

The deugro Service Portfolio

Mining and Metals Industry





**Specialized
Supplier**



**Family
Enterprise
Since 1924**



**Global Access
40 + Countries
70 + Offices**



**Trusted
Partner**



**In-house
Chartering Team**

deugro's Mining and Metals Expertise at a Glance

At deugro, we combine world-leading, concept-to-completion expertise with design and major project freight forwarding capabilities for the mining and metals industry. From mine planning, mineral handling and processing, to metal smelting and refining, we see ourselves as an extension of our clients' in their respective supply chains, providing the best in terms of both cost and service.

Whether studies, route and site surveys or adequate transportation routing, we are with our clients every step of the way. deugro has first-hand experience in facing the challenges associated with large and complex minerals and metals projects. deugro specializes in new project developments and existing facility upgrades and expansions, across a whole range of commodities, and we have supported the delivery of some of the world's largest mines and processing facilities.

deugro has always been considered a market leader in project logistics innovation, due to the complexity of the projects we execute. Over the past years, we have built up an impressive track record of handling projects for the mining and metals industry and other complex sectors. Thanks to our expertise in a wide range of projects in different fields, we are able to capitalize on synergies and harness buying power, both of which are beneficial to our clients.



Communication with our partners is crucial for deugro. Our process management system is modeled on constant communication between our client and a dedicated project manager, who is present on site and serves as a single point of contact throughout every step of the project.

We understand the specific challenges facing the industry, such as extremely remote job sites and tight time schedules, or the difficulties involved in finding a reliable one-stop-shop logistics partner. Which is why we provide equipment and materials for all types of mines, steel mills and aluminum smelters, shipped to any part of the world just in time.



Lifting operations of a transformer, transported for a mine extension project

QHSES – Safety First!

Safety is deugro’s top priority. At the core of our safety culture is where you will find our deugro group Life Saving Rules, which set the standard for all deugro group companies. We not only realize but unequivocally stand unified on the statement “Our people are our greatest asset,” also regarding the people of the companies we work with in partnership, to safely deliver world-class service to our clients. As a company, we must ensure that we have resolute and safe systems of work in place to protect and preserve the health, safety and well-being of our employees.

For deugro—a company of the deugro group—we utilize the policies, system and standard operating procedures that have been developed and make up our ISO-accredited Integrated Management System (IMS) as our directive on how we manage and safely deliver quality service.

- We have ISO-certified and accredited management systems in:
- Quality
 - ISO 9001:2015**
 - Environment
 - ISO 14001:2015**
 - Occupational Health and Safety
 - ISO 45001:2018**

This system is continuously reviewed, monitored and developed. Internal triggers allow us to quickly make any necessary adjustments and to ensure we meet both our company objectives and our project KPIs while fostering continuous improvement.

At deugro, we integrate quality, health, safety, environment and security (QHSES) into every aspect and phase of the client’s project.

Our success at executing projects safely and meeting client’s expectations starts with a risk-based approach. From the beginning, we utilize our very experienced and diverse workforce to collaboratively identify all hazards that can cause harm to a project and develop suitable control measures to either eliminate the risk or assuredly reduce the risk to an acceptable level.

This risk-based approach, along with working under our years-long, tried-and-tested Integrated Management System gives us direction in ensuring that we develop project-specific quality, environmental and safe systems of work.

Through proper planning and managed execution, through the implementation of identified control measures as well as the use of up, down and cross communication, and through the constant review and monitoring of our performance on all levels and implementation of corrective actions whenever necessary, we deliver all project QHSES KPIs while delivering the most important aspect of any project: the safety of all stakeholders.

Our approach to your project



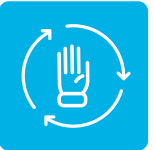
Plan
Specific risk assessment, QHSES plans



Do
Job safety analysis, method statement, subcontractor vetting, training



Check
Auditing, workplace inspection, certifications



Act
Management review, preventative and corrective actions



Defining Logistics. Delivering Safety.

Our Compliance Standards

The deugro group compliance standards are reflected in various ways, and it is our philosophy to incorporate compliance at all levels of the group and in everything we do. Our corporate policies—the Code of Ethics and Compliance (CoEC) and the Anti-Corruption Compliance Policy (ACCP)—are proof of our commitment. These corporate regulations are mandatory for all deugro group companies worldwide, and employees and business partners are required to operate within their framework at all times. Our Compliance Management System (CMS) was designed to consider various international regulations and recognized standards, including the United

States Foreign Corrupt Practices Act (FCPA), the UK Bribery Act 2010 (UKBA) and the OECD Guidelines for Multinational Enterprises. The CoEC and ACCP serve as the foundation for the CMS, and are reviewed, updated and acknowledged by all deugro group employees on a regular basis.

