

#### Stock Data

Share Price:	34.00p
Target Price:	84.80p
Market Cap:	£56.4m
Shares in issue:	165.9m

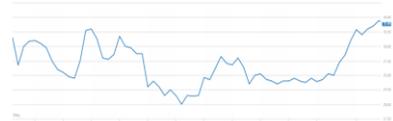
#### Company Profile

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. AI data analytics are used scientifically to prove the impact of skincare product claims on skin microbiome for most of the top 20 global cosmetic company clients and to remotely detect and identify in real-time, dangerous pathogens in wastewater treatment plants, drinking water, rivers, lakes and reservoirs. Group website: [www.Deepverge.com](http://www.Deepverge.com)

#### Share price performance from 6 Oct.2020



Source: [LSE](https://www.lse.com)

**Past performance is not an indication of future performance.**

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## Deepverge plc

Deepverge has today announced a post-period trading update along with revenue guidance for full year 2021. Sharply exceeding the £4m 2020 full year revenue target it set back on [15 June 2020](https://www.deepverge.com/news/2020/06/15) on the back of rising activity levels and new product innovation, the Group has confirmed an unaudited figure of £4.4m for the period (excluding any pre-acquisition contribution from [recently acquired Modern Water plc](https://www.deepverge.com/news/2020/06/15) ('MWG', 'the Company') and representing a rise of 332% on 2019's audited figure of £1.07m). Deepverge also confirmed that Q4 2020 was its first ever profitable (at the EBITDA level) quarter, during which time order books built strongly with the signing of 12 new contracts for Labskin Services. Significantly in this respect, the Board is now providing revenue guidance of £10m for 2021 (representing 127% annualised growth), while noting that several large projects, including two 'multi-million pound opportunities' due for decision in coming months offer potential to drive this figure substantially higher still. Recognising that the coming year will likely see the world transition from one that has struggled to contain the catastrophic effects of a global viral pandemic, to one that needs to urgently understand how to provide rapid, ongoing detection, containment and response in a post-Pandemic environment whose principal challenge must be to ensure such outbreaks cannot undermine humankind's future well-being, Deepverge's seemingly ideal range of core competences, technologies, innovative skillsets and global reach potentially positions it to enjoy years of exceptional, high margin growth. On this basis, TPI has updated its valuation for Deepverge, which now indicates a revised figure of £140.6m, suggesting a new share price target of 84.8p.

### Ideally positioned in a post-Pandemic environment

Deepverge is set to 'punch well above its weight' in 2021. Not only does its extraordinarily well-timed acquisition of Modern Water plc provide it with a complementary operation offering unique, high reputation and urgently needed real-time viral/bacterial/toxicity water detection & recycling services, but it also extends the existing EU footprint of Labskin and Rinocloud AI operations into an installed customer base across the US, China and Japan. This will support the Group's ambition to open doors across the globe, including expanding activity with its existing list of 'household name' clients that most smaller enterprises are only able to dream of (such as Unilever, L'Oréal, Estee Lauder, Walgreens Boots Alliance, L'Occitane, etc.), when cross-selling products and services to the environmental, cosmetics and life science sectors worldwide.

### Opportunity to drive 2021 well beyond current guidance

The fact that Deepverge is already able to target 2021 revenue growth well in excess of 100%, clearly reflects the extent of new demand/repeat business/client enquires that are being continually received across its range specialist of products and services. Beyond this, however, significant further potential has already been cited, including two multi-million pound opportunities along with a number of potential 'big ticket' targeted initiatives including its (i) A personalised consumer skin microbiome profile service (currently in Beta test); (ii) Microtox PD pathogen detection equipment, integrated with AI that is currently being deployed in multiple jurisdictions with data aggregated for real-time detection in wastewater; and (iii) Microtox BT real-time breath test field trials presently ongoing across the EU. All hold substantial potential to secure long-term, high margin contracts from governments/agencies/corporates seeking to new innovation in support of individual wellbeing or real-time screening services for detection & alert of COVID-19 and/or other pathogens.

### Investing to secure for international growth

Deepverge has already demonstrated an ability to leapfrog giant corporations with its development of user-friendly, real-time COVID-19 detection and alert systems, identifying

**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.**

products that hold potential to become embedded within the daily routine of global populations by governments/regulators/corporates desperate to provide the ongoing vigilance that is likely to be needed to allow their safe return to some sort of ‘normality’. Indeed, TPI in the past has suggested that the Group’s ability to adequately service the overwhelming international demand it prospectively faces could become the most significant challenge going forward. Irrespective of the success of these specific opportunities, however, demand for the Group’s core environmental and life sciences services from a broad, loyal and expanding client base that includes a number of tier-1 ‘household names’, already provides visibility sufficient for it to offer guidance for full year 2021 revenue growth well in excess of 100%. Of this, TPI estimates a breakdown of c.75% pre-acquisition organic growth for Deepverge, while Modern Water itself is also boosted by a surge in surveillance and monitoring demand from water authorities, etc. worldwide. Recognising the exceptional growth opportunity now being presented to the Group, along with the Board’s ambition to own, control and dominate its product areas across the three continents it services, Deepverge can now be expected to invest heavily with a view to sustaining triple-digit percentage growth whilst securing its longer-term market position, rather than simply chasing near term profits. To this end Deepverge presently has c.£3m cash plus debt available to facilitate such near-term steps.

