RPMGlobal's mining-focused software has recently been bolstered by the addition of ESG considerations with electric vehicle support for its HAULSIM and SIMULATE haulage simulation platforms

Mining's ESG stewards

As miners adapt to ever-evolving stakeholder requirements, they are leaning on external consultants to shape and deliver their ESG strategies, Dan Gleeson reports

The scope of work carried out by consultants has continued to expand in recent years as the amount of in-house expertise within mining organisations has dwindled and the stakeholder demands placed on the sector's operators has increased.

Nowhere is this dynamic clearer than in the environmental, social and governance (ESG) space.

What was previously thought of as a 'fluffy' subject that involved 'box ticking', ESG requirements are now a fundamental part of doing business in mining.

Whether it is raising cash on the market, obtaining a credit rating or applying for exploitation licences, a company's ESG credentials are continually being scrutinised.

The need to effectively convey a sound ESG strategy throughout their business has, therefore, become a necessity.

Consultants are being relied on here: helping guide companies to achievable, but ambitious, short-, medium-, and long-term ESG goals; building out a framework for the company to report on progress; and advising on – and often engineering – the solutions to hit these targets.

Such a remit requires industry specialists prepared to put their necks out for miners with the knowledge their forecasts will be judged by all stakeholders at every turn.

Pragmatic ESG projections

RPMGlobal believes it has the specialists to make such projections having recently acquired Nitro Solutions and establishing a dedicated division focused solely on ESG.

This transaction has provided RPMGlobal with a differentiated offering in the ESG consulting space, according to Ngaire Tranter, Founder of Nitro Solutions and now Head of RPMGlobal's ESG division.

"Where Nitro and now RPMGlobal is different, is: 'we are mining'," she told ***IM***. "We're mining specialists that happen to do ESG, not the other way round.

"Our team is preferentially selected from people that have been on mine sites. We draw on this expertise to ensure any advice we provide is pragmatic."

Tranter, a fourth-generation miner, is keen to get this point across given the ESG focus that has swept through the sector in the past few years.

Ngaire Tranter, Founder of Nitro Solutions and now Head of RPMGlobal's ESG division

This has seen miners – big and small – announce ambitious sustainability goals involving Scope 1, 2 and (possibly) 3 emissions; majors pledge to become more transparent in the way they deal with stakeholders; and companies ensure that social value is created for employees, contractors and affected communities at all stages of the mining process.

The pool of consultants claiming to have the expertise to advise companies on the correct strategies to achieve such goals in this brave new ESG-focused mining world has expanded significantly.

This ESG demand trend led to RPMGlobal's June acquisition of Nitro, but Tranter says her team – which offers a range of services from environmental approvals, audits, economics, policy and legislation advice to compliance reporting and impact assessments – is one of the few on the market offering tailored and practical mining advice that appreciates the reality of mining.

"We offer holistic services," she said. "We work with that technology piece and use it in an advisory context to get the correct feedback for clients," she said. "The ability to leverage off that deep domain mining expertise really makes that technology practical and purpose designed to deliver solutions.

"We're problem solving with our own in-house mining expertise."

That problem solving piece has become a lot easier for the former Nitro team after joining RPMGlobal, with Tranter saying there is a "fantastic" technology foundation for the company's ESG division to leverage off.

What started with the recent addition of electric vehicle support for its HAULSIM and SIMULATE haulage simulation platforms – to allow trade-offs between diesel, hybrid or all-electric haulage scenarios – is set to expand further through organic developments and possibly M&A.

The financial budgeting tools of XERAS Enterprise, for instance, could be used for future emission budgeting, according to Tranter, while some of the pit simulation tools RPMGlobal offers could come into the mine rehabilitation and closure part of the ESG equation.

It is this latter area that Tranter believes will grow in significance and demand in future years – an area RPMGlobal is adequately qualified to advise on.

"That rehab and closure piece is going to grow further and further, and that will be brought into the discussion much earlier in the process," she said. "Fortunately, our models look a lot further out than what is happening

The mine rehabilitation and closure piece of the ESG market is set to grow, according to RPMGlobal's Ngaire Tranter. Pictured is an open-pit coal mine partially restored in the province of Leon, northwest Spain

next quarter or even what might be happening in 20 years' time. For things like groundwater models, we are looking to when these levels may reach a quasi-equilibrium. This involves looking out plus-900 years in some cases."