Furthermore, our Transport Management System (TMS) screens all shipments, specifically the names and addresses provided, on a 24/7 basis against all applicable international governmental sanction lists in order to scrutinize each business transaction.

To keep our employees involved in our efforts to live and maintain

the highest standards of ethics and integrity, we also offer frequent compliance training. It is provided online and in face-to-face workshops, subject to individual risk assessments. Important announcements on the corporate intranet and local bulletin boards serve to raise ongoing awareness.

Local compliance ombudsmen are available in all of our offices. All compliance ombudsmen receive face-to-face training by the Head of Global Legal and Compliance.

» A successful compliance program is not about focusing on the rules. It is about fostering a true culture of ethics and integrity. «

Jessica Kaplan, Head of Global Legal and Compliance

Project Insight:

D3 Secondary Mill Project

deugro was awarded the transportation of a ball mill, mill motor and associated components to a mine site located in Logan Lake, British Columbia (BC), Canada. The cargo was designed to boost the profitability and sustainability of the operation by increasing copper recovery from processed ore.

deugro’s scope included freight forwarding to Canada from various production sites located in Germany, the Czech Republic, Australia and Brazil. From the Port of Vancouver to the project site, we accomplished the transportation of the widest load: mill heads measuring 7 meters in diameter. This continues to be one of the widest loads moved to date from the Port of Vancouver by road over a distance of 333 kilometers into central BC. The feedback from both the client and the EPC was very positive; both companies were highly satisfied with deugro’s performance on the D3 Secondary Mill Project.

Project challenges

Due to low water levels of European rivers during the summer and fall of 2018, deugro had to manage draft issues that threatened the project timeline. The booked vessel waiting in Antwerp, Belgium couldn’t be missed due to the tight project schedule. As a result, the deugro project team from the Canada, Germany and Czech offices drew up an excellent back-up plan and proposed this to the client and the

EPC, who welcomed the solution. In the end, deugro managed to catch the vessel after promptly transferring the loads onto a lower draft barge and reaching the Port of Antwerp just in time.

Even though the volume of the scope was relatively low, it was a very fast-paced and highly demanding project. Multiple changes within a dynamic environment meant that deugro had to respond quickly. Therefore, booking transportation equipment and coordinating shipments were just two of the project’s biggest challenges. deugro managed to pick up and arrange all shipments according to the schedule, especially the many critical shipments, and to the utmost satisfaction of its client.

During ocean transportation, deugro was requested to load all out-of-gauge open top and flat rack container shipments under deck on container vessels, which was managed successfully as per the client’s request.

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Project data

- Mine: Highland Valley Copper Operations
- Minerals processed: Copper, molybdenum
- Origin: Various origins worldwide
- Destination: Logan Lake, British Columbia, Canada



Lifting operations, involving a 35 MT shell with a diameter of 7 m, at the Port of Vancouver, Canada



» Multiple changes within a dynamic environment meant that deugro had to respond quickly. «

Project Insight:

Canadian Arctic Mining Project

As part of the strategic expansion of an iron ore mine in remote northern Canada, deugro successfully delivered a new bulk material handling and processing system. This included 21,000 metric tons of modular cargo originating from locations in Europe, Canada and Vietnam, with the largest item weighing 1,875 metric tons and measuring 32 x 29 x 34 meters.

All equipment had to be delivered to a remote Arctic site, which is ice-free and accessible for only two months a year, with no existing suitable offloading facility. deugro's key responsibilities included safety management for all operations, technical evaluations and bookings for the specialist marine craft required to deliver the cargo, motion analyses for loaded vessels, and seafastening design and installation.

Technical innovations included using a barge as a floating transitional jetty due to shallow draft limitations at the site, complex mooring activities, and the unloading of all cargo from the vessels and barge with delivery and placement to designated areas on site.

The approach

With the very limited two-month time window available to deliver and complete the work at the site, deugro worked extensively with both the client and the project owner to evaluate strategies, manage project risks and determine impacts to schedules. This included multiple visits to the project site and loading ports,

agreement on cargo readiness, scheduling, delivery sequences, and specialist equipment availability, in addition to the technical considerations at the job site. Studies performed by the deugro team specified the size of the marine vessels required, the structural design capability for the site jetty, the water depth, dimensional size limits and mooring requirements.