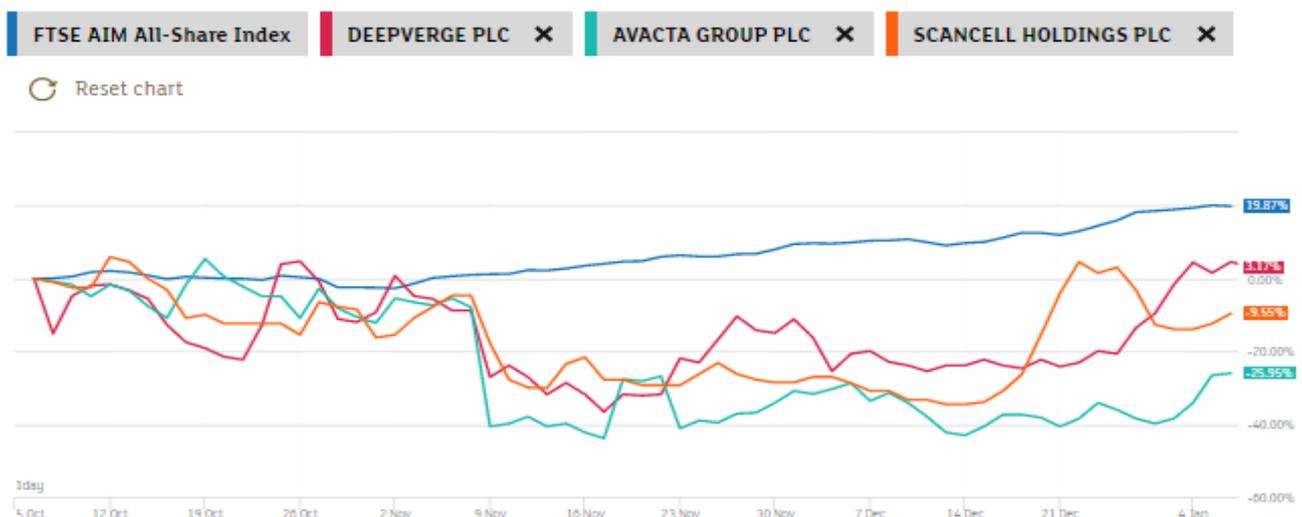
### AIM’s COVID-19 plays appear to have become oversold

Recognised as a potential high-value COVID-19 play, Deepverge found itself clumped together with numerous other healthcare and environmental sciences companies for most of 2020, recording exceptional outperformance relative to the FTSE AIM All-Share during the first nine months, only to then see this reverse sharply in the final quarter.

This coincided with [Pfizer](#), in conjunction with its German development partner [BioNTech](#), on [9 November 2020](#) declaring that its trial COVID-19 vaccine had demonstrated a remarkable 90% effectiveness and was on-track to apply for emergency-use approval from the US Food and Drug Administration (‘FDA’) before the end of 2020. This of course came to pass, followed by other advanced and possibly easier to administer vaccines from the likes of [Moderna](#) and [AstraZeneca](#)/Oxford University etc., who also received similar accelerated approvals from national health agencies followed by rapid roll-outs.

The burst of optimism that accompanied this news almost instantaneously injected the world with hope and expectation that the healthcare crisis of 2020 might rapidly be brought back under control and global populations be permitted to resume the lifestyles they enjoyed immediately prior to the outbreak. The numerous AIM-quoted companies that had presented unique initiatives for testing, detection, vaccination, monitoring and treatment of COVID-19, became subject to a sector-wide wave of profit taking as investors contemplated potential for the crisis to become part of history during 2021, to the extent that the mass of earlier stage coronavirus-related development work still being undertaken around the world could now possibly be considered superfluous and ultimately be abandoned.

#### Recent Performance\* of Selected AIM-Quoted COVID-19 Plays Compared with the FTSE AIM All-Share



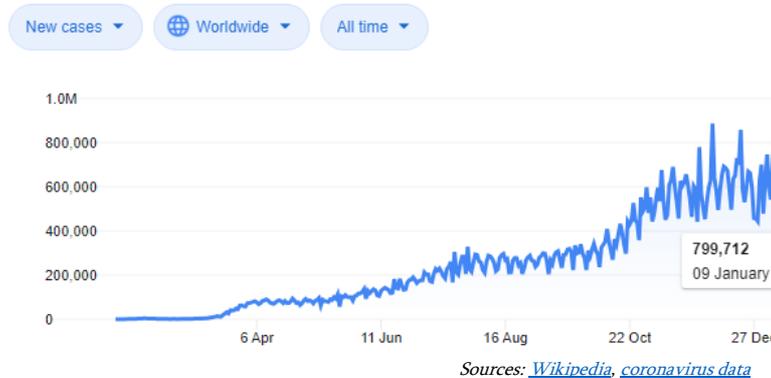
\*From 16 October 2020 and 6 December 2020

Source: [LSE](#)

As we have seen, however, recent events suggest that such an expectation is likely to be wildly misplaced. Globally, the pace of infection has continued to accelerate in tandem with the spike protein undertaking multiple mutations significantly outpacing efforts taken by health agencies, etc. to control their spread. The total number of globally confirmed cases of COVID-19 reached 90.0m, with over 1.93m deaths as of 9 January 2021, with the US, India and Brazil remaining as the top-3 most heavily affected countries. Along with as the complexities and affordability associated with the international roll-out/administration of approved vaccines, concerns remain

regarding length of time patients might be adequately protected against re-infection for this particular strain, along with concerns regarding the true effectiveness of current therapies to protect against new, rapidly developing SARS-CoV-2 variants as well as opportunity for completely new and highly contagious viruses to set off a similar global chain of events in the not-too-distant future.

### Global COVID-19 Infection Rate to 9 January 2021



Echoing such thoughts, governments along with their agencies, scientists and academics around the world, now pointedly recognise that although recent vaccine breakthroughs do represent a significant step toward tackling the current Pandemic, they are unlikely to be able to deliver or sustain the one-off solution that is sought for the treatment of such increasingly hazardous, multiple viral conditions that continue to routinely emerge across global communities. Indeed, some scientists even uphold an expectation that similar and potentially ever more complex/rigorous outbreaks may now become the principal challenge to humankind's wellbeing going forward.

To comprehend the true scale of the problem, it is important to recognise that the novel human virus Sars-COV-2 that managed to rapidly bring the world's most powerful countries to their knees is far from unique. Most such novel human viruses are known to be zoonotic, in that they cross from animals to humans; these are responsible for a long list of illnesses including HIV, Ebola, SARS, Zika and swine flu, to name just a few.

Worryingly, the frequency of their emergence now appears to be increasing. In a typical year, between two and five new zoonotic viruses might be discovered across the planet; in 2020, for example, several highly dangerous viral outbreaks occurred at the same time as COVID-19 itself was being declared a global Pandemic. These included an Ebola surge that claimed thousands of lives in the Democratic Republic of Congo ([1 June 2020](#)), as well as a surge in Lassa fever cases in Nigeria ([29 April 2020](#)).

Back in 2019, the [Organisation Mondiale de la Sante](#), ('OMS') estimated that globally about one billion cases of illness and millions of deaths occur every year from zoonoses. It went on to note that some 60% of emerging infectious diseases that are reported globally are zoonoses, with over 30 new human pathogens having been detected in the last [three decades](#) alone, 75% of which originated in animals and whose occurrence they believe to be rising sharply. The [World Health Organization](#) ('WHO') also assessed the emerging zoonotic diseases noted, for example, that 18 out of 22 countries in the Eastern Mediterranean region had witnessed explosive viral outbreaks in recent years, resulting in a high number of fatalities.

