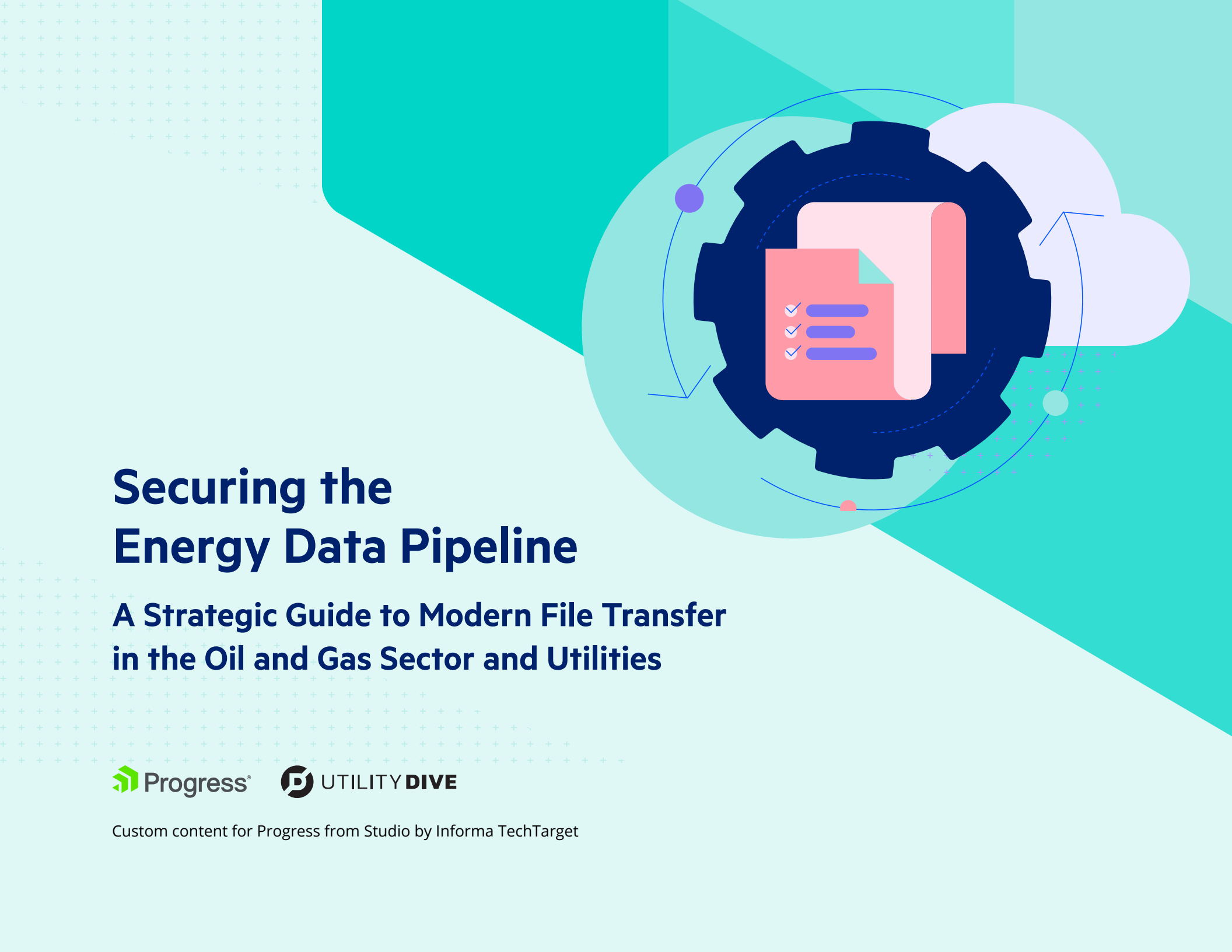




Securing the Energy Data Pipeline

**A Strategic Guide to Modern File Transfer
in the Oil and Gas Sector and Utilities**



Custom content for Progress from Studio by Informa TechTarget

There are myriad ways to describe the transformations reshaping the energy industry today.

Oil and gas companies are prioritizing efficient production across geographically dispersed sites and extensive partnership ecosystems. Utilities are scrambling to accomplish multiple complex and interrelated objectives simultaneously—from the integration of distributed energy resources (DERs) and grid modernization to meeting the unprecedented spike in electricity demand from data centers powering artificial intelligence (AI) and new manufacturing facilities. Renewable energy continues to scale rapidly, challenging utilities' and operators' ability to manage a grid with growing amounts of intermittent generation.

The challenges energy companies must navigate to successfully transform may seem disconnected and industry-specific. But they share one key ingredient: data. Indeed, data from a dizzying number of sources is needed for utilities to reliably manage an increasingly distributed and complex grid, perform predictive maintenance on aging infrastructure and tap the potential of AI-powered analytics to plan and invest in. Drilling reports from well sites, turbine telemetry, meter readings, invoices and work orders from contractors, as well as countless other sources of data are assets that increasingly determine the success of energy companies.