Technical solutions were developed with the client, ensuring compliance with industry safety standards. This required the development of job safety analyses, field-level hazard assessments, risk assessments and site-specific emergency response plans for each activity.

Prior to mobilization, the project team members completed a total of 1,940 hours of industry-specific HSE and cultural awareness training to ensure zero harm while respecting the unique local population and sensitive ecosystem. Thanks to the effective HSE regime, deugro was proud to complete the project without any health, safety or environmental incidents, and the local ecosystem was left intact.



Crusher building (1,466 MT), being moved over the transition barge on four individual 16-axle SPMTs

The offloading operation

Working with marine specialists over several months, a bespoke mooring system was designed and installed to enable the barge, module carrier and heavy lift ships to remain positioned safely during operations while causing zero environmental impact.

Due to the deep draft of the module carrier vessel and shallow waters at the site, the innovative concept of a floating transition barge, developed by deugro and dteq, a company of the deugro group, was key to the project's success. The barge was maintained in position throughout the offloading operations by means of nine spuds securing it to the seabed, allowing free movement of the barge up and down on the tides. The mooring arrangement ensured the barge would stay in position even in the event of storm conditions.

Extensive technical studies were carried out in advance to model the combined cargo and transport

equipment weights moving from stern to bow during discharge operations in relation to tide levels. An industry-leading barge ballasting system was selected and installed to compensate for weight transfer and tidal variations. Up to 5,000 metric tons of seawater was pumped in and out of the barge ballast tanks every 12 hours to maintain the barge deck trim and level with the jetty height for offloading the cargo to the shore.

The heaviest item (with a combined cargo and SPMT weight of 2,300 metric tons) was successfully offloaded, with an added challenge of only 10 centimeters of clearance on each side of the 33-meter-wide cargo, as identified within the deugro technical solution.

The project was delivered safely and on time: Completed within a 54-day operation, with 40 personnel working approximately 40,200 man-hours and logging zero incidents.

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Challenges

- Almost two years of planning, meetings and feasibility studies
- Extreme remote offloading location, without a suitable offloading facility and only accessible for two months in the year
- Mobilization of a 120 m barge to use as a floating bridge

Point of View:

Koniambo Nickel Mine Project

The Koniambo Nickel Mine is one of the world’s largest and highest-grade nickel and laterite deposits in the South Pacific. We spoke with Sven Hergemoeller, President - South East Asia and Oceania, about how deugro successfully managed the onshore and offshore logistics for this major project.



Sven Hergemoeller,
President - South East
Asia and Oceania



What do you think was the most challenging part of this project?

The most challenging obstacle was the remote job site, which was surrounded by very poor infrastructure. New Caledonia is in the South Pacific — far away from anything else and detached from the most frequented shipping lanes. The only available deep-sea port serviced by a handful of container shipping lines is Noumea (South Province), located approximately 125 nautical miles (230 kilometers) away by sea and approximately 300 kilometers away via a single road from the actual job site location in Vavouto.

Because the road infrastructure along the way was poor, with lots of small bridges and narrow turns,

the vast majority of the cargo (especially oversized and heavy equipment) was transported by barge. In addition, the stringent HSE requirements imposed by the client made it clear that road transport along the treacherous route was to be avoided as much as possible.

Could you talk about some of the factors that made this project particularly complex?

The project included a full charter of the heavy lift vessel *MV Jumbo Javelin*, equipped with two 900-metric ton SWL cranes. A total of approximately 32,000 cubic meters of project cargo were loaded on this vessel, a challenging part of the project, due not only to the cargo



Maximum
Heavy Lift
450 MT



Owner
Xstrata/KNS



Investment
USD 4.5 billion



Client
Hatch-Technip
(JV)



Volume
550,000 FRT



Container
3,500 TEU

volume, but also to difficult timing, right in the middle of the Lunar New Year festival.

The voyage started in Batam, Indonesia, where three coal baghouses and mill filters (maximum weight of 180 metric tons) were loaded on board. The vessel continued its voyage up north to load additional cargo in Shanghai, followed by Qingdao and Dalian, China. The additional cargo included two modules measuring 25 x 14.5 x 17.5 meters and weighing in at 414 metric tons each, as well as two silo cylinders, each weighing 343 metric tons and measuring 27 x 13 x 13.5 meters, and two silo cones, 228 metric tons and 12.2 x 12.2 x 16 meters each.