Recognising this as an international trend and the fact that globalisation has resulted in the effectively irreversible and unparalleled passage of people, animals and goods across national borders, thereby fuelling the international spread, it appears that the COVID-19 Pandemic must now be treated more as a warning for the future wellbeing of mankind, rather than something to overcome and forget. In this respect, governmental focus in a post-Pandemic environment will need to be centred on early detection, real-time alerts, rapid isolation and containment measures, health passports and, potentially, a mandatory requirement for routine, repeat national inoculation programmes. To this extent, major, brand new and long-term market opportunities to service such needs, along with the necessary supporting technologies/innovation to accelerate development of second and third generation products, are now being created.

In understanding this, it is increasingly clear that the largest ever simultaneous and focused healthcare research and development drive that was undertaken across the world during 2020 is unlikely to slow significantly in coming years. Incentives for continued innovation covering areas such as monitoring, alert, detection, control, processing and treatment of the existing and future potential viral pandemics can be expected to remain high. It seems likely, for example, that a multiple vaccine approach will ultimately be required, potentially incorporating second or third generation products designed to broaden immunity, possibly through adoption of a mix of different T-cells, together with antibodies/antigens/nuclear proteins capable of delivering stronger memory response while also attacking new strains/mutations of the coronavirus. Mandatory testing of water/wastewater could also provide real-time identification of local hotspots, while international borders are likely to demand travelers enter and exit only upon provision of a real-time 'health passport', etc.

As such, rewards available for successful development of new, better, quicker or more effective diagnostics, vaccines or other therapeutics/treatments along with supporting IT infrastructure/monitoring/big data products to service both the current situation and post-Pandemic environment could be both significant and long-term. Considerable value therefore still appears to be retained within the AIM-quoted small cap healthcare and environmental sector, which possibly has become oversold in the response to recent news flow.

While Deepverge, along with the majority of such AIM-quoted plays, have core activities and development programmes/technologies that were established well before the onset of the Pandemic, for the foreseeable future their share prices are still likely to remain heavily influenced by their response to opportunities emerging as a result, including uptake of governmental initiative and regulatory impositions. Recognising that few companies have managed to similarly preempt such a scenario with the rapid development of a series of first-on-market, highly targeted and potentially world class products, while its technologically advanced core activities in skin health, AI and water services continue to benefit from surging laboratory-based diagnostics and monitoring services demand, Deepverge stands out amongst similarly oversold peers as one of the most ideally placed to capture a substantial share of the developing opportunity.

## Deepverge - Ideally positioned to assist world's transition back to 'normality'

2020 was quite a transformational year for Deepverge (née Integumen plc). Not only did it successfully complete the exceptionally timely acquisition of AIM-quoted Modern Water Group plc, whose operations ideally complemented its existing range of laboratory-based and AI technologies while also expanding the enlarged Group's footprint into an installed client base on three different continents, but the COVID-19 Pandemic also refocussed its product and service offering toward provision of the longer-term, ongoing support necessary for global populations to return to some sort of post-Pandemic 'normality', with personal wellbeing and heightened environmental awareness to the fore.

Today's trading update confirms that Deepverge enjoyed an exceptional performance in 2020. Unaudited revenues up 332% to £4.4m (2019: £1.017m - audited) consolidated just seven or so weeks' contribution from Modern Water plc (acquisition completed on 9 November 2020, albeit including with the typically dormant three week pre-and-post Christmas period). With the Group's fourth quarter to some extent playing 'catch up' following easing of European/Asian national lockdowns, the 'bottlenecking' of certain deliveries allowed it to move into quarterly profitability (at the EBITDA level) for the first time.

Revenue guidance of £10m for 2021, representing 127% growth for the enlarged Group, is also prudently based simply on existing visibility. While anticipating the extension of Labskin's EU footprint into both the US and Asian continents as a result of MWG's acquisition, it assumes nothing for numerous 'large projects' that are presently under negotiation, including two 'multi-million pound' opportunities, that could accrue through its core Environment and Life Sciences divisions. Nor does the guidance include any contribution from new, potential 'big ticket' developments targeting wellbeing (in the form of a personalised consumer skin microbiome profile service) or COVID-19 detection & alert systems in the form of (i) Microtox PD (continuous pathogen detection) and, (ii) Microtox BT (real-time breath testing). All undergoing final stage testing and quality control, with uptake of any of these 'first to market' opportunities potentially and almost immediately adding substantially to activity levels already envisaged.

## Divisional driver for 2021

While Group operations continue to benefit from strong underlying demand expansion as utilities and corporates emerge from or adjust following the shock lockdowns of 2020, initiatives, both Covid-19 related and not, taken by Deepverge now present a number of divisional growth drivers which could substantially bolster the existing 2021 Group forecast.

TPI's own financial model for Deepverge factors in no contribution for any of these at this time, although its ability to rapidly turn such opportunities from concept to launch followed by establishment of a high margin, revenue generating operation was, for example, recently perfectly demonstrated by last August's 'soft launch' of Labskin's new ingredients impact validation service, that is designed to facilitate proof of claims in accordance with recently imposed EU product description legislation. An announcement of [11 December 2020](#) highlighted sales generated during the fourth quarter resulting from agreements with 10 new clients, including framework Master Services Agreements ('MSA') with two of the world's largest suppliers of consumer products related to skincare.

## Labskin/Rinocloud

### New EU Medical Device Regulations

New EU Medical Device regulations first detailed on [5 April 2017](#) became effective during Spring 2020. These updated decades-old legislations and pose significant new issues for products that contain active ingredient, as they now come under much stricter clinical testing requirements for proof of efficacy regarding all packaging/marketing claims. The changes are important due to reclassification requirement for existing products as well as applying to new introductions. Primarily, it is [Rule 21](#) that affects Labskin's clients in their manufacture or distribution of various OTC products, cosmetics and household goods containing active substances which come into

contact with, are used on or are absorbed through the skin or other body orifices. Many of these products, for example, come with a medical claim, such as Antiseptic, Hypoallergenic, Anti-ageing, etc. These products now face being reclassified at a higher medical device level based on their ingredients and now formally require stricter clinical testing and proof of efficacy. Further additions to the regulation now also include Annexes II & III specific to cosmetic products, detailing six common criteria that should be followed against which each claim used on a product's label needs to be substantiated, including 'free from' detailing, etc. Similarly Annex IV requires proof regarding hypoallergenic claims.