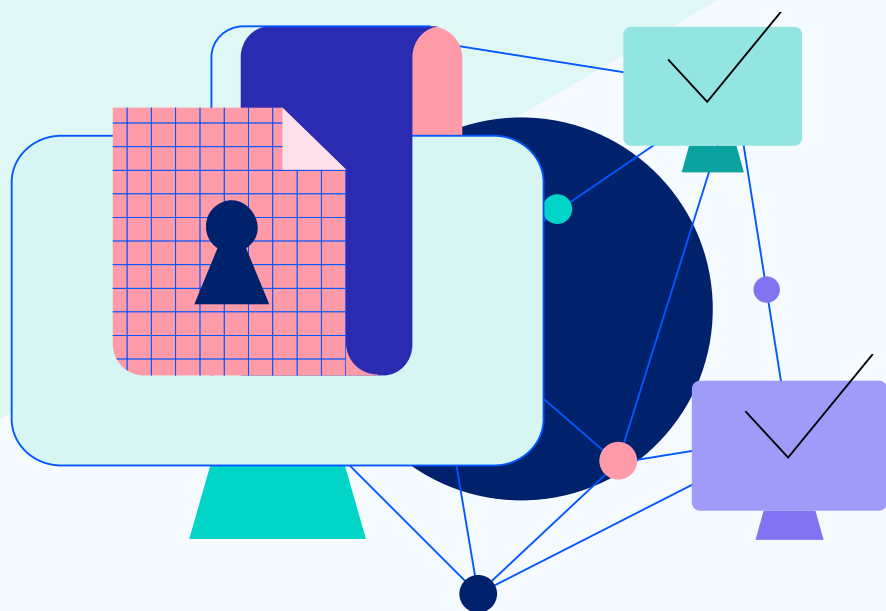
But here's the problem: To fully tap the transformative potential of data, energy companies must be able to move it where data needs to go. And while energy companies are constantly modernizing, many are learning that the tools they rely on to move and share data are hopelessly archaic.

And the consequences of getting data movement wrong are far from abstract. Failure to comply with regulations and frameworks outlined by NIST, ISO 27001 and the North American Electric Reliability Corporation's Critical Infrastructure Protection (NERC CIP) standards can trigger failed audits and hefty fines. Production and revenue take a direct hit when data about pipeline pressures and temperatures isn't reliably fed into billing systems that create invoices.

Sophisticated cyberattacks on critical infrastructure are escalating rapidly. And the partner ecosystem that is increasingly essential to energy operations poses one of the most significant vulnerabilities. In fact, 45 percent of energy sector breaches are linked to third-party vulnerabilities. If the systems governing these data exchanges lack key security and privacy measures in place, energy companies risk failing audits, violating SLAs, exposing operational data and increasing the likelihood of a third-party breach.

**“The scripts may be working,
but they don’t have any visibility.
IT teams don’t have a tracking
mechanism or a reporting mechanism”**

Georgi Nisterov, Inside Account Manager, Principal for Progress Software, who works with energy companies across Europe, the Middle East and Africa (EMEA) to implement modern file transfer solutions.



From IT Afterthought to Strategic Asset

File transfer is not an insignificant back-office IT-only concern; it connects directly to the digital transformation and modernization energy companies must drive to achieve their most fundamental strategic goals. Done right, modern file transfer makes data movement a competitive advantage rather than a worrying and inefficient vulnerability.

Most energy companies don’t have modernized file transfer. Instead, they rely on scripts, which is code that automatically moves a file from one location to another on a specified schedule or when a condition or metric is met.

But scripts are far from perfect. One of the most obvious deficiencies is that it is specialized code written by an employee who may have left the company years ago. When the script breaks or business needs inevitably change, there’s nobody to fix it. Besides dependence on a single person’s expertise, a reliance on scripts to transfer files fails to provide companies with critical visibility.

Also, scripts don’t provide visibility about when records are transferred, who initiated them and received the transfer, who accessed the files and whether the transfer succeeded.

In the highly regulated energy business, this is a big problem. Companies obligated to comply with NERC CIP and other frameworks must be able to show regulators and auditors who accessed files, when, which IP address it originated from and what browser they used.

The lack of a granular audit trail to satisfy regulators and auditors elevates the risk of fines and penalties. But faulty scripts can also have operational consequences. For example, alarms are not triggered when scripts stop working when a server is updated or a partner modifies a system—without any notification. Broken scripts are only apparent when their operational or business impacts become too obvious to ignore and require time and effort to fix. Pipeline companies, for instance, use scripts to move pipeline data—like pressure, temperature and flow rates—to a billing system that generates invoices. If a script breaks, the invoice either never goes out or goes out with faulty or incomplete data. This can translate to lost revenue or hours of subsequent manual effort to reconcile the production data with the billing department.

Oil and gas companies with sprawling operations need to move data between operational technology (OT) systems at field and partner sites and informational technology (IT) systems at headquarters. This means energy companies need a whole ecosystem of individual scripts, which requires writing new code or modifying what's in place whenever a new workflow is added. Not only does this depend on access to the expertise of the staffer who originally wrote the script, it also makes scaling a huge challenge. As Nisterov notes, “You can't scale a script with a couple of clicks of the mouse.”

While scripts are used widely, other solutions like unsecured File Transfer Protocol (FTP) servers and even USB sticks are also still used. There are reasons for this. Utility and energy companies have wide geographic footprints, responsible for managing data across highly distributed facilities. Both for security reasons and because of their remoteness, some of these facilities lack internet connections.

Andrea Jensen, Inside Account Executive, Senior at Progress Software, has worked with oil and gas companies across the U.S. to modernize their file transfer capabilities and has encountered several that depended on USB sticks to share production data from wells and other field sites with company headquarters.

