Reduce Deferments in Upstream Oil and Gas with P2 Energy Solutions
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why Now? The Business Case for Change</td>
<td>1</td>
</tr>
<tr>
<td>Addressing Production Challenges Through IT Investments</td>
<td>4</td>
</tr>
<tr>
<td>Fundamental Capabilities in a Production Solution</td>
<td>7</td>
</tr>
<tr>
<td>Field Data Capture</td>
<td>10</td>
</tr>
<tr>
<td>Production Data Management Systems</td>
<td>12</td>
</tr>
<tr>
<td>Forecasting</td>
<td>14</td>
</tr>
<tr>
<td>Operational Intelligence</td>
<td>16</td>
</tr>
<tr>
<td>Surveillance &amp; Notifications</td>
<td>18</td>
</tr>
<tr>
<td>Critical Workflows</td>
<td>19</td>
</tr>
<tr>
<td>About P2 Energy Solutions</td>
<td>20</td>
</tr>
</tbody>
</table>
Why Now? The Business Case for Change

Any operator can make money at $100 a barrel.

Fewer can do it when prices fall to nearly half that—and then refuse to move.

Over the short term, operators have cut jobs to survive. The global workforce has shrunk by tens of thousands.

Over the long term, though, more than $500 billion in bonds and loans will come due over the next five years.

By that time, some operators may not exist.

“If oil prices stay at these levels, the number of bankruptcies and distress deals will undoubtedly increase.”

~ Kimberly Wood, Norton Rose Fulbright LLP
With oil prices at their lowest in six years, your focus now is on extending the life of your wells for as long as possible.

But with so few engineers, it’s simply not possible to run your operations the way you’ve always done. Now, a single engineer is responsible hundreds, potentially thousands, of wells.

And to survive—let alone turn a profit—you must do more. You must optimize your processes, increase your productivity, and drive more revenue.

And you need to do it all right now.

“25% Of all oil and gas companies will be using cognitive plus advanced analytics approaches in the oilfield by 2019 to improve performance and production by 10%.”

Reducing deferments is a critical first step.

Operators typically lose 13 percent of their production each year to deferments. Two-thirds of this is due to unplanned downtime.

Even a small reduction in deferments—from 5 percent to 10 percent—can add millions to your bottom line.

Reducing deferments rests on two capabilities:

1. Reducing the length of downtime events through early detection, diagnosis, and rapid remediation.
2. Reducing the frequency of downtime events through leading indicators and preventative activities.

But that’s not all.
To survive in an uncertain market, you must also understand the strategic, financial, operational, and commercial health of your entire organization.\(^2\)

Knowing this means knowing which wells to cap, which to keep, and when to do both. You’ll also have greater overall flexibility to manage through future market uncertainty.

For these decisions you need visibility across your entire organization, and actionable insights delivered to the right people, at the right time.

Increasingly, operators are stepping up their investments in IT to meet these goals. By 2019, IDC predicts that 25 percent of all oil and gas companies will be using cognitive and advanced analytics to improve performance by 10 percent.\(^3\)


These investments are long overdue.

Operators have typically relied on a patchwork of applications and systems they’ve bought, built, or acquired over the years.

Each of these may work well enough on its own. But together, they create a host of problems that prevent you from gaining the visibility and insights you need. For example:

- **Data silos prevent effective decision-making because stakeholders lack complete and relevant data in the right context, at the right time.**
- **Multiple data formats and inconsistent master data lead to gaps in understanding, missed opportunities, and delays filing critical regulatory reports.**
- **Disconnected teams lead to ineffective or reactive asset operation.**

All of these problems lead to poor or delayed decisions that can cost millions in lost opportunities.
The majority of energy companies will require major transformation of their oilfield IT environment by 2017.\(^5\)

**We know where these IT investments should go.**

“It is important to understand and predict drilling and production costs and projected returns to make good decisions about what, where, and when to drill, and which wells to continue producing. This wasn’t as important when oil prices were at $100 a barrel, but it is critical now to make informed decisions that can mean the difference between survival and potential bankruptcy.”\(^6\)


\(^6\) Chris Niven, Business Strategy: The Impact of Lower Oil Prices on Oil and Gas IT Budgets Is Not as Much as Expected. IDC Energy Insights, March 2015.
Fundamental Capabilities in a Production Solution

Your production operations stretch from reserves to revenue. Your IT investments must do the same. Upstream oil and gas is quickly learning what other industries have long known: data-driven operational decisions drive better business results.