Labskin's laboratory-based 3D human skin equivalent test platform is able to undertake and satisfy such regulatory requirements through data-heavy scientific demonstration of the impact of product ingredient against claims, without the need to subject human volunteers to such hazards. It rapidly and repeatedly validates across areas including probiotics and prebiotics on the skin microbiome, clones the human skin using six microbial strains and delivers 'real world' results that mirror the impact of treatments and therapeutics on real human skin. The outcome is to ensure that all marketing descriptions/communications are current, with transparent interpretation that is legally binding across all the member states, as opposed to being left open to various, different, sometimes contradictory, opinions that have sufficed in the past.

Customers using the service are able to ensure a consistently high, demonstrable level of health and safety protection for their products' users, while securing the convenience and strong economics Labskin services offer, including the erection of competitive barriers against low-cost/quality producers/importer in the process. Following its 'soft launch' in August 2020, Deepverge announced on [11 December 2020](#) that this new service had already netted £400,000 in completed orders during Q4 2020 with agreements from 10 new clients including framework MSAs with two of the world's largest suppliers of consumer products related to skincare. Management expects to meet growing demand this year both from repeat business and also resulting from conferences and marketing exercises across all regions.

### COVID-19 testing

On [27 November 2020](#), Labskin announced it had successfully populated and maintained the SARS-CoV-2 virus on skin models, creating a breakthrough environment that enables testing of household chemicals, anti-viral products, skin and health care products, and their effect on the human skin microbiome as well as their efficacy for killing the virus over long periods of time.

To date, society has depended on anecdotal or theoretical evidence to determine how infectious skin can be, as humans touch surfaces and each other. Labskin's partnership with the University of Aberdeen provided factual data and empirical evidence of surface to skin and skin-to-skin transferability sufficient to quantify such risks. The body of research, protocols and methods created while working with the real virus, offers confirmation and sets standards that allow for testing of clients' anti-viral household, skin and health care products, thereby verifying producer/distributor regarding claims to eliminate or otherwise address the risk of transmission.

Labskin is a unique full-thickness human skin model that has been specifically developed for the study of the human skin microflora and the microbiota/host interactions. Its dryness and barrier function create an ideal environment where individual or multiple microbial species can thrive to form a stable community. It can be colonised with microorganisms belonging to the three domains of life and these can be infected with bacterial, fungal and viral pathogens. The features of the models make it ideal to study the transferability of viral particles from any sort of material to skin, to assess their ability to remain infective while on the surface and to quantify the efficacy of, for example, soap washing and hand sanitisers, etc., using a realistic *in vitro* model. As such, Labskin can be considered a proxy skin environment for research and testing beyond its own laboratories, with university partners in Liverpool, UK, Genoa, Italy and Shanghai, China. This extended scientific community can monitor how long COVID-19 remains viable on the skin and provide empirical proof of viral load over the length of time it survives and demonstrate how vulnerable a human can be during daily interactions and activities. When it becomes commercially available, this high value service will be able to justify packing claims for products claiming ability to stop or hinder the transfer of COVID-19 in accordance with EU Medical Device Regulations.

### Virtual Clinical Trials

Another area that is expected to meet a high level of interest this year, is Labskin's virtual clinical research platform that was officially launched on [24 July 2020](#).

Supported by Rinocloud's software/AI division, laboratory-controlled clinical trials of Labskin's advanced skin models platform permits testing to be undertaken ethically and efficiently, with all necessary protocols being strictly adhered to and distantly controlled. All data is collected and stored according to strict General Data Protection Regulation ('GDPR') guidelines. Critically, remote collection of human volunteer's skin microbiome can be carried out through swabbing under supervision in their own home in order to facilitate trials of different models (pigmented, acne, atopic dermatitis, psoriasis) and human microbiomes.

Presently, Rinocloud is building a data bank from volunteers in order to optimise accuracy and demonstrate reliability/repeatability of this virtual process. By eliminating the exceptionally costly and time-consuming process of recruiting, classifying and filtering human volunteers for trial-and-error testing, while also increasing access to immune-suppressed, aged or infirm human volunteers without placing them at risk, the net outcome for customers is to reduce cost and speed period to market. By building-out a comprehensive

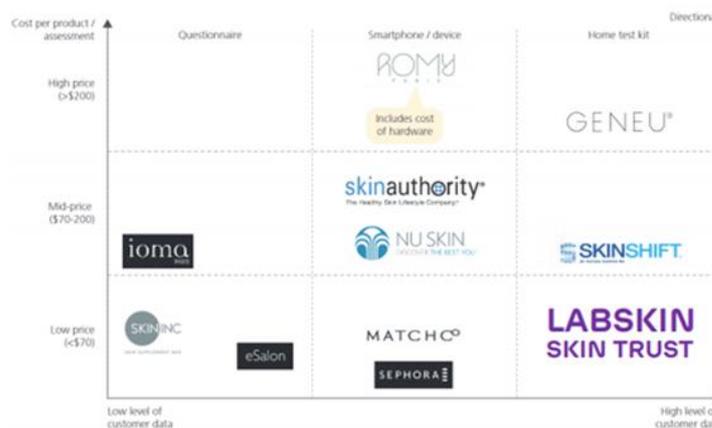
data repository, Labskin will also be able to add additional value to trial data by utilising Rinocloud's AI/Big Data modelling tools to comprehensively analyse skin response/sensitivity/condition etc. resulting from variation in frequency of application/potency etc. of the active ingredient.

### Labskin Skin Trust – ‘Next Generation’ personalised beauty

By 2025, it has been estimated that the global skin care market will be [valued at US\\$189.3 billion](#). Within this giant but highly competitive marketplace, major wellbeing, cosmetic and personal care companies are looking to personalised beauty as a way to enrich their existing portfolios, develop new growth channels and mitigate the risk of being disrupted by innovative new entrants. Major players such as [Beiersdorf](#), for example, have already stated they are seeking new technologies, concepts and business models as a means for exploring ways to move towards increased personalisation in skin care.

