Stock Data

Share Price:	26.32p
Target Price	94.70p
Market Cap:	£56.63m
Shares in issue:	215.16m
52 week high/low:	70.0p/19.0p

Company Profile

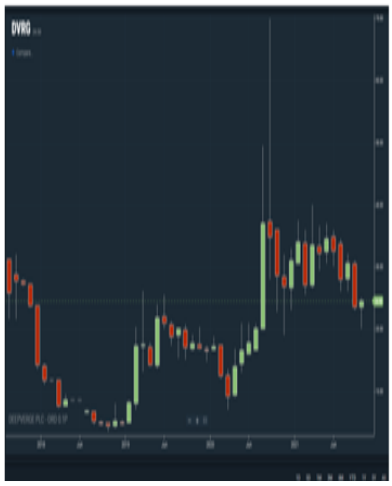
Sector:	Healthcare
Ticker:	DVRG
Exchange:	AIM

Activities

DeepVerge plc ('DeepVerge', 'DVRG', 'the Group'), (formerly Integumen plc) is an environmental and life science group of companies that develops and applies AI and IoT technology to analytical instruments for the analysis and identification of bacteria, viruses and toxins.

www.deepverge.com

Share price chart since 17 May 2017



Source: ProQuote, LSE

Past performance is not an indication of future performance.

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DeepVerge plc

DeepVerge has today announced a significant further step toward it becoming a key supplier to a national long-term COVID early-warning solution. Being part of an as yet unnamed government's COVID Infrastructural Trial, DeepVerge has today received orders amounting to £480,000 for its newly enhanced monitoring equipment. This multiplex development trial, which will facilitate automated real-time and remote wastewater monitoring and pathogen detection, is expected to last until the end of February 2022, during which time the Group will continue to collect ongoing servicing/consultancy fees. Recognising that regulatory enforcement is likely to require domestic water authorities to replace their existing manual sampling process with one capable of delivering instantaneous results combined with predictive analysis from the billions of litres being generated daily, prospective demand (plus ongoing maintenance) for networked installations of Microtox® PD equipment both from this government and other international territories could become very large indeed.

(Please note that TPI's valuation is based on financial modelling and there is no guarantee that such a valuation will ever be realised, therefore please do not base investment decisions on this valuation alone. Also please note that past performance is not a reliable indicator of future results.)

Microtox® PD wastewater project

DeepVerge's wholly-owned Modern Water is set to claim a world first in terms of its ability to operate permanent anonymised mass surveillance of wastewater, capable of real-time identification and defence against global Pandemic conditions. Its proposed multiple-unit installation comprises both upgraded Microtox® toxicity monitoring and new models of the Microtox® PD range for SARS-CoV-2 plus other pathogen monitoring. Software, data management capability, dashboards, encryption, and new AI models are fully integrated and networked within the systems.

Extensive field trials of Microtox® PD units at wastewater plant/treatment facilities in multiple jurisdictions have successfully provided instantaneous alert and detection of SARS-CoV-2. Extensive data has already transferred from installed units that are being operated by a number of unidentified clients in undisclosed European locations (under strict conditions of NDAs). Final housekeeping/validation has been undertaken using duplicate timestamped samples for independent polymerase chain reaction ('PCR') testing conducted through an independent third-party laboratory along with additional data integration compiled by collaborative partner, Strathkelvin Instruments Limited, a leading global supplier of precision respirometry and dissolved oxygen instruments for the biomedical research, wastewater treatment and product testing markets. Modern Water now expects to receive substantial uptake of its validated monitoring service from public utilities, institutions and private industry clients, who seek access to live data capable of simultaneously identifying sources of COVID-19 cases including details covering location and size of each cluster, in the coming months.

Unique capability enabled through Rinocloud

Microtox® PD 's unique capability has been enabled through Rinocloud's AI-based nano-optofluidic pathogen identification scanner, for which the Group has already filed use and design patents following confirmation from European government sponsored consultants that the technology has never previously been demonstrated. Its original

development was in response to customer demand for real-time water quality monitoring surveillance services, resulting in the engaging of Aptamer Group, a UK-based specialist that creates oligonucleotides or peptides that bind to a specific target molecule in order to develop a range of binders for highly specific detection of contaminants of concern, including SARS-CoV-2, other pathogens including contagious infections and even community detection of opioids. Having retrofitted enabled nano-optofluidic microchips into Modern Water's Microtox and MicroTrace range in order to create the Microtox® PD (pathogen detection), initial testing was carried out using the University of Aberdeen's CAT3 laboratory with the live SARS-CoV-2 supplied by Public Health England while working in conjunction with the Group's two new containment level 3 (virus) labs at its York facility.

