



Market Data

Ticker	MWG.L AIM	Broker Views	Click Here
Sector	Cleantech	12 month Market cap (£m)	£6 - 10m
Technical Analysis	Click Here	12 Month High/Low	38.41- 4.59

Overview

Modern Water plc (MWG) is a water focused technology group with a range of products that recycle and repurpose industrial waste water more efficiently and monitor water quality for a wide range of industrial and municipal applications.

Since its IPO in 2007 it has spent more than £20 million on research & development and created a portfolio of 105 patents related to water treatment technology, with over 40 more applications pending.

The **Membrane Processes Division** is managed from the Group’s head office in Guildford, UK, and is focused on selling technology licences and engineering design services through industrial partners. Demand is gathering momentum with first sales made in India and China during 2017.

The **Monitoring Division** is based in New Castle, Delaware, USA and supplies equipment and related consumables for monitoring toxicity, trace metals and environmental contaminants in water, soil and industrial process streams.



Investment Case

Proposition: Disruptive technology, protected by established patents, which is significantly more efficient than traditional methods and is not offered by competitors. The technology has already been brought to market with technology licences signed during 2017 in both India and China.

Markets: Water-stressed regions of the world where an increasing amount of legislation is forcing industry to clean and re-use its waste water.

Investment Risk: The commercial strategy of selling licences for its proprietary technologies through industrial partners is low-risk as it is: 1) cash positive, 2) involves no plant fabrication or infrastructure construction, 3) limits significantly any exposure to project delays. Revenue should soon reach a sufficient scale for the company to break even.

Financial: Minimally geared balance sheet, a cash generative Monitoring Division and a Membrane Processes Division expected to break even in 2018 secure the near term prospects. A receivables finance facility is also in place.

Broker View: ‘Clearly at this stage there are a number of risks but the potential opportunity remains sizeable if management can successfully execute on their strategy.’



Products and Operations

Modern Water designs innovative **membrane based processes** for industrial applications that enable its customers to treat their waste water more effectively, and with much greater energy efficiency, than with conventional thermal technologies. It sells licences for these technologies and the related design work through industrial partners. The key applications for its proprietary, patented, technology are: 1) to reduce the cost of achieving Zero Liquid Discharge (ZLD), a market driven by environmental regulation. 2) as pre-treatment for MSF Desalination plants that increases water output or reduces energy consumption. 3) to improve the efficiency of the cooling process in evaporative cooling towers.

Modern Water’s **Monitoring Division** has developed some of the world’s most advanced systems for monitoring water quality and its tests are written into environmental legislation in Europe, Asia and in the Americas. Its product range includes testing for toxicity and trace metals in the lab, in the field and continuously online.

Membrane Processes

All Membrane Brine Concentrator (AMBC)

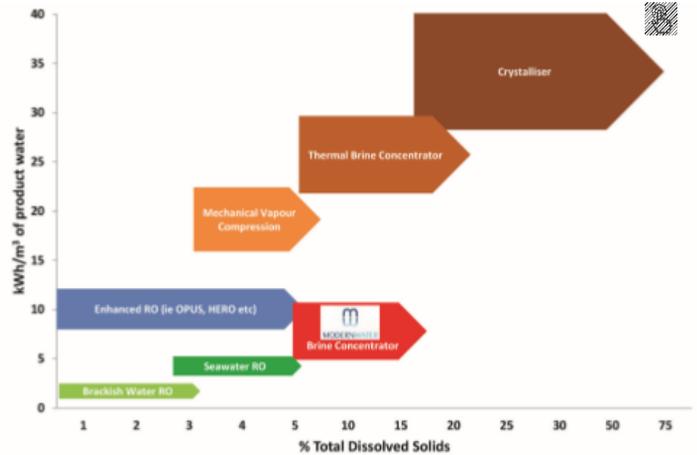
- Targeting ‘Zero Liquid Discharge’ (ZLD) requirements in industry, which is increasingly driven by environmental legislation. Significant client Capex & Opex savings

Pre-treatment for Thermal Desalination (MSF) plants

- Reduces a typical plant’s energy consumption by c. 27%
- Or can increase potable water output by 22%
- Designed to be retrofitted with c. 18 month payback

Forward Osmosis for Evaporative Cooling

- FO loop that can be retro-fitted to any industrial process which uses evaporative cooling
- Improves the existing process and can generate end customer savings of up to 30%



The AMBC (All Membrane Brine Concentrator) requires a fraction of the energy consumed by traditional thermal and mechanical compressor technologies.