Based on the same self-administered skin swabs that are being utilised for remote clinical trial collection of skin microbiome, Labskin is proposing to take individual repeat DNA tests (possibly quarterly), which it will then combine with other lifestyle factors, including personal cycle, seasonal aspects, etc. through which it is able to generate regularly-updated reports the consumer can utilise in order to create a customised skincare regimen unique to them. Analysis of such skin attributes will then provide information sufficient to develop and administer multiple product combinations offering potential to sustain an improved skin condition. Labskin’s ‘next generation’ personalised beauty product has been positioned as a scientifically-based but relatively low-cost, ongoing assessment. Expected to be sold on a direct subscription-based model, it will also be made available to specialist clinics and potentially enfranchised to major personal care and cosmetics brand(s) on a ‘white label’ basis. This high-margin, high throughput but largely automated product introduces a level of innovation new to the sector with potential to generate predictable cash flow for the Group.

### Next-Generation Personalised Beauty



Source: Deepverge plc Investor Presentation, [December 2020](#)

## Modern Water

### Background to the acquisition

Deepverge completed its acquisition of AIM-quoted Modern Water plc on [9 November 2020](#). As a high reputation water monitoring company with 30 years of brand recognition, MWG had seen its revenues peak at £4.2m in 2019 but, encumbered by a relatively high fixed cost base/service level, had remained consistently loss-making. As a result, the Company’s accumulated losses stood at approximately £42.8 million as of 31 December 2019. In an effort to revitalise its operations, Deepverge’s CEO, Mr Gerard Brandon, joined MWG’s Board on [4 March 2020](#) and shortly after concluded partnership opportunities with Deepverge, initially in terms of a framework reagents supply agreement to identify contamination in wastewater, which was followed by a multi-party collaboration for the incorporation of next generation sensors into its Microtox monitoring systems for real-time identification of localised COVID-19 hotspots.

Deepverge’s Board recognised, however, the extent of the expanding business opportunity that was becoming available through MWG’s systems-based technological solutions that are capable of identifying some 2700 toxins/pathogens/viruses (including COVID-19). Having some 3000 units already installed across a wide range of international of water utilities, public health authorities and consumers in over 60 countries, demand for real-time contamination alerts and recycling services became significantly heightened late in Q1 2020 due to the global Pandemic. Deepverge also understood that there was a high level of commonality between the two companies, in terms of product offerings and target customers, while also extending the Group’s marketing footprint into three continents. Based on the closing price of 30.5 pence per Deepverge Share on the pre-announcement date, Deepverge went on to conclude an all-share offer that valued

the entire issued share capital of Modern Water at approximately £16.0 million, representing at the time of acquisition c.34% of the enlarged Group equity.

### The Pandemic has changed everything

Before the onset of the COVID-19 Pandemic, the global water testing and analysis market addressed by MWG was estimated to be worth c.[US\\$4.5bn in 2024](#), based on a CAGR of 5.2%. Most certainly already a large market supported by major investment infrastructural programmes that have been put in place in previous years in order to avoid prospective water crises, including:

- India is forecast to spend \$4bn by 2020, just on achieving Zero Liquid Discharge (ZLD)
- China set aside \$540bn to fight pollution in 2012, over half focussed on water pollution
- China Ecology Directive on water testing – February 2020
- Middle East is c.50% of the Global desalination market, thought to be worth \$12.6bn in 2016

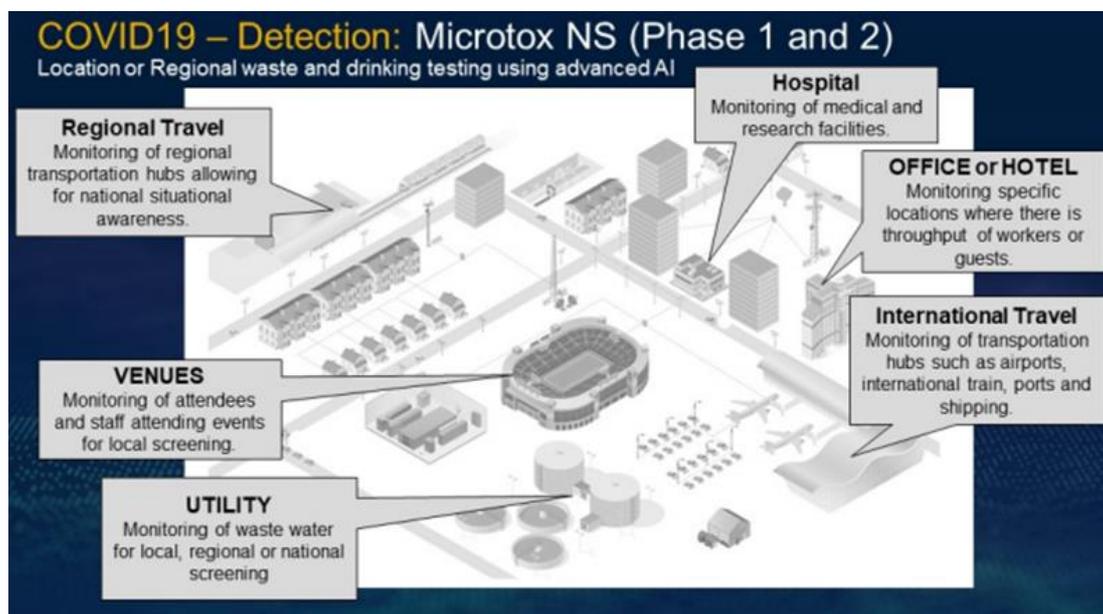
Source: Modern Water plc, [Mello 2018](#), Deepverge plc Investor Presentation, [December 2020](#)

As early as March 2020, however, MWG's Board noted that COVID-19 Pandemic has focussed water authorities all over the world on the vulnerability of waterways to contamination which had led to it experiencing a surge in enquiries for increased surveillance and monitoring. It went on to report unprecedented demand for its monitoring products particularly from customers on the frontline in China, Italy, Spain and France. The lockdown, of course, went on to hinder fulfilment of much of this opportunity during the second and third quarters, although activity did recover somewhat in the final months of the year. Bearing this in mind, along with the urgency regional Chinese government bodies and their utilities are demanding installation of effective real-time monitoring (including COVID-19 detection), systems that MWG already has in place across five provinces present opportunity for significant demand:

- Shanghai: Completing installation and commissioning of Microtox CTM online biotoxicity monitoring system for the Shanghai Hydrological Automatic Monitoring station.
- Jiangsu Province: Environmental monitoring station, completed commissioning, training and maintenance management on the Microtox LX biological toxicity analyser system and the Microtox CTM online biotoxicity monitoring system installed.
- Haitan Province: Sino-French Water has the Microtox FX portable biological toxicity analyser system and maintenance management training is ongoing for staff.
- Guangzhou: Partner, Boang Environment is installing and supporting our PDV heavy metal analyser solution in the Guangxi environmental monitoring facility.
- Sichuan Province: First phase of heavy metal analyser solution is being installed for the Environmental Emergency Monitoring Department.
- China National Mobile Poisoning Monitoring Center: Commissioned PDV 6000 Ultra heavy metal analyser solution.