Not only is RPMGlobal equipped with the tools and models to take a long-term view that can be trusted by mining customers, it is also able to present the results in a way that everyone can understand, according to Tranter.

"Miners inherently want to do the right thing, even if the perception in certain quarters does not align with this fact," she said. "We are able to convey ESG considerations effectively to these companies by putting them in financial metrics everyone can understand.

"We provide a financial trade-off that allows companies to make an informed business decision about the decision to pursue or avoid a particular aspect of a project."

This is increasingly important in a market where the legislation and regulations governing mining companies changes from region to region, as does the expectations of communities and stakeholders.

Doing the right thing by the law may not always be viewed as 'the right thing' by stakeholders.

"Back when I started over 15 years ago, ESG was just about doing the bare minimum to move the project forward," Tranter said. "People now recognise the importance of corporate reputational risk and the implications of not doing the right thing."

RPMGlobal's ESG practice continues to use baselines such as the Equator Principles and the International Finance Corp's Sustainability Policies and Standards to provide the required transparency miners need to do business in major markets and to access capital, but the company is aware and conscious that the sector is continuing to evolve.

"In Australia, for example, a company is currently going through the court system for its 'net zero' claims'," Tranter said. "The way the world has shifted in terms of transparency means there are great examples all over the world for us to advise our clients on."

It isn't all 'defensive' ESG work in RPMGlobal's wheelhouse, with the company often providing ESG input for due diligence work related to M&A as well as lenders engineering services for mining and downstream mineral processing projects.

"ESG is a significant piece in the due diligence phase of M&A," Tranter said. "It's often about a company's appetite for risk. A smaller entity, for instance, might have a greater appetite for risk based on an established reputation they think can be used to approach the same asset in a different way."

Such a reputation could be used to tackle tailings projects that come with legacy ESG issues – assets that will most likely get a second look in the future when commodities such as copper, nickel, etc become scarcer.

"In Australia, there are some fantastic opportunities where companies could gain revenue and value by picking up those legacy assets and remedying some of those ESG issues," Tranter said. "As long as people understand the risks associated with what they are buying, then it is fair game.

"We at RPMGlobal are there to convey those risks clearly to the industry."

Implementing ESG strategies

Wayne Peel, General Manager Energy & Resources, Australia, recently joined **Stantec** from Engenium. He recognises the benefits that come with an established ESG reputation given many of the clients he deals with are typically blue-chip organisations with strong corporate governance.

At the same time, he is aware that gaining and retaining this reputation requires constant attention, with the sector currently engaged in transitioning its sites away from fossil fuels and further investing in mine rehabilitation and mine closure practices.

Renewable energy integration is a consulting area Peel sees a lot of industry interest in.

"It includes advisory services for carbon reduction strategies, the development of renewable energy transition plans, as well as engineering and project management services for the design and execution of those strategies and plans," he told ***IM***.

The company's efforts to tackle this industry brief have been bolstered recently with the acquisition of Engenium, a project delivery consultancy specialising in mining, resources and industrial infrastructure projects.

Based in Australia, Engenium has been involved in some major mine decarbonisation developments in the country, including solar integration projects for BHP Nickel West, and the Alinta Energy Chichester Solar/Gas Hybrid Energy Project in the Pilbara region for Fortescue Metals Group.

Peel said Engenium's "complementary skillset, size and reputation" is a great match for Stantec and is already contributing to the sustainability and growth of its existing business in Australia and beyond.

"One of the things that made acquiring Engenium attractive to Stantec was their experience helping large-scale mining clients implement clean energy into their operations," he said. "This includes solar power, battery energy systems, steam regeneration, wind and other renewable energy sources."

Such expertise is highly sought after in the mining space, according to Peel, who mentioned that financiers and corporate banks are stipulating ESG requirements as a condition of project funding.

"This has strongly influenced how miners

An important part of ESG is optimising efficiency on mine sites. Stantec designed this tailings facility (pictured) for a limited footprint at a mine in Peru

"Our clients are very much interested in doing things right with regards to how they care for the environmental and social aspects of ESG," Stantec's Wayne Peel says

approach their new projects," he said.

One area where this is starting to shine through is the inclusion of carbon pricing/accounting in project assessments.

Currently a voluntary disclosure, more mining companies are offering up these calculations now knowing it may become a future legal requirement.

