




RENT-A-FLEET



Paul Waanders, Maats, the Netherlands, addresses the management and maintenance issues faced by pipeline construction companies regarding their fleets of basic and specialised equipment.

As opposed to general construction equipment, specialised pipeline construction equipment is not widely available. With increasingly large pipeline construction projects and a fluctuating market, maintaining a fleet of specialised equipment for pipeline construction is becoming a true challenge.

Over the last few years, the global pipeline industry has been dominated by some of the largest onshore (and offshore) construction projects in history. Projects like TANAP, TAP, the Power of Siberia pipeline, and the East-West pipelines in China are just a few of the large diameter

COVER STORY



Figure 1. Quick upscaling and downscaling where needed.



Figure 2. A full, large diameter welding spread.



Figure 3. Eight RL64 in action on a 48 in. jobsite in Turkey.

and long distance pipelines that have been built or are still under construction.

Although some countries aim to reduce the use of fossil fuels, such as natural gas, global energy and gas demand is still increasing. Consumption of natural gas globally is projected to increase from 120 trillion ft³ in 2012 to 203 trillion ft³ in 2040 in the International Energy Outlook 2016 (IEO2016) reference case. By energy source, natural gas accounts for the largest increase in world primary energy consumption. This also means that so far there is no foreseeable end to the construction of pipelines for transporting natural gas, and on a global scale the number of kilometres of pipeline under construction is only increasing, though mainly for fewer projects but of larger scale.

These large-scale projects are of great value for all parties involved, but in many cases, the sheer size of the tendered lots exceed the capabilities of single construction companies, not only in terms of the workforce but also in construction machinery. This is where many pipeline construction companies find themselves between a rock and a hard place: where on one side construction companies want to own all the necessary equipment in order to have maximum flexibility, and on the other, many of them do not want to have the burden of a large

equipment fleet on their balance sheet. In many companies this results in a discussion, not about the machinery needs on an actual project, but more about maintaining a machinery fleet in between projects.

Management of the fleet

When it comes to fleet management, pipeline construction equipment can be divided into three major categories:

- A1: Essential equipment, needs to own.
- A2: Necessary equipment, can be owned, (some) alternatives available.
- A3: Needed equipment, no need to own, widely available.

Without going into too much detail, category A1 equipment can be defined as specialty equipment like welding systems and HDD equipment, and can even be translated in soft skills like project management. It covers all the items a pipeline construction company specialises in.

Category A3 is easiest explained as earthmoving equipment; machines that are widely available, even when in more remote locations.

Finally, category A2 is reason for most discussions; the specialised pipeline construction equipment covers the likes of pipelayers, welding tractors, and pipe bending machines. These are machines that are always necessary but have a fairly limited availability, even on a global scale. Due to this limited availability, construction companies generally prefer to own this specialised machinery so they have direct access at all times. Therefore, most pipeline construction companies choose to have a basic equipment fleet with a limited quantity of machines – largely machinery that is suitable for most common diameters. This gives the company the flexibility to mobilise quickly and build smaller projects, without having the financial burden of a large number of machines.

Fortunately, most pipeline construction equipment has a long, useful lifespan. As opposed to earthmoving equipment, pipelayers, welding tractors and pipe bending machines stand idle for most of their time on a project. As project diameters may vary, it is also possible that machines cannot be used because the pipe diameter is either too big or too small, resulting in longer periods of standstill in between projects. After a number of years, even with sufficient projects, this can result in machines with relatively low working hours.

The very first Liebherr pipelayer RL422-1001 manufactured in 1995 currently has 13 500 working hours, which means an average of approximately 2.5 working hours per day (based on 45 working weeks per year, five working days per week, for 25 years). This low occupation does result in a high residual value of pipeline construction machinery in general.

Another reason for owning pipeline construction equipment is that, in some cases, it is mandatory to have

specific (key) equipment available as this might be a requirement in a project prequalification procedure, as part of proving a construction companies' capabilities. There are, however, some major issues that have an effect on the profitability of owning such specialised equipment.

Maintenance and service

In order to live through its useful lifespan – even when it is not actually used on a project, thus also when there is no actual revenue to cover the costs – machines have to be maintained. If necessary maintenance (and service) is not performed, this will result in extra costs when the machine has to be prepared to actually go on a jobsite.

Project diameters differ

In gas pipeline construction, there is a range of common diameters between 6 in. and 56 in. For welding tractors this obviously is not a problem, but for pipelayers and especially bending machines, this means that a construction company has to have machinery available for all the diameters from 6 in. to 56 in., sometimes in larger quantities. Operating in a global market, it is also possible that less common diameters appear, such as 21 in., 44 in. or 52 in., and as a result it is nearly impossible for pipeline



Figure 4. Different machines for different project diameters.



Figure 5. Large projects require a high volume of machinery.

construction companies to be prepared for the whole range.

Project size increases

As explained, the current pipeline construction industry is dominated by large-scale projects, making the highs and lows in demand for this specialised construction machinery more extreme. In such cases, a basic equipment fleet is not sufficient to cover the total equipment needs for these projects.

Projects become more uncertain

Long-term planning an equipment fleet becomes more difficult because of these large projects, specifically due to financing and geopolitics.