Source: Deepverge plc Investor Presentation, [December 2020](#)

### Modern Water's Microtox NS for COVID-19 Detection



Source: Deepverge plc Investor Presentation, [December 2020](#)

Away from monitoring, Modern Water also has a strong sales pipeline for its other operations in membrane and reverse osmosis technologies centred on areas of water scarcity and populated off-grid locations, etc. These include :

- [Sunup Co. \(China\)](#): Pilot plant, trialled on multiply sites with commercial salt production site under construction
- [Advent International \(India\)](#): Purchased a pilot plant, trialled on multiple sites, with two full commercial scale sites commissioned
- [Ion Exchange India Ltd](#): Currently building a pilot plant for own site, with trial expected to result in full scale plant while also continuing to work on several large projects
- [WEC Projects](#): Discussion regarding several opportunities in pipeline

### Microtox PD

On [16 November 2020](#), the Group started deploying near-source wastewater contamination and pathogen detection test equipment, branded 'Microtox PD', into water treatment plants in Ireland, with the first shipments to China and the United States following before end-2020. The Group's collaborations with [Avacta Group](#) (to secure access to its highly sensitive [Affimer](#) reagents) and [Aptamer Group](#) (providing nano-scale coatings) have resulted in the development of this unique, real-time SARS-CoV-2 identification and alert system for the detection of the coronavirus. Retrofitted with Rinocloud's AI-based optofluidic pathogen identification scanners, units were also shipped to the University of Aberdeen [CAT3 laboratory](#), adding to the ongoing trials with the live SARS-CoV-2 virus, supplied by Public Health England.

A third and final phase in the form of field trials ahead of commercialisation, is now underway at multiple sites in different geographical locations. In collaboration with [EcoWaterOS consortia](#) partners in Northern England, aggregated anonymised data will provide datasets for AI model simulations from human volunteers who will undergo COVID-19 testing with a combination of Microtox BT (Deepverge's personalised rapid COVID-19 optofluidic breath test with interactive digital health pass platform), a lateral flow antigen test and a rt-PCR test.

Sufficient datasets from these field tests are anticipated to be available for analysis and processing early in 2021. These are expected to enable simultaneous identification of the source of COVID-19 cases and any associated clusters, indicating the size of each in real-time. With this growing volume of data, Deepverge's Rinocloud data management and artificial intelligence division will then be able offer potential to predict the trajectory of growth of such future coronavirus (as well as any other dangerous pathogen) clusters.

### Microtox BT

Also on [16 November 2020](#), Deepverge agreed to license a patented breathalyser from [PulMoBioMed Limited](#), a spin-out technology company of Northumbria University, to capture SARS-CoV-2 particles in breath condensate for its optofluidic breath test, Microtox BT. This is expected to speed roll out of the product once field trials have satisfactorily completed and regulatory authorities ([MHRA](#), [FDA](#), etc) have approved it for use as a [medical device](#).

### Target market – The cruise line industry

The two innovative products detailed above, targeting real-time identification and control of coronavirus hotspots, are expected to find significant opportunity in 2021. Existing and post-Pandemic environments will likely to have an urgent and ongoing need for such high integrity systems to provide reassurance to global populations and their governments as they attempt to return to a normal lifestyle. Prospectively focussed on high volume footfall venues and facilities, like conference centres, hotels, stadiums, air travel etc. Deepverge modelled, for example, the cruise line industry as a potential international customer seeking to offer its travellers a safe holiday environment, while potentially also providing a solution for insurance companies that are required to underwrite such excursions.

Industry analysis suggests the [global cruise line industry](#) provides services to c.32m passengers annually with 1.1m full time employees. Based on onboard utilisation of both Microtox PD and Microtox BT and assuming one daily breath test for each individual (priced at £4 per test) plus five installed Microtox PD units installed on each ship for 24/7 monitoring, Deepverge calculates a prospective annual market opportunity equivalent to [£2.6 billion](#).

## Valuation

Given the expectation that Deepverge will fulfil the growth strategy that has been outlined in this report, TPI has extrapolated an estimated free cash flow projection beyond that implied by the Group's own revenue projection of £10m for the current year to December 2021. For the year to end-2022E, TPI has estimated 65% revenue growth, followed by 33% and 23% for the two periods thereafter producing free cash flows as detailed in the table below. Beyond this, TPI has annually tapered its projected cash flow growth rate on a prudent basis, starting at 35% for period to end-2025E through the four following periods down to 10% in 2029E, whereafter a terminal growth rate ("TGR") of 3.0% has been prudently adopted in order to generate an indicative discounted cash flow ("DCF") valuation for the business. Within this, TPI has assumed use of the Group's remaining £1.5m loan facility during the current period.

The model indicates Deepverge's gross margins move to a steady state of around 60% by 2024E, by which time an operating margin of c.21% is being achieved through sales primarily of laboratory tech, monitoring and AI services. This projection is based on organic expansion only and takes no account of the numerous sales/product 'big ticket' initiatives outlined in the body of this report or further opportunities created through its Board's ambitious buy-and-build acquisition strategy. Modest additional scale benefits have been factored into the cost assumptions along with a rising corporation tax obligation. TPI's valuation\* is now based solely on its DCF modelling, having abandoned its previously applied peer group comparison due to the unique nature and mix of Deepverge's businesses and its innovative approach.

### Key assumptions of DCF assessment

Given that Deepverge's business model and market opportunity become significantly more established over the past year, TPI is now applying what it considers to be a conservative 7% discount rate to its DCF calculations to 2029E, beyond which it has assumed a prudent terminal growth rate of 3.0%. Such caution identifies appreciable risk that its business plan might not secure anticipated market traction over the coming years should major sector players move rapidly to emulate the Group's business plan, potentially even loss-leading to capture customers with a broader ambition of securing longer-term data analysis opportunities. Recognising however that the Group's business opportunity now comes with heightening visibility with contracted orders/enquiries in place, while it is also already providing high potential specialist services to the prospectively large market opportunities created due to the COVID-19 Pandemic, it is not considered appropriate to apply a further 'probability of success' discount factor to the gross DCF calculation.