OZ Minerals is a case in point, with the miner recently using a carbon price in determining the valuation for a shaft expansion of its Prominent Hill operation in South Australia. The first time it had used such an accounting tool, it is a practice it plans on adopting in other projects going forward, according to OZ Minerals Chief Executive Officer, Andrew Cole.

Peel said Stantec provides "carbon accounting" and advisory services as part of its "net zero mining" offerings, and he believed such services would be in greater demand in the future.

"My sense is that most mining companies are being asked this by their boards and financiers to understand how their balance sheet stands up under different carbon prices," he explained.

In addition, there are examples of companies changing the way their executives are remunerated by incorporating ESG goals into their payment structure. This sort of alignment has been noticed by Peel, who says it is influencing how the whole business operates.

"Our clients are very much interested in doing things right with regards to how they care for the environmental and social aspects of ESG," he said. "They want to leverage this to improve their brand image and reputation especially with the general public and their future workforce."

Accelerating its ESG ambitions

"The Golder acquisition was a remarkable opportunity for **WSP** to accelerate our ambition to become the leading global environmental consulting firm, and with that comes a leadership position in the mining space," André-Martin Bouchard, Global Director of Earth & Environment & ESG, WSP, told ***IM***.

Completed earlier this year, the $1.14 billion acquisition of Golder Associates made WSP a force to be reckoned with in the environmental consulting field, with approximately 14,000 of its 54,000 professionals dedicated to accelerating the world's "green transition".

The addition of Golder provided the company with all the right tools to turn the industry's corporate goals into concrete actions at mine sites and company headquarters, according to Bouchard.

"What we consider to be our 'flagship' offering is our ability to not only provide ESG advisory services to the C-suite in developing ESG strategy, but also to execute that very strategy through our broad range of technical expertise such as tailings, water management, permitting and air quality," he said. "We are embedding ESG into all our traditional mining services, creating a seamless connection between a client's ESG values and operational decisions."

Such integration allows the enlarged company to understand and advise on corporate ESG priorities and goals, while putting them into action in its designs and technical work, according to Bouchard.

"There are not many companies who can

A grade consideration

The cost of drilling at a mine depends on the location, geological features and complexity of the operation. In general, it could set mining companies back $150-300/m drilled, according to **Geovariances**, the global provider of geostatistics-based solutions.

To optimise the use of its drilling budget, a copper mining company based in Brazil recently asked Geovariances to assess the geological and, consequently, financial risks related to selecting different drill hole spacings at its operation. This factored in the elements to be mined, the tonnages produced and the grade thresholds for ore concentrates defined by customer agreements.

The methodology proposed by the Geovariances consulting team to address these questions included the application of geostatistical conditional simulations of the elements of interest using the available datasets from the real operation. This data was put through a cluster analysis with the simulated realities obtained forming the basis of the study, Geovariances explained.

"The selected realisations are resampled in different spacings," the company said. "These virtual drilling patterns are then used as an input for additional conditional simulations. The result of the conditional simulations with the virtual drilling patterns are then rescaled to the production increments, based on the actual production of the mine."

The increments used are consistent with monthly, quarterly or annual production, with the risk assessment performed within a confidence interval of 90% of the simulated results.

"From this study, the degree of precision related to each drill hole spacing is assessed and used as a guide for drilling campaigns, based on the uncertainties that the company is willing to tolerate for each of the production increments tested," Geovariances said.

The image below presents a schematic example of uncertainties related to different drill hole spacings for each production increment tested (as the information is confidential, the values have been changed).

Based on the study carried out by Geovariances, the customer is able to now define the ideal drill spacing for each region of the mine. This considers the thresholds of grade uncertainty of ore concentrate contractually accepted by its customers.

Geovariances concluded: "The main gains for the mining company are the possibility to estimate the grade uncertainty for each drill hole spacing, production increment and region mined, and to use this information to optimise the use of the drilling budget.

"The company then has the means to guarantee that the ore concentrates will meet the requirements of its customers defined by contract, avoiding the payment of penalties for non-compliance with the agreements."