Monitoring

Modern Water’s Monitoring Division was built through a series of small acquisitions which were integrated and placed under one management in 2016. The division has a proven capability in the design, development and provision of analytical instruments and technologies for monitoring contaminants in water, soil and industrial process streams. Instruments are available for the laboratory, the field or on-line, through a combination of direct sales and distributors.

- Its products and services are sold in 60 countries to laboratories, industrial companies and municipalities.
- Its key tests are written into environmental legislation in a number of countries in Europe, Asia and the Americas.
- Revenue is earned from initial equipment sales and then from recurring consumables sales to the installed base.
- Monitoring delivers an attractive 50% gross margin across its business.

Performance

- Partnership agreements are in place with Advent Envirocare and Bilfinger Deutsche Babcock
- First sales of AMBC technology licences were made in 2017, one in China and one in India
- A Forward Osmosis licence was also sold in China in 2017
- Underlying revenue growth in the Monitoring Division and maintained gross margin of 50%





Board of Directors & Executive Management



Simon Humphrey
CEO



Alan Wilson
Non-Exec Chair



Mike Townend
NED



Dr. Piers Clark
NED



Toby Schumacher
Gen Counsel & Co Sec



Peter Nicholl
Tech Director



Doug Workman
President, Monitoring



Stephen Heaps
Finance Director

Simon, the CEO, is a co-founder of Modern Water and previously held numerous water industry roles. **Alan, the Chairman**, is a Chartered Engineer with 35 years' experience in primarily the international oil and gas industry. **Mike, NED** is IP Group plc's Chief Investment Officer. **Piers, NED** joined the Board in Jan 2018 and has held senior management positions at Thames Water and Empire Water Inc. **Toby, General Counsel & Company Secretary**, joined the Board in 2014. He is a barrister who was formerly regional general counsel at Veolia. **Peter, Technical Director**, leads the multi-disciplined technical team and was instrumental in the development of Modern Water's FO based technologies. **Doug**, leads the **Monitoring Division** and has 20 years of industry experience. **Stephen, Finance Director**, is CIMA and CFA qualified and has extensive international experience.

Strategy

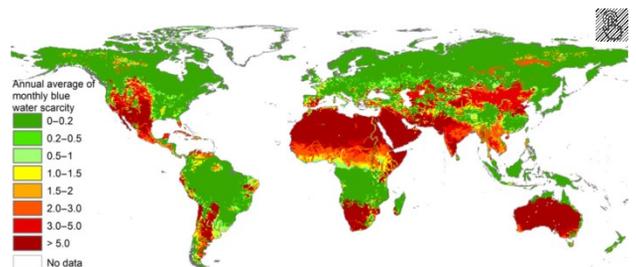
Business model: The Membrane Process Division is focused on selling technology licences and engineering design services. It does not fabricate plant or build infrastructure, which is done by the local industrial partners. This business model is cash flow positive (all fees except commissioning supervision are paid up-front) and significantly reduces Modern Water's exposure to any project delays. The division retains a small team of highly qualified engineers in Guildford and seeks to grow sales by working closely with our existing industrial partners and finding new ones. The Monitoring Division's focus is on expanding its installed base of equipment that generates high margin recurring revenue streams.

Research focus: Modern Water's research is carried out by a team of eight experienced engineers. It has invested £20m over 10 years in R&D, producing over 100 water technology patents with 40 more applications in process. The R&D is focused on products with near-term commercial prospects.

End customers: Any industry that is serious about recycling more water or worried about contamination. Specifically those in regions that face increasing regulatory pressure to safeguard water supplies and prevent pollution.

