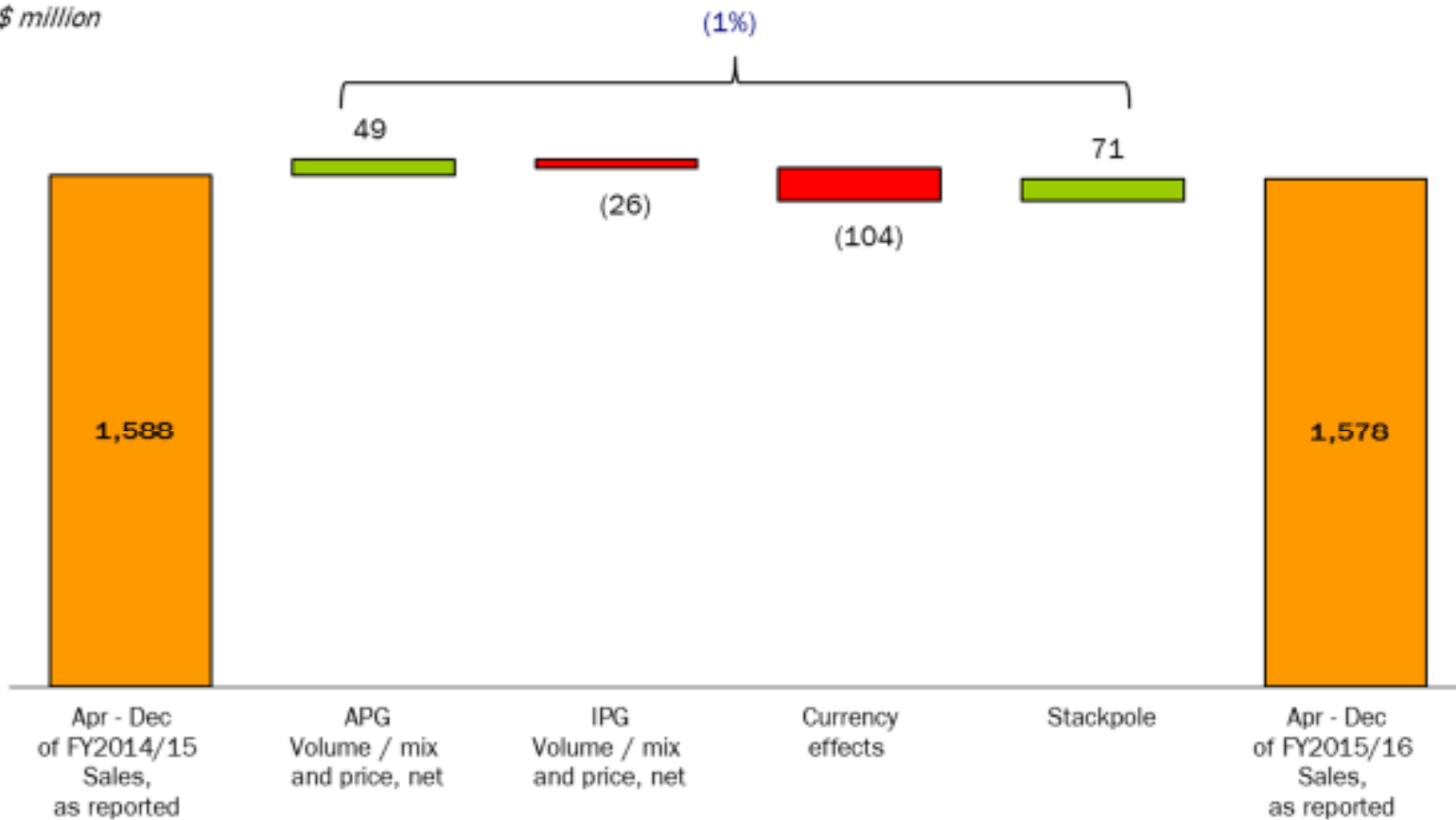
*US\$ million*

	FY2015/16	FY2014/15
APG	1,046	1,087
Stackpole ( <i>starting from 27th Oct 2015</i> )	71	-
APG with Stackpole	1,117	1,087
IPG	461	501
JE Group	1,578	1,588



# SALES CHANGES FOR 9 MONTHS YTD DEC 2015 vs. YTD DEC 2014

US\$ million



# SALES GROWTH BY REGION - APG

## Sales Growth/(Decline) % Excluding Stackpole and Currency Effect

APG		Asia	Europe	America	TOTAL
FY2015/16	Q3	5.1%	4.5%	3.0%	4.4%
	Q2	(7.6%)	7.7%	5.2%	2.3%
	Q1	13.9%	4.5%	1.6%	6.8%
FY2014/15	Q4	11.7%	1.1%	(7.4%)	2.8%
	Q3	11.8%	6.9%	(5.3%)	6.1%
	Q2	13.4%	4.8%	(11.6%)	3.9%
	Q1	12.1%	6.4%	(7.0%)	5.3%
FY2013/14	Q4	1.9%	13.6%	(1.8%)	6.7%
	Q3	20.2%	13.4%	(1.3%)	12.0%
	Q2	2.1%	9.2%	3.0%	5.6%
	Q1	(3.6%)	5.8%	3.1%	2.3%

# SALES GROWTH BY REGION - IPG

## Sales Growth/(Decline) % Excluding Stackpole and Currency Effect

IPG		Asia	Europe	America	TOTAL
FY2015/16	Q3	(17.2%)	6.0%	(5.2%)	(7.3%)
	Q2	(12.2%)	0.5%	1.4%	(4.5%)
	Q1	(20.9%)	10.7%	7.2%	(3.8%)
FY2014/15	Q4	4.1%	6.9%	13.7%	7.9%
	Q3	(10.3%)	5.9%	19.8%	2.6%
	Q2	(10.2%)	5.3%	16.2%	0.9%
	Q1	3.5%	4.0%	0.4%	2.7%
FY2013/14	Q4	2.7%	1.2%	1.3%	1.8%
	Q3	1.1%	(12.9%)	(1.6%)	(3.5%)
	Q2	(8.6%)	(10.9%)	2.7%	(6.4%)
	Q1	(11.4%)	(10.2%)	(0.7%)	(8.0%)

# DISCLAIMER

---

*This presentation contains certain forward looking statements with respect to the financial condition, results of operations and business of Johnson Electric and certain plans and objectives of the management of Johnson Electric.*

*Words such as “outlook”, “expects”, “anticipates”, “intends”, “plans”, “believes”, “estimates”, “projects”, variations of such words and similar expressions are intended to identify such forward-looking statements. Such forward looking statements involve known and unknown risk, uncertainties and other factors which may cause the actual results or performance of Johnson Electric to be materially different from any future results or performance expressed or implied by such forward looking statements. Such forward looking statements are based on numerous assumptions regarding Johnson Electric’s present and future business strategies and the political and economic environment in which Johnson Electric will operate in the future.*