The modelling provides a DCF fair value for the company of c.£140.6 million. This valuation does account for the Group's present balance sheet strength (including access to loan facilities) and assumes its operations become significantly cash generative from 2022E onward, beyond which it should have sufficient cash resource/facility to fulfil the Board's wider ambitions through its proposed 'buy & build' acquisition programme. Should the Board consider it justified to fund substantial near-term operational expansion, however, in order to take advantage of the enlarged international footprint gained through its MWG acquisition while also to seeking to establish a position servicing the new global market opportunity that is likely to be created for servicing the post-Pandemic environment, additional funding (either through an enlarged debt facility or equity issuance) is likely to be required.

### Deepverge plc – DCF Summary Valuation Table\*

Year to December (£'000)	2019A*	2020F	2021F	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Revenue	823	4400	10,000	16,500	22,000	27,000					
EBITDA (post-exceptionals)	-1,055	-1,000	350	3,700	5,500	7,500					
Operating profit (loss)	-2,371	-2,250	-900	2,500	4,100	5,750					
Total comprehensive income	-2,273	-2,330	-1,350	1,850	3,550	4,950					
Group net cash (debt)	769	30	-1,420	780	3,680	7,480					
<b>Free cash flow</b>	<b>1167</b>	<b>537</b>	<b>250</b>	<b>2400</b>	<b>2100</b>	<b>3500</b>	<b>4725</b>	<b>5906</b>	<b>7088</b>	<b>8151</b>	<b>8966</b>
<b>Discounted free cash flow</b> <i>Discount Rate= 7.0%</i> <i>TGR=3.0%</i>	<b>1167</b>	<b>502</b>	<b>218</b>	<b>1959</b>	<b>1602</b>	<b>2495</b>	<b>3148</b>	<b>3678</b>	<b>4125</b>	<b>4433</b>	<b>4558</b>
Cumulative DCF	26,720										
PV of residual growth	114,160										
Starting net cash (debt)**	-230										
<b>Value of equity</b>	<b>£140,650</b>										

\*2019 Revenue excluding £194,000 Rinocloud Ltd 2019 pre-acquisition revenue, \*\*After finance leases  
A=Actual, F= Group forecast, E=TPI estimate

Source: Deepverge, TPI estimates

**\*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.**

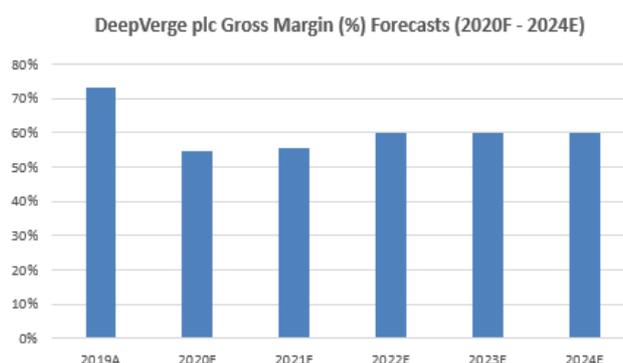
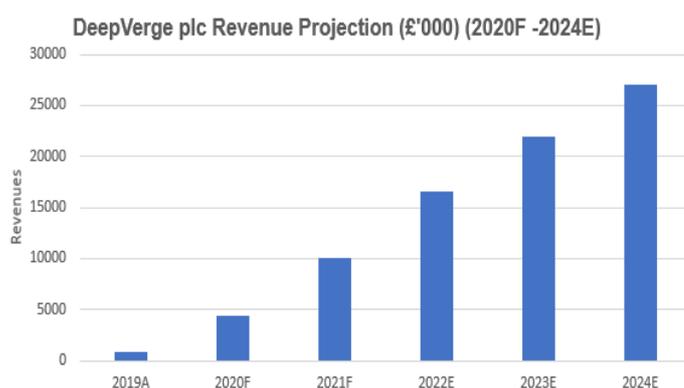
## Deepverge plc - Projected Income Statement (2019A – 2024E)

Income Statement** (Year-end Dec) £'000	2019A	2020F	2021F	2022E	2023E	2024E
<b>Revenue</b>	<b>823</b>	<b>4,400</b>	<b>10,000</b>	<b>16,500</b>	<b>22,000</b>	<b>27,000</b>
Cost of sales	-221	-2,000	-4,450	-6,600	-8,800	-10,800
<b>Gross profit (loss)</b>	<b>602</b>	<b>2,400</b>	<b>5,550</b>	<b>9,900</b>	<b>13,200</b>	<b>16,200</b>
Admin	-1,657	-3,400	-5,200	-6,200	-7,700	-8,700
Exceptional items	-532	-600	-250	-100	-100	-100
<b>Operating profit (loss)</b>	<b>-2,371</b>	<b>-2,250</b>	<b>-900</b>	<b>2,500</b>	<b>4,100</b>	<b>5,750</b>
Finance income	10	0	-150	-150	0	0
Finance (expense)	-36	-180	-300	-300	-150	0
<b>Profit (loss) before tax</b>	<b>-2,397</b>	<b>-2,430</b>	<b>-1,350</b>	<b>2,050</b>	<b>3,950</b>	<b>5,750</b>
Taxation rebate (payment)	126	100	0	-200	-400	-800
Loss from discontinued operations	6	0	0	0	0	0
<b>Profit (loss) after tax</b>	<b>-2,265</b>	<b>-2,330</b>	<b>-1,350</b>	<b>1,850</b>	<b>3,550</b>	<b>4,950</b>
Foreign exchange arising	-8	0	0	0	0	0
<b>Total comprehensive income (loss)</b>	<b>-2,273</b>	<b>-2,330</b>	<b>-1,350</b>	<b>1,850</b>	<b>3,550</b>	<b>4,950</b>
<b>Basic EPS (p)</b>	<b>-0.28</b>	<b>-1.40</b>	<b>-0.77</b>	<b>0.95</b>	<b>1.69</b>	<b>2.20</b>
Average no of shares	807,395,734*	165,877,296	175,000,000	195,000,000	210,000,000	225,000,000