A complete Production Solution must provide the following capabilities:

**Field Operations/Field Data Capture (manual & metered):** to record production and inspection data directly from the wellhead, then validate it for accurate reports.

**Production Data Management & Reporting:** to frequently and accurately capture and allocate produced, consumed, and sales volumes back to your monthly volumes for more accurate financial and regulatory reporting.

**Production Forecasting:** to leverage what you know about the well’s historical production to predict the probabilities of future production rates.

**Operational Intelligence:** for the leading indicators and real-time diagnostics that connect people to the data they need to understand trends, identify anomalies, and fix problems with their wells.
"To enable analytics across the enterprise requires a framework to align people, processes, and technologies and an integrated platform to manage critical data to generate immediate, accurate information for informed reporting and decision making and feed KPIs for dashboards and other business intelligence applications and tools for deeper insight into operations performance."7
Operators that deploy a complete production solution distinguish themselves through:

- Flexible and rapid integration of newly acquired assets
- Easy integration for rapid ROI
- Meaningful reports and graphs to meet continually changing operations
- Intuitive user interfaces that are easy for everyone to learn and use

The results?

- Complete visibility into and across your entire production operation to help you leverage the vast amounts of data being generated in your fields
- Accurate, reliable information that everyone can trust
- A broader understanding of the strategic, financial, operational, and commercial health of your organization
- Smarter decisions at every level of your organization to help you survive in today’s unforgiving industry

Production Solutions drive Operational Excellence

*Production Solutions are critical to establishing an operational excellence (OE) program. Now widespread within the industry, OE programs drive significant business improvements. For example:*

- 43% cost savings through lower operational and drilling costs.
- 29% higher availability and uptime.
- 29% more production.

*Driving operational performance in oil and gas, EY, 2015.
Field Data Capture

Accurate field data is the lifeblood of your organization. It’s essential in creating accurate production volumes and filing regulatory reports.

Your engineers are at the very start of the field data capture process, capturing numerical data from your wells, and recording observational information about a well’s condition.

But it’s a slow and difficult process. Instruments are never your only source of data. And there are far too many wells for your engineers to check.
P2 delivers a comprehensive Field Data Capture system. Our capabilities include:

- **Automated Data Capture**: for statistical validation of field metering and event generation
- **Route & Task Management**: to proactively manage field operators’ work
- **Manual Data Capture**: to enter and validate field measurements and meters
- **Field Forms**: for periodic and ad hoc inspection, and regulatory and forms entry
- **Electronic Logbooks**: to capture and manage shift commentary, issues, and handover
- **Well Test Capture**: to consistently capture, calculate, and analyze well test data
Production Data Management Systems

Everyone in your ecosystem relies on production data, whether it’s to better manage your portfolio or to optimize opportunities at the well head.

Your production data must be timely, accurate, and accessible to meet a variety of reporting needs. But meeting all three goals can be a challenge. Data sits in—and moves through—different systems, at different rates, and in different formats.

Maximum efficiency demands common definitions of shared data across all of your wells and assets. Validated measurement data. And reliable—and auditable—hydrocarbon allocations.

Operators without these in place struggle with inefficiencies, inaccuracies, and costly delays.
P2 helps you meet these challenges with powerful Production Data Management capabilities. These include:

- **Operational Data Store**: to integrate data from multiple sources and support collaborative operations and reporting

- **Hydrocarbon Accounting**: to allocate liquids and gas to producing formations

- **Sales & Production Reconciliation**: to drive accurate data from production through to revenue

- **Oil & Water Management**: to manage run tickets, inventories, and liquid movements

- **Regulatory Compliance**: to reduce risk associated with producing regulatory findings
Forecasting

Falling oil prices have brought forecasting to the forefront of many operations teams. As their emphasis shifts from exploration to optimization, operators must understand the potential of their existing wells over a longer period of time.

Small forecast variances can drive significant improvements—or bad decisions. But deterministic tools and methods are ill-suited to unconventional oil and gas.