Based on your experience in the mining industry, what current and future challenges will the industry face and how is deugro planning to improve its services?

From my perspective, optimization has long been an important issue in the mining industry and is something the industry needs to delve into in the future. Low commodity prices are now an objective reality in most mining sectors, which makes it necessary to optimize processes. Investing in cost-effective machinery and environmentally-friendly

technology is an ongoing process in the industry. deugro can support its clients in this process by offering tailor-made transportation solutions that help to reduce the cost of energy in the supply chain. With dteq Transport Engineering Solutions, a company of the deugro group, we have the expertise to offer logistics services by thinking outside the box.



A coral bin silo fabricated in Taiwan is loaded onto the vessel

» Optimization has long been an important issue in the mining industry. «

Sven Hergemoeller, President - South East Asia and Oceania

Our Dedicated Services for the Mining and Metals Industry

- Segmented approach, enabling our experts to develop solutions for industry-specific needs
- Detailed route studies and cost estimation to support our clients in the early development stages
- Basic civil work related to completing transportation
- Procurement practices leveraged to harness our global buying power with vetted subcontractors in every region
- Timely delivery of heavy and oversized long-lead items (i.e. large equipment, machinery and materials)
- Project consulting and logistics management services
- High performance in the most remote areas and under the most challenging circumstances

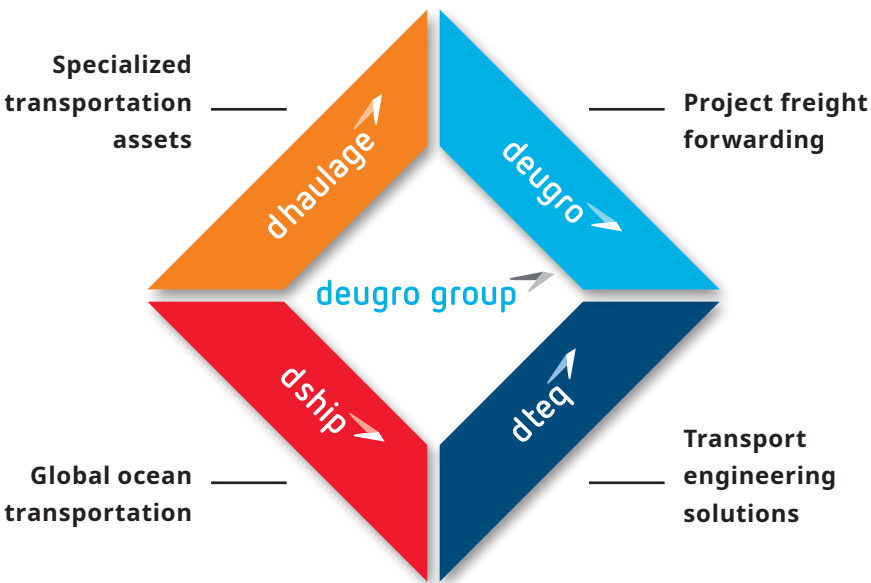
100% Mining – Every mining project is an individual undertaking and is therefore planned on a case-by-case basis.



deugro group: The Unique One-stop Shop

The deugro group originates from deugro, the first company founded in 1924 in Frankfurt am Main, Germany. Today, the deugro group continues to be a family-owned enterprise with a strong financial foundation. This global, flexible and diversified network with local knowledge and experience is redefining industry standards now more than ever.

The deugro group is comprised of four independent companies that offer far-reaching competence, experience and know-how in their fields of business:



deugro

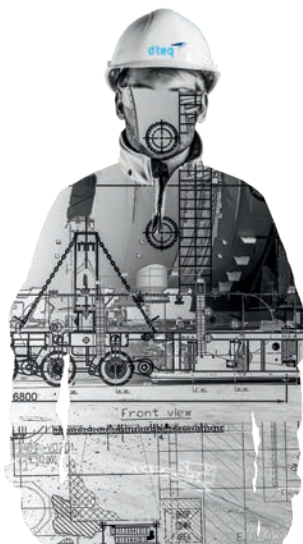
deugro is a highly specialized freight forwarder with a strong focus on turnkey logistics solutions for industrial projects. It has a proven track record in successfully executing projects of any magnitude, even under the most challenging conditions and requirements. deugro focuses wholly on identifying and solving clients' specific needs with unique tailor-made solutions to fulfill all requirements. To deliver the best in both cost and performance, deugro serves as an extension of its clients in their respective supply chains. It provides ocean and inland waterway freight services, road and rail transportation as well as air freight to almost any destination.

