

How would you like to increase compression efficiency whilst reducing emissions and opex?



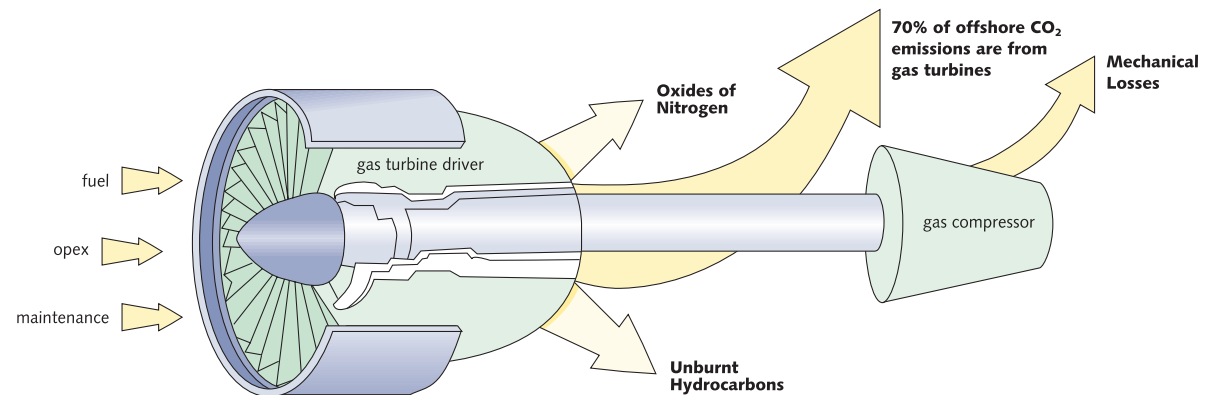
Gas compression is one area where significant performance improvements are often needed. On the surface, your plant may appear to be operating efficiently with little down-time and few problems, but it's likely that your production levels are being restricted by invisible barriers, and your emissions are higher than need be.

Why You Should Act Now

Performance Improvements (PI) Ltd specialises in improving compression plant efficiency by increasing plant capacity, uptime and machinery performance. At the same time we identify and deliver significant reductions in operating costs and emissions, which is especially important considering imminent legislation for offshore.

Opportunities to improve production and to meet your environmental targets may be being missed.

The thermodynamics of compression are complex. Anti-surge control and load sharing is seldom properly optimised, despite the use of sophisticated control and instrumentation systems, which are rarely matched to the rest of the process. We can help to improve efficiency by analysing the whole process from beginning to end, making recommendations for improvements and implementing them quickly and cost effectively. Gas turbine or motor drive - we can help.

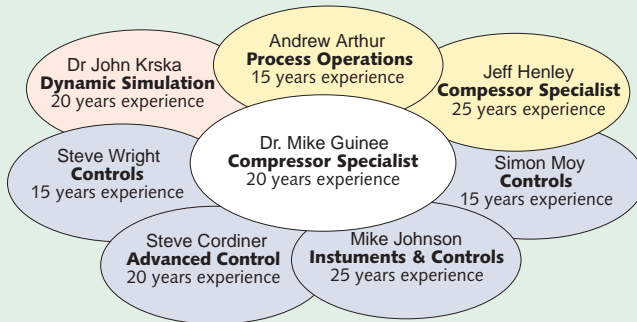


Tomorrow's solutions today.
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How we can help you become more efficient...

Over 150 years experience

The diagram below illustrates how we combine our experience to come up with the most effective recommendations for improving the efficiency of your plant.



Performance Improvements (PI) Ltd.

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... Performance Improvements (PI) Ltd offers a comprehensive, multi-faceted service which draws on the skill and expertise of a highly motivated team of engineers. We specialise in improving compression plant performance using Best Available Techniques (BAT), tailored to every organisation. These techniques include the application of leading edge software for turbine drivers, resulting in up to 15% reduction of CO₂ emissions. The package includes multi-machine optimisation, load sharing, engine condition monitoring and predictive emissions monitoring.

PI provide access to Best Available Techniques in efficient compressor operations through:

- Energy/Emissions Audits
- Surge line optimisation
- Process control/plant tuning
- Plant optimisation
- Maintaining gas turbine efficiency
- Maintenance and operations practices
- Process modifications and debottlenecking
- Training and hands-on coaching.

Our proven expertise is demonstrated in the table below, which shows details of particular case studies

Onshore gas/oil processing	Offshore Platform	Onshore Gas Terminal	Offshore FPSO
<ul style="list-style-type: none"> • Difficulty in stabilising compressor • Excessive flaring 	<ul style="list-style-type: none"> • Major compressor fouling problem • Reduced throughput 	<ul style="list-style-type: none"> • Inability to optimise throughput • Required running standby 	<ul style="list-style-type: none"> • Poor compressor uptime
<p>Input was:-</p> <ul style="list-style-type: none"> • Reconfigured compressor controls • Returned controllers • Modified stabiliser controls 	<p>Input was:-</p> <ul style="list-style-type: none"> • Method to reduce fouling • Reduced pressure losses in system • Debottlenecking of system 	<p>Input was:-</p> <ul style="list-style-type: none"> • Implemented advanced control scheme to enable automatic optimisation of compressors 	<p>Input was:-</p> <ul style="list-style-type: none"> • Redesigned key pressure control loops for reciprocating compressor
<p>Benefits:-</p> <ul style="list-style-type: none"> • Automatic load sharing of compressors • Increased throughput by 20,000 bopd • Reduced flare by 3mm scf/d 	<p>Benefits:-</p> <ul style="list-style-type: none"> • Increased separation efficiency • 10% increase in production • CO₂ savings in excess of 24,000 tonnes 	<p>Benefits:-</p> <ul style="list-style-type: none"> • Compressors optimised for emissions reduction • Over 10,000 tonnes of CO₂ saved per year • Fuel savings of £250k per year 	<p>Benefits:-</p> <ul style="list-style-type: none"> • Increased compressor uptime significantly • Flaring eliminated saving 10 mmscf/d • Increased operator confidence



Smart team, big results, fast!

For further information or to find out how our expertise can benefit your organisation contact Dr Mike Guinee (mikeg@pi-ltd.com) or telephone on +44 (0) 1224 647770 or visit our website at www.pi-ltd.com