UK government guidance: COVID-19 containment framework

The relevance and timeliness of DeepVerge's developments can clearly be recognised through a UK government guidance paper that was updated on 30 July 2021 by the Department of Health and Social Security and titled 'COVID-19 contain framework: a guide for local decision makers.' This framework document, which should be read in the context of the UK's roadmap to ease restrictions in England and its overall public health objectives for responding to the Pandemic, prepares the ground for specific initiatives including the much anticipated imposition of binding regulation on its domestic water authorities for, amongst other things, real/near real time monitoring at a regional level in order to provide an early warning system capable of identifying local hotspots of SARS-CoV-2 as well as any other future viral contagions.

Driving this point home, the paper specifically highlights the understanding that 'Wastewater testing helps us understand where the virus is circulating in the population, regardless of whether people have symptoms or have been tested, and to swiftly identify future potential spikes in infection'. It goes on to note two things, (i) the Environmental Monitoring for Health Protection ('EMHP') Programme involves monitoring wastewater for the presence of COVID-19, including Variants of Concern ('VOCs') and that it can work with the local authorities to identify areas for focused wastewater testing; and (ii) that domestic wastewater monitoring capabilities are being further optimised to establish a permanent national surveillance capability, monitoring wastewater from across England to inform understanding of the current national epidemiological picture.

Microtox® PD fulfils this requirement by carrying out sample testing every 15 minutes. So, rather than one test sample a day, 4 days a week as the current national surveillance program operates, it provides 672 tests on a 24/7 basis at each plant. It is installed at any part of the influent pipework of the plant (typically at the output of the sedimentation tanks), where it can not only instantly alert that SARS-CoV-2 or any target pathogen is present (which it likely is), but also highlight trends over a 24-hour period of increase or decrease within the catchment area. Based on these trends and known population it is possible not only to confirm the current rate of growth but also predict the next two weeks' trends.

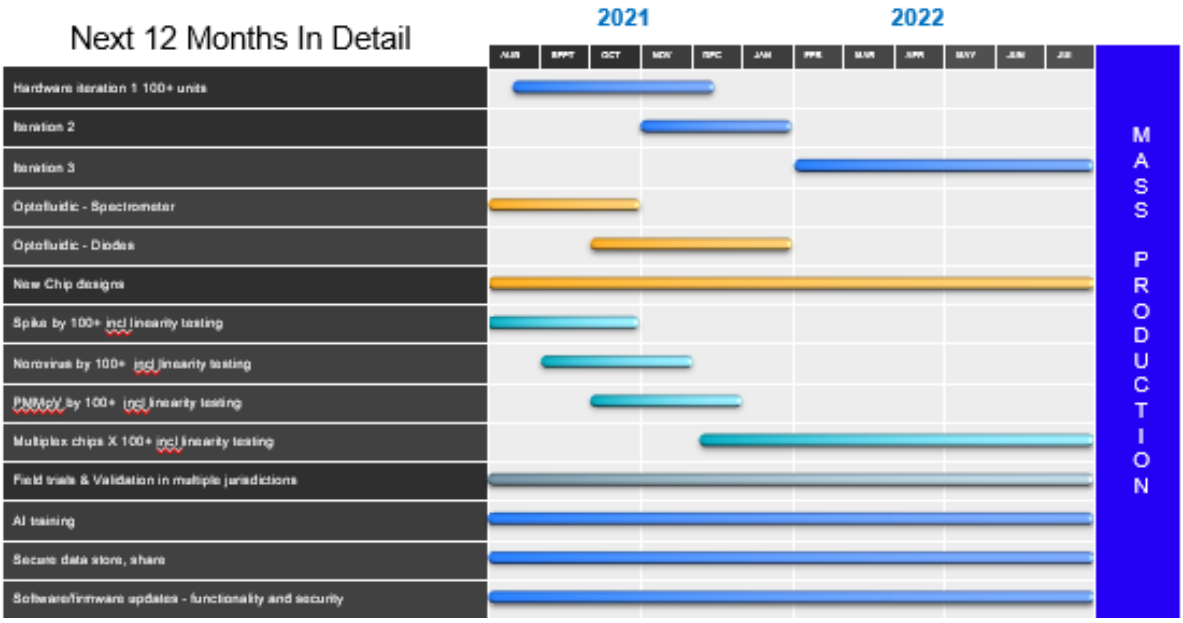
Having successfully demonstrated its ability to target single pathogens using nano-optofluidic chips, multiplex version trials are presently underway using the same configuration in order to offer a comprehensive, upgradeable full-time pathogen/virus surveillance as future needs arise. The Group's subsequent partnership with Microsaic Systems plc (AIM: MSYS) provided for an accelerated miniaturisation of micro-engineering elements that will further enhance the service offerings for multiplex testing of multiple pathogens on the same microchips. As the scale of the analytical database expands, moreover, DeepVerge's central AI system offers potential to predict the growth trajectory of future clusters of SARS-CoV-2 and/or any other dangerous pathogen.