- **Financing:** The larger the project, the more difficult the financing becomes. Even with support funds of, for instance, the EU, European Investment Bank or Asian Infrastructure Investment Bank, this can result in possible long delays.
- **Geopolitics:** Many projects are no longer solely for local or national use. There is even an active strategy within the EU to construct interconnecting pipelines between different countries to make energy supply routes redundant and make energy supply more reliable. When more countries are involved, this does not make the viability of a project necessarily larger as different countries might have different interests. This can result in years of postponing or even sudden cancellation of projects, bringing uncertainty in when to invest in what equipment.

Technical developments

Although the technical lifetime of a machine is long, the regulations and requirements regarding the machine may change over time. This can be for specific clients or projects, a change in national legislation, or even the change of a global standard. When owning machines there is the need to keep them up-to-date at all times. Examples from recent years are the requirement for a ROPS on heavy machinery and the presence of a load monitoring system in a number of countries. However, in some countries it is not necessarily about the technical condition or specification of machinery; some countries simply block the (temporary) import for construction equipment beyond a certain age.

An equipment owner

To summarise, owning pipeline construction equipment is sometimes necessary but it can be costly, and planning investments for such equipment (which often only has a limited usability) has become increasingly difficult because of the ever-changing conditions that come with extreme large and complicated projects.

In all this, maybe the most crucial factor is that project prices are under huge pressure. This has an effect on the whole chain of construction, not only on contractors, but

on subcontractors, service providers and suppliers as well. When working on a tight budget there is a need for finding creative solutions and cost-effective ways to limit expenses, without compromising the quality of the work and still fulfilling the requirements of the customer.

A fleet without the hard work

What are the alternatives to owning or setting up an extensive equipment fleet without having the burden of financing and maintaining such a fleet, and without the certainty of a consistent workload?

Joint ventures

For large-scale projects, it is common practice that joint ventures (JV) are formed. This enables companies to combine their knowledge, workforce and equipment fleets, increasing their capabilities and spreading the financial risk. For single companies, however, this does not relieve them from the fact that they have to bring technically sound equipment to the JV, which is maintained to the latest standards.

Renting

Although there is always the first impression that it is better to pay for equipment to outright own it, renting provides not only a possibility to be very flexible as a construction company, but is also a flexible way of acquiring machinery in itself.

Technical

A good rental fleet is maintained at all times and complies or can be easily made suitable for any of the current standards, for whatever customer or country. These mostly incur no separate costs, but are included in the monthly rental fee.

Logistical

Any decent rental company should be able to provide its machinery on any location in the world, at any given time, within reason of course. This can relieve the pipeline construction company or pipeline project from the challenging task of collecting all specialised machinery from different parts of the world, and then getting it in the right place at the right time.

Support

At the start of a project, a rental company can provide start-up assistance and an operator and maintenance staff instruction. But more importantly, if there is a breakdown of equipment during a project, the rental company provides the necessary technical support and in a worst-case scenario, even a replacement machine. Therefore, a rental company can provide knowledge and experience regarding construction equipment, but also ensures the continuity of the project.

Financial

When buying equipment for a project, either new or used, CAPEX is sizeable and not backed by any actual project

revenues at that moment. Moreover, such an investment can hardly ever be justified by one single project. Without the security of a next project needing exactly the same equipment, this can bring risk.

When leasing equipment for a project, almost the same risk appears. Although CAPEX is more manageable (often 15% or 20% of the equipment value), here the financial commitment mostly remains beyond the duration of one single project. This means that, although there are no actual revenues from a project anymore, huge monthly payments remain, for a long period of time.

When renting equipment for a project there is almost no CAPEX. There are always the costs for mobilising the machinery, but this is regardless of buying, leasing or renting. A rental contract is only for the duration of a project, with flexible start and end dates – which means that costs and revenues run parallel. The absence of high investments and long-term financial commitments means that the financial risk is minimised.

If, during the execution of a project, a new project is awarded where the same machinery can be used, it is even possible to negotiate the purchase of equipment that is currently on rent. In such a case, it is possible to have a percentage of the paid rental reimbursed, giving the possibility of extending the equipment fleet against more favourable prices.

Conclusion

Owning a basic equipment fleet with specific pipeline construction equipment is mandatory for every pipeline construction company. It provides flexibility and the possibility to mobilise fast for smaller projects. This fleet should, however, be kept up-to-date and compliant with general legislation, and should cover the most common pipeline diameters.

With the volatility in the market and the current domination of large projects, with sometimes huge demands regarding specialised construction machinery, it is inevitable that such a basic equipment fleet is hardly sufficient for most pipeline construction companies.

In such a case, rental of specialised pipeline construction equipment is a valid option. This enables a construction company or a pipeline project to:

- Have machinery that is always up-to-date and compliant with project specifications.
- Upscale and downscale the equipment fleet as required.
- Rely on technical support and back-up machinery from a specialised rental company.
- Clearly oversee the financial commitment.

Rental of equipment can give a pipeline construction company the flexibility to increase and decrease an equipment fleet at any moment to any required size. It can relieve a construction company of a financial burden when in between projects and allows them to focus on their daily business. 