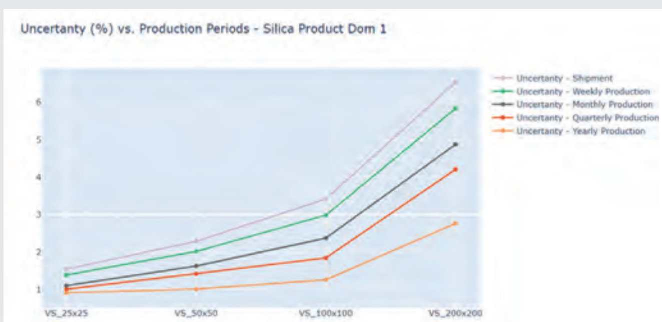

Figure 1. Average uncertainties (%) related to each drill hole spacing for the production increments studied

“We are embedding ESG into all our traditional mining services, creating a seamless connection between a client’s ESG values and operational decisions,” WSP’s André-Martin Bouchard says

bridge the two, who also have our depth of understanding of the mining sector,” he claimed.

WSP, prior to the acquisition, had expertise in power, processing, pipelines and grid infrastructure supporting mine sites, while Golder’s mining consulting nous spanned across mine engineering, geology, waste, water, rock, closure and environmental services.

“This means, together, we can develop roadmaps that reflect the unique considerations of the mine plan along with the ability to execute on the goals,” Bouchard said.

The combined group has exposure and expertise across the commodity segments, but Bouchard said there is an increasing awareness among consumers and technology producers around source materials and their origins.

“Examples such as Apple partnering with Rio Tinto and Alcoa on developing a carbon-free aluminium smelting process, or Elon Musk putting a call out for more nickel and offering lucrative contracts for companies who mine in an environmentally sensitive way, demonstrates the tech industry’s focus on ESG within their supply chains and meeting end-user expectations,” he said.

“Beyond the public arena, there are other shifts for battery mineral producers, such as more detailed stakeholder questions on benchmarking and water efficiency being asked of our lithium clients.”

In addition to carbon accounting being added to the ESG mix, climate change risk is now assessed as part of the stage-gating process for most of the major miners, according to Sean Capstick, Sustainable Development & Climate Change Specialist for Golder, a member of WSP.

“This information is used in the capital allocation process, where the competition for capital is both internal and external,” he said. “For example, access to low intensity electricity can make the difference in obtaining funding to move a project from feasibility to detailed design.”

When asked where the greatest need for consultancy input in the ESG market is – the ‘E’, the ‘S’ or the ‘G’ – Capstick addressed all three considerations in turn.

“The mining industry has been focusing on environment for a long time now and there remains a strong demand for support in this area as companies rely on consultants to not only maintain current standards but continually raise the bar in environmental performance,” he said.

Mines also have robust risk registers and are used to operating with some uncertainty given the need to take a long-term view on life of mines that can span decades. This means the framework for governance is stronger than other sectors, according to Capstick.

“We’re working closely with our clients in areas such as meeting requirements around standardised reporting and disclosure and translating local risks to investor statements,” he added.

WSP's broad range of technical ESG expertise includes tailings, water management, permitting and air quality (photo: Golder)

The social aspect is where the industry is now turning its attention to, according to Capstick.

“Moving beyond just acceptance to a true partnership, where the legacy mining leaves for a post-closure community is a positive outcome, requires the combined expertise of owners, operators, consultants and communities,” he said.

“Although mining companies are the ones driving engagement with communities, the support that consultants can offer throughout the process, including developing strategies to address the identified needs and priorities of the community, can be invaluable.”

“Although mining companies are the ones driving engagement with communities, the support that consultants can offer throughout the process, including developing strategies to address the identified needs and priorities of the community, can be invaluable,” Golder's Sean Capstick says

These priorities often factor into the design of certain assets and the need to establish a continual improvement process that can be integrated into both the asset-level engagement and business unit planning activities, Capstick explained.

And even with different regulations governing ESG considerations across the globe, Capstick said the sector is coming round to following global frameworks, like the ICMM or the Mining Association of Canada’s Towards Sustainable Mining.

“Of course, the level of ESG consulting support required varies by site based on factors such as the stage of development and the strength of in-house teams,” he added.

When it comes to M&A, WSP sees ESG risk assessment becoming a much bigger part of the due diligence process.

“In recent years, we have been seeing a clear trend in our M&A work to expand the screening and materiality assessments to cover ESG issues,” Capstick said. “There have been a number of high-profile examples where natural hazards and water variability have interrupted mining operations. These risks are top of mind for operators, who are developing these assessments internally and as part of the stage-gate process, which results in an increased focus on these topics in an M&A scenario.

“We expect that this type of risk assessment will become a standard part of the due diligence process, much like the Phase I/II assessments are pro-forma in real property transactions.” IM