Further development and design for a mass-producible photonic biosensor based on success of the current technology is key to this requiring, amongst other things, new grating sets to be fabricated using a higher quality and scalable process than that used to date. This procedure is required for scaling to high volume manufacturing. Developments presently underway cover four iterations including at least two further pathogen bindings (possibly Norovirus and pepper mild mottle virus ('PMMoV')), while existing bindings have also demonstrated the ability to capture/detect cancerous cells in benchtop equipment testing, making way for clinic diagnostic solutions transferring to point-of-need from hospital ER to GP clinics.

Water authorities undoubtedly recognise the urgent need for such real/near-real time detection and most certainly will already be considering the challenges and costs associated with handling such an anticipated regulatory imposition. Existing manual sampling and processing already in place is labour intensive, disrupting and potentially subject to human error, while being incapable of delivering either instantaneous results or predictive capabilities. Given the fact that in England and Wales alone, there are 7,078 sewerage treatment works, connected across the UK via a network of 347,000km pipework that collects c.11 billion litres of waste water daily, the potential market for Microtox® PD is clearly very large indeed. In Europe, where there is said to be 18,000 treatment plants which are typically of larger capacity than the UK's more fragmented base, it is much bigger still.

In July 2021, Modern Water outlined an 18-month program, over which it intends to incorporate updated multiplex chip designs, commence batch production before moving to mass manufacture and initiate a training schedule, as below:

Microtox® PD – Timelines to Mass Manufacturing



Source: DeepVerge, AGM Investor Presentation 26 July 2021

Realistically, a typical UK wastewater plant processing capacity of, say, 15 million cubic metres/day, might have a need for several Microtox® PD units to ensure output from all sedimentation tanks can be adequately monitored. Turnkey solutions for pre-production evaluation of both batch builds and subsequent mass production are presently being assessed. These comprise hardware design, volume multiplex chip production for identification of additional pathogens along with IT/software/security/training/systems support to handle data volumes and required response. Such a unique ability to provide utility companies, national agencies, regulators and governments with urgently needed, real-time/near-time mass surveillance of water/wastewater in a comprehensive fashion, while also unlocking new data points to provide improved means by which to manage water issues, suggests such equipment could become a key element of national biosecurity surveillance infrastructure going forward.

Based on an estimated purchase price of £50,000 for a single Microtox® PD unit, with initial small batch production is considered capable of returning a gross margin of c.50%, the economics stack up well. DeepVerge's 26 July 2021 AGM presentation cited initial batch build of Version 2 units is due to take place between August and December 2021 with production of 100+ units incorporating motorised optical alignment. This is due to be followed in Q1 2022, with 100+ units of a Version 3 that offers additional facilities including auto chip/flow cell feed.

Anticipating the build-up of an order backlog from Q2 2022, new units with integrated hardware and software design are expected to enter mass manufacture with production of up to 200 units/month; this implies prudent production of just c.9000 units over the next five years, although the Board considers this could rise substantially subject to demand from other jurisdictions. Operating on such a scale, TPI sees potential to lift gross margins to around 70% based on contractual 5-to-8-year monitoring agreement, with installations likely to be billed on a lease plus maintenance agreement plus set charge per test. An estimated £10,000 annual service charge for the unit is also seen providing a similar return.

Recognising the prospective global scale of this proposed roll-out, DeepVerge has already attracted a range of top tier partners capable of providing the necessary for full time support, networking and communications to ensure a comprehensive, uninterrupted service. These include Dell Technologies Inc. (NYSE: DELL), Vodafone Group plc (LSE: VOD) and the Energy Performance & Sustainability Group Ltd ('EPS Group'). Provision of such supporting real-time evidence-based, objective analysis to inform local and national decision-making in response to COVID-19 and other such viral outbreaks is expected to become a key, regulatory responsibility of utility companies going forward in the fight to provide communities with a healthy living environment.

Recognising the scale of the opportunities now being presented

Today's news follows hot on the heels of last week's announcement of £2.2m of Microtox® PD shipments to the UK, India and China in order to meet customer and partner obligations for delivery in this financial year. Revenue from today's orders and, of course, the expected mass roll-out of new installations are seen falling almost entirely into the 2022 financial year and beyond, in tandem with receipts from expanded processing capacity for its Skin Trust Club's home test kits in response to surging demand, with Microtox BT UK government tests and joint venture negotiations with China Resources also ongoing. Recognising the scale of the opportunities being presented and in expectation of a number of further significant news releases between now and the year end, however, on 3 August 2021 TPI updated its forecasts and financial model for DeepVerge, resulting in an increased price target of 94.7p for the shares (up from 84.8p that was previously).

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