\* pre share consolidation

\*\* Modern Water plc consolidated from 9 November 2020

Source: Deepverge, TPI estimates



Source: Deepverge, TPI estimates

**Deepverge plc - Projected Cash Flow Statement (2019A – 2024E)**

Cash Flow** (Year-end Dec) £'000	2019A	2020F	2021F	2022E	2023E	2024E
<b>Profit after tax</b>	<b>-2,265</b>	<b>-2,330</b>	<b>-1,350</b>	<b>1,850</b>	<b>3,550</b>	<b>4,950</b>
Depreciation	101	150	450	500	600	900
Amortisation	442	500	550	600	700	750
Change in inventories	37	100	200	200	200	200
Change in trade receivables	-100	-200	-500	-800	-1,100	-2,000
Change in creditors	200	200	200	250	300	350
Taxation	-126	-100	0	200	400	800
<b>Cash generated from operations</b>	<b>-2,275</b>	<b>-1,400</b>	<b>-50</b>	<b>3,200</b>	<b>4,950</b>	<b>6,100</b>
Taxation	126	100	0	-200	-400	-800
Interest paid	-36	180	300	300	-150	0
<b>Net cash used in operations</b>	<b>-2,185</b>	<b>-1,120</b>	<b>250</b>	<b>3,300</b>	<b>4,400</b>	<b>5,300</b>
Purchase of PPE	-138	-700	-1,200	-900	-1,300	-1,300
Purchases of intangible assets	-213	-243	-500	-300	-300	-300
<b>Net cash used in investing activities</b>	<b>-329</b>	<b>-943</b>	<b>-1,700</b>	<b>-1,200</b>	<b>-1,600</b>	<b>-1,600</b>
<b>Proceeds from issuance of shares</b>	<b>3,961</b>	<b>1,100</b>	<b>200</b>	<b>300</b>	<b>300</b>	<b>300</b>
<b>Net cash from financing activities</b>	<b>3,681</b>	<b>2,600</b>	<b>1,700</b>	<b>300</b>	<b>-700</b>	<b>-200</b>
<b>Net change in cash</b>	<b>1,167</b>	<b>537</b>	<b>250</b>	<b>2,400</b>	<b>2,100</b>	<b>3,500</b>
Cash at beginning of the year	26	1,193	1,730	1,980	4,380	6,480
<b>Cash at the end of the year</b>	<b>1,193</b>	<b>1,730</b>	<b>1,980</b>	<b>4,380</b>	<b>6,480</b>	<b>9,980</b>

\*\* Modern Water plc consolidated from 9 November 2020

Source: Deepverge, TPI estimates



Source: Deepverge, TPI estimates

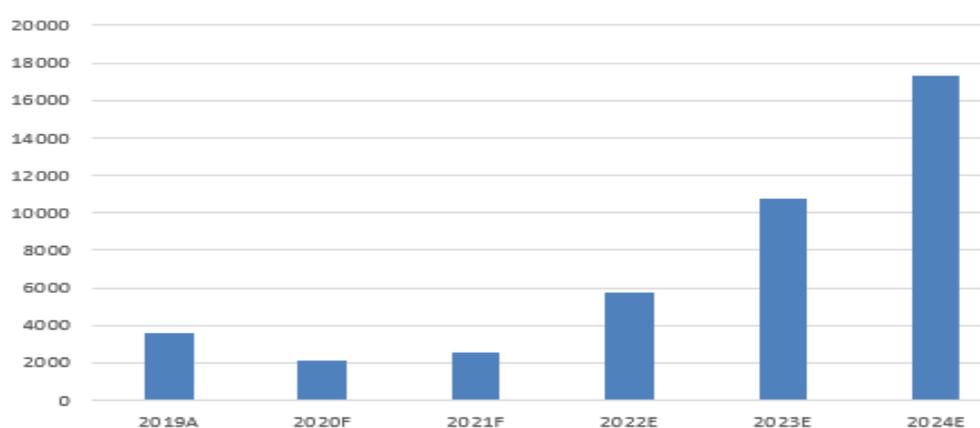
**Deepverge plc - Projected Balance Sheet (2019A – 2024E)**

Balance Sheet** (Year-end Dec) £'000	2019A	2020F	2021F	2022E	2023E	2024E
Property, plant and equipment	645	936	2,150	2618	3390	4015
Intangible assets	2,460	1,250	1,800	2350	3400	4450
Other investments	780	780	780	780	780	780
<b>Total non-current assets</b>	<b>3,885</b>	<b>2,966</b>	<b>4,730</b>	<b>5,748</b>	<b>7,570</b>	<b>9,245</b>
Inventories	130	230	430	630	830	1,030
Trade receivables	484	684	984	1,484	2,084	3,484
Cash and cash equivalents	1,219	1,730	1,980	4,380	6,480	9,980
<b>Total current assets</b>	<b>1,833</b>	<b>2,644</b>	<b>3,394</b>	<b>6,494</b>	<b>9,394</b>	<b>14,494</b>
<b>Total assets</b>	<b>5,718</b>	<b>5,610</b>	<b>8,124</b>	<b>12,242</b>	<b>16,964</b>	<b>23,739</b>
Trade payables	900	1,350	1,800	2500	3000	3500
Deferred tax liabilities	100	200	200	200	200	200
Interest bearing borrowings	200	200	400	600	800	1000
<b>Total current liabilities</b>	<b>1,200</b>	<b>1,750</b>	<b>2,400</b>	<b>3,300</b>	<b>4,000</b>	<b>4,700</b>
Deferred tax liabilities	650	200	200	200	200	200
Loans	250	1,500	3,000	3,000	2,000	1,500
<b>Total non-current liabilities</b>	<b>900</b>	<b>1,700</b>	<b>3,200</b>	<b>3,200</b>	<b>2,200</b>	<b>1,700</b>
<b>Total liabilities</b>	<b>2,100</b>	<b>3,450</b>	<b>5,600</b>	<b>6,500</b>	<b>6,200</b>	<b>6,400</b>
<b>Net assets</b>	<b>3,618</b>	<b>2,160</b>	<b>2,524</b>	<b>5,742</b>	<b>10,764</b>	<b>17,339</b>

\*\* Modern Water plc consolidated from 9 November 2020

Source: Deepverge, TPI estimates

**DeepVerge plc - Net Assets (£'000) 2019A - 2024E**



Source: Deepverge, TPI estimates

**Please note that the valuation incorporated in this note by TPI 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.**

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