Water – an increasingly scarce resource

Over the last century water use has grown at twice the rate of the population and it is estimated that, by 2025, 1.8bn people will live in areas with significant growth in water scarcity. Two-thirds of the global population live in areas with significant growth in water scarcity. As a result, companies in the water and wastewater treatment sectors around the globe are being forced to invest in clean and re-use water in their operations. China set aside \$540bn to fight water pollution in 2012. Overall, the global water and wastewater treatment market is set to reach \$675 billion by 2025 (Source: Hexa Research Sept 2017).



"We find that two-thirds of the global population (4.0 billion people) live under conditions of severe water scarcity at least 1 month of the year."

*Science Advances/Mekonnen et al



Financials

INCOME STATEMENT	FY 2017	FY 2016
(Fig's in £'000)		
Revenue	3,518	3,629
Cost of sales	(1,744)	(1,764)
Gross profit	1,774	1,865
Administration expenses	(4,410)	(4,414)
Depreciation and amortisation	(508)	(502)
Operating loss	(3,144)	(3,051)
Net Finance income and Exceptionals	(2,086)	484
Loss on ordinary activities before tax	(5,230)	(2,567)
Tax	157	465
Loss for the year	(5,073)	(2,102)
CASH FLOW STATEMENT		
Net cash flows used in operations	(1,940)	(1,974)
Purchase of property, plant and equipment	(162)	(70)
Purchase of patents and development costs	(113)	(44)
Interest received	-	4
Net cash used in investing activities	(275)	(110)
Net cash used in financing activities	1,612	-
Net change in cash and cash equivalents	(603)	(2,084)
Cash and cash equivalents at start of year	1,072	3,161
Exchange (losses)/gains on bank balances	(3)	(5)
Cash and cash equivalents at period end	466	1,072

BALANCE SHEET	FY 2017	FY 2016
(Fig's in £'000)		
Property, plant and equipment	230	255
Intangibles	1,658	3,388
Non-current assets	1,888	3,643
Inventories	1,047	1,319
Trade and other receivables	1,043	1,559
Cash and cash equivalents	466	1,072
Current assets	2,556	3,950
Total assets	4,444	7,593
Non-current liabilities - deferred tax	(27)	(29)
Current liabilities - trade and payables	(736)	(653)
Total liabilities	(763)	(682)
Net assets	3,681	6,911
Issued ordinary share capital	239	199
Share premium and merger reserve	42,02	40,430
Foreign exchange reserve	(165)	(248)
Accumulated losses	(38,540)	(33,629)
Equity of the parent company	3,536	6,752
Non-controlling interests	145	159
Total equity	3,681	6,911

Strategy for Growth

- The Membrane division's strategy is to work closely with existing industrial partners to expand the AMBC order book
- It will seek to expand the number of industrial partners in its key markets and find partners in new markets
- It will also introduce its MSF pre-treatment and Evaporative Water Cooler solutions to relevant industrial partners
- Further development of its existing and new technologies remains key to the long-term success of Modern Water
- The Monitoring division's strategy is to build its direct sales in China whilst also managing multiple distributors
- It will Launch the new Microtox LX in H2 of 2018 to drive new sales and an upgrade program across the installed base
- Focus on driving highly profitable, and recurring, re-agent sales.
- Lastly, the Group needs to finalise, and deliver on time and budget, the £22m Gibraltar Waste Water Treatment Plant

Shareholder Data

LEADING SHAREHOLDERS	
IP Group	16.7
Janus Henderson Investors	9.5
Neil McDougall	6.6
Interactive Investor dealing	6.1
H Easterbrook	5.0
University of Surrey	4.6
Barclays Wealth	3.8
Miton Asset Management	3.5

FINANCIAL CALENDAR	
Apr 18	AGM
Dec 18	Next year end
Sept 18	Interim results

NEWSFLOW	
25 April 18	AGM Statement
29 Mar 18	New Finance Facility
29 Mar 18	Final Results
30 Jan 18	Gibraltar Progress
14 Dec 17	NED Appointment
8 Nov 17	Brine tech. First sale
13 Sep 17	Half Year Report