» We are redefining industry standards now more than ever. « Thomas C. Press, Co-CEO – deugro group



dhaulage

dhaulage provides an extensive and comprehensive range of heavy haul and heavy lift equipment for any kind of specialized or challenging project. The company owns and operates its own fleet of prime movers, heavy duty hydraulic trailers as well as other specialized conventional trailers, and installation equipment, which are available to our clients at any location worldwide. Furthermore, dhaulage owns a variety of supporting equipment, such as fenders, lifting equipment of various capacities, lighting towers, generators and a tailor-made fly-over bridge with a capacity of 300 metric tons.



dteq

dteq Transport Engineering Solutions provides tailor-made transport and marine engineering solutions, as well as port captain, surveying and supervision services, and project consulting. To solve and overcome all the challenges of moving oversized and heavy cargo, dteq's experts leverage decades of specialized engineering knowledge and experience. They do so with dedication, talent and an inventive spirit for every project phase.



dship

dship Carriers provides cost-effective tramp services for heavy lift and project cargo. Driven by service, dedication and high-quality workmanship, dship ensures that risk remains at a minimum and delivers solutions that exceed clients' expectations. A global provider of ocean transportation services, dship manages and owns a fleet of modern and reliable multi-purpose vessels. These are designed to support the specialized needs of breakbulk, heavy lift, dry bulk and project cargo clients in the oil and gas, wind energy and floating cargo industries—to name just a few.

From concept to project closure, deugro has the experience, knowledge and people to develop new, innovative and cost-effective logistics solutions for our clients' complex challenges.



» Every new mine development project is unique. That's why deugro provides project logistics solutions tailored exactly to each of our client's requirements. «

Ivan Souza, Corporate Vice President – Sales & Business Development Mining

Global Mining and Metals Clients and References

Our list of clients and project references speaks for itself, clearly demonstrating deugro's proven ability to perform under the most difficult circumstances and conditions, and in the most extreme environments. deugro has successfully executed mining projects around the world, including gold, copper, diamond, nickel, aluminum, platinum and coal.



Williamson Diamond Mine Project

Client

De Beers

Project Volume

Approx. 50,000 FRT

Scope of Work

Onshore and offshore project freight forwarding services, warehousing and customs brokerage

Project Scope

Full project management, including documentation, pre-shipment inspections, warehousing, stock holding, handling, packaging, loading and transport to site via air, ocean, road and rail. Coordination of different modes of transportation to achieve project timelines at site. Abnormal transport of screens, moving 6,000 kilometers from deugro Johannesburg to the site in Tanzania.



Snap Lake and Victor Project

Client

DRA Global

Project Volume

Approx. 15,000 FRT

Scope of Work

Complete strip of the entire plant into modules

Project Scope

Full project management and site set-up for complete modular stripping-down of the plant, packing, lashing and stowing, as well as chartering. Coordination of entire plant breakdown into modular containers and chartering to move the complete modules from Richards Bay, South Africa to Montreal, Canada for assembly.



Overdimensional road transportation of a scrubber drum for the Letseng Diamonds Project

Letseng Diamonds Project

Client

DRA Global

Project Volume

Approx. 20,000 FRT

Scope of Work

Abnormal transport via road

Project Scope

Full project management, including expediting, handling, loading, storage, transport, customs clearance, documentation and acceptance at site. Coordination of approximately 1,000 truck loads for both phases, primarily from Johannesburg to the Letseng Diamond Mine in Lesotho. Abnormal transport of scrubber drum up the highest tarred mountain pass in Africa (Moteng Pass, altitude of 2,850 meters) in winter weather conditions.

Some clients who entrust us with their projects

Suppliers/EPCs

- ADP Group
- DRA Global
- FLSmidth
- Fluor
- Hatch
- Intecsa
- Jacobs ECR
- JGC Corp.
- Kawasaki Heavy Industries
- Sandvik
- SNC-Lavalin
- Techint Italimpianti
- TENOVA, Takraf, MAN Takraf
- thyssenkrupp Industrial Solutions
- WorleyParsons

Mining Companies

- Anglo American
- Barrick Gold, Randgold
- BHP Billiton
- CODELCO
- Fortescue Metals
- Freeport-McMoRan
- Glencore, De Beers
- Goldcorp
- Newcrest
- Newmont Mining
- Rio Tinto
- Teck Resources
- Vale
- Xstrata

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a company of the **deugro group** 

