

# BDO's Energy 2020 Vision: The Near Future of Mining

Driverless technology, deep-sea excavations, and mining expeditions on the moon were once just the ideas of sci-fi movies. Today, they're realities or just around the corner. And by 2020, we expect (most of) them to be the norm.

As low commodity prices persist, mining companies are under pressure to reimagine their business models. Those that have incorporated technology into their operations have seen their revenue streams live on, while those that haven't have fallen short.

The value of harnessing technology is clear. Driverless technology increases mining output by 15 to 20 percent while cutting fuel and maintenance costs by 10 to 15 percent and 8 percent, respectively. It also improves mining safety exponentially. At the same time, though, these Internet-connected technologies open the mining industry up to new cyberattack vectors that they must hedge against through proper internal controls. If not, they risk seeing their entire operation crippled by a single attack.

Reflecting on this period of turmoil and transition, BDO's Global Natural Resources team is looking towards the future to help mining companies anticipate and plan for the challenges and opportunities ahead. We believe that to prepare for success in 2020 and beyond, mining companies must strive to become "Lean, Green, Digital" machines. The global predictions presented in this report are based on research and collective input from BDO's Natural Resources and Mining leaders. In addition, the practice leaders from five countries (Australia, Canada, South Africa, the United Kingdom, and the United States) have provided predictions for the industry in their local markets.

## Summarising bdo's energy 2020 vision for mining globally:

**ROBOTS:** By 2020, robots will replace more than 50 percent of miners, and mining accidents will be cut by 75 percent. Half of the miners will themselves be retrained to run the technology controlling the robots.

**EU CONFLICT MINERALS RULE:** Supply chain transparency will take the compliance spotlight for 2020 as companies gear up for the European Union's Conflict Minerals Rule, effective in 2021.

**CYBERSECURITY:** By 2020, activist hackers will launch at least five cyberattacks on mines around the world in Permanent Denial of Service attacks aimed at eliminating the environmental and social threats they pose. They'll use workers' connected devices to initiate the attacks.

**RENEWABLES:** By 2020, renewables will account for one-quarter of the world's electricity generation as dependence on coal wanes.

**IoT IN MINING:** Global mining companies leveraging Internet-connected sensors and automated drillers in mines will decrease their per ton digging costs by more than 30 percent.



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