Further, different groups in your organization may use their own methods and models. Engineers typically spend more time tracking down data than making smart decisions. Executives lack accurate numbers, and wells go unchecked.
Automatic, accurate, repeatable, and unbiased, P2 Forecast is revolutionizing forecasting in upstream oil and gas. With the added value of BZ Machine from P2 partner BetaZi, P2 Forecast lets you:

• **Run full probability distributions**, including the P1 to P99 spread

• **Create predictive analytics** directly from your forecast data

• **Share forecasts** with other functions such as production operations, land, and marketing

• **Reliably forecast** future production volumes

• **Support reserves** and economic modeling

• **Integrate forecast** data into your existing operational intelligence systems

• **Augment your standard economic packages** with baseline data
Operational Intelligence

Every well in your field is a business on its own. And the data each one provides is as important as the resources it draws from the earth.

Your engineers rely on Operational Intelligence to monitor each well’s performance. Your IT, Finance, and Operations teams rely on it to fuel smarter decisions about your investment portfolio.

But in the modern oilfield, a single engineer is responsible for thousands of wells. And IT systems are better-suited for capturing and storing data than they are producing insights.
Operational Intelligence from P2 connects your people to your data. Our powerful capabilities include:

- **Data Dictionary**: to connect to your data sources and provide a single source of truth

- **Performance Calculations**: to deliver leading indicators and performance metrics with self-service calculations

- **Business Insights & Operational Diagnostics**: for dashboards, real-time analytics, and production data diagnostics
Surveillance & Notifications

With thousands of wells in operation, it’s essential to identify issues and events. Keeping a constant watch on the condition and performance of your assets is critical. But current approaches are usually time-consuming, expensive, and unreliable.

Key aspects of Operational Intelligence, Surveillance and Notifications help your engineers in the field predict and prevent asset losses and failures.

**Operational Intelligence solutions from P2 can keep you informed of issues and help you prioritize actions. Our capabilities include:**

- Self-service configuration and team workspaces
- Real-time monitoring of thousands of assets
- Prioritization of detected events
- Event diagnostics and root cause analysis
- Notifications and workflow
P2 Production Solutions provide templates to help you monitor these critical workflows.

**Compressors**
- Downtime
- Optimization
- Performance Monitoring

**Facilities & Equipment**
- Corrosion Monitoring
- Loss & Availability Accounting
- Operating Envelopes (OEE)
- Shutdown Reporting
- Utilization of Availability

**Tanks**
- Run Tickets Tracking Analysis
- Tank Inventory
- Tank Level Notifications
- Virtual Metering

**Data QA**
- Estimated vs. Allocated
- Meter & Measurement Analysis
- SCADA vs. FDC
- Well Test Compliance
- Well Test Validation

**Wells**
- Cumulative Production Analysis
- Decline Analysis
- Downtime Detection & Analysis
- ESP Surveillance
- Injection Compliance
- Normalized Plots
- Performance Curve Generation
- Plunger Lift Monitoring
- Production Forecast Analysis
- Pressure Transient Analysis
- Production Rate & Phase
- PVT Analysis
- Production Status
- Water-Oil Analysis
- Well Performance Analysis
About P2 Energy Solutions

Production Solutions from P2 Energy Solutions bridge the gap between what you need and what you have—providing you with new capabilities while augmenting your existing investments.

Our open data model connects to your current systems—and connects your back office to the field. A common configuration model drives rapid deployments of new capabilities.

And our modular approach means you can deploy our solutions at your own rate.

“We’re operating more efficiently now. [P2 Production Solutions] give everyone the opportunity to really be involved in what’s going on on the field and react more quickly. All the stakeholders—engineering, operations, production, the corporate office—are taking more ownership because they have that ability.”

~ Connie Ellis, Manager, Production Regulatory Administration, Energen Resources
Take control with P2 Energy Solutions

P2 is the only provider to offer an end-to-end, integrated business solution, whether you’re a new operator growing through the drill bit, or an established player.

Look to our 25 years of experience, our presence in 40 percent of all the wells in the U.S., and our service to more than 200 customers around the world.

7 out of the top 10 producers in the Bakken use P2 Production Solutions.

6 out of the top 10 producers in Eagle Ford, Permian, and Uinta use P2 Production Solutions.

5 out of the top 10 producers in Anadarko Basin use P2 Production Solutions.

400,000 wells production managed by P2 production solutions.

320,000 of 1.1M active U.S. wells in eVIN, ProCount, Carte.

13,000 field operators use eVIN.
Empowering The People Who Power The World

For more information, please visit www.p2energysolutions.com