

## Current trends in project delivery



As a result of the sustained global boom in the mining industry, a considerable number of companies are now contemplating the development and construction of mining projects. Regardless of the type of mineral to be mined, this inevitably leads to consideration of the appropriate method of project delivery.

Traditionally, a common and often preferred method of project delivery was the turnkey or the engineer procure and construct contract, commonly known as the EPC contract (an EPC). Under this method, the contractor agreed to engineer, procure all required plant equipment, construct, and commission the project.

by Andrew Gabrielson

The principal advantage of an EPC was that the contractor agreed to deliver the project in accordance with an agreed schedule and often by a guaranteed completion date, for an agreed price and with guarantees that the project would attain specified levels of production upon being commissioned. An EPC provides a significant level of certainty for the project owner and its bankers with respect to

both the delivery of the project, as the risk relating to cost, schedule, and performance of the project was borne substantially by the contractor, and for performance of the project, as the contractor had to deliver a project that was fully operational and compliant with the specifications of the owner, and any defect or default in the project

being the contractor's responsibility, except where an EPC provided otherwise.

Given the current demand for materials, labour, and construction plant and equipment, and the fact that long lead items have delivery times commonly exceeding 18 months, it is now difficult for contractors developing projects in the mining industry to control the risk relating to project construction, particularly risk relating to cost and schedule. There are now few contractors in the present market willing to deliver a mining project under an EPC, and those contractors who are include a significant premium in the contract price.

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risk. The method of delivery now most commonly being used with respect to mining projects (particularly by owners of significant scale and balance sheet strength) is the engineering, procurement, and construction management contract, more commonly known as the EPCM contract (an EPCM). Under an EPCM, the contractor, usually an engineering firm, is largely responsible for design, procurement, and construction management of the construction of the

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project, with the latter two functions being performed by the contractor largely as the agent of the owner. The owner, either itself or through the contractor acting as its agent, engages and pays all suppliers, vendors, and contractors who supply plant and equipment, or construct the project according to the design of the EPCM contractor. Though the contractor is largely responsible for design, procurement, and construction manage-

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ment under an EPCM, risk (particularly in relation to engineering and capital cost, schedule, and performance) is largely borne by the owner. This requires the owner to have adequate financial reserves available to meet project risk and contingencies. In the present market, significant cost and schedule delays under an EPCM are not uncommon and can be spectacular.

Despite exposure to greater owner risk, an EPCM is not without its advantages. Commonly an EPCM will permit earlier commencement of the project as, unlike an EPC, final project design is not required in order to facilitate project pricing or commencement. Given the greater level of risk being assumed by the owner, an EPCM, by its terms, usually conveys on the owner significantly greater flexibility and control, particularly over design, procurement, scheduling, and progress of the project. This often leads to more efficient pricing and a lower price. In addition, any cost savings obtained through value engineering or improvements in design are to the account of the owner. Most EPCM contractors of any substance can be motivated by a combination of incentives and penalties to bring the project in on time, on budget, and with the required level of performance.

The principal disadvantage of an EPCM is the substantial transfer of project risk to the owner. Most EPCM contractors are, in respect of liability arising under an EPCM, unwilling to put at risk anything greater than the profit obtained on engineering fees paid to them under the EPCM. Profit is usually in the order of 10 to 20 per cent. Commonly, that liability is further limited by the principal remedy of the owner against the contractor being confined to the reperformance of any defective engineering services. While, EPCM contractors will often accept penalties in connection with cost, schedule, and performance, such penalties are of a limited amount and usually will not make any impact on defraying any significant loss suffered by an owner, if the contractor fails to deliver the project on time and within budget. Furthermore, it can be difficult to determine and allocate liability, as there is no single point of responsibility for performance of the project and the owner faces the unenviable task of determining which of its multiple contractors is responsible for any lack of performance of the project. In short, if the owner's expectations for the project, as expressed in an EPCM, are not met, its remedies are limited.

Finally, a project of any size will result in the EPCM contractor committing a considerable number of its personnel to the project. This requires that the owner have sufficient in-house engineering resources to supervise and manage the contractor's usually voluminous demands for input, approvals, and information. While this is not usually an issue for major companies, smaller companies lacking such resources can cause project delays and frustration for the EPCM contractor, which ultimately has negative effects on delivery of the project. 

Paladin operates in the minerals resources industry with a principal business focus on development and operation of uranium projects in Africa and Australia, as well as evaluation and acquisition opportunities throughout the world. The Company is listed on the Australian Stock Exchange and additional listings on the Toronto Stock Exchange in Canada. In 2007 the Langer Heinrich Uranium Mine in Namibia came into operation and achieved first production. In Malawi, construction of the Kayelekera Uranium Mine commenced and production is expected in late 2008 using an acid leach process.

Paladin has also secured control of the 3rd largest uranium province in Australia through the acquisition of Valhalla Uranium Ltd and an 82% interest in Summit Resources Limited.

Finally, the successful and timely fundraising of US\$250M through a Convertible Bond issue in November 2006 has enabled the Company to move forward in a well funded manner. Paladin remains confident of the positive outlook for the nuclear industry. Its strategy to establish progressive development of uranium mines and, via M&A activity, achieve a global footprint.

## General Manager

### - Executive Leadership Role - New Uranium Operation

The company is seeking to appoint a General Manager for the Kayelekera Uranium Mine, to provide executive management and leadership for the development and operation of the mine. You will need to draw upon your mining related qualifications and extensive, senior level, industry experience to successfully implement the operation on time, schedule and budget, and then ensure the operations achieve budgeted costs and production while continually striving to improve operating parameters. Responsible to the Executive General Manager – Operations Development, it is essential that you have experience in uranium processing and/or mining. Developing country experience would be an advantage. The role will be offered as residential or FIFO, however you will be expected to be on site for a large part of the commissioning stage.

Malawi is an English speaking, predominantly Christian country, bordered by Zambia and Mozambique, on Lake Malawi, in southeastern Africa. It has a very stable political climate and the local community has embraced the mine and the company.

## Senior Operations Opportunities

The company also has a number of senior operational opportunities at various locations in Africa and Australia and seeks expressions of interest from experienced uranium mining and/or processing professionals for the following roles:

- SHREQ Manager
- Environmental Manager
- Manager Metallurgy
- Processing Superintendent
- Senior Radiation Officer
- Electrical/Control & Instrumentation Engineer
- Engineering Manager
- Senior Production Controller
- Chief Chemist
- Process Control Technologist
- Geologists

Opportunities are not limited to the above roles, and we welcome expressions of interest from all uranium industry professionals interested in other opportunities with Paladin Resources.

Visit [www.paladinresources.com](http://www.paladinresources.com) for detailed project information. Please email your application to [Nathan.hunter@beilby.com.au](mailto:Nathan.hunter@beilby.com.au)

For initial enquiries or any assistance you require in making your application please contact **Vic Bullo** or **Nathan Hunter** on **+61 8 9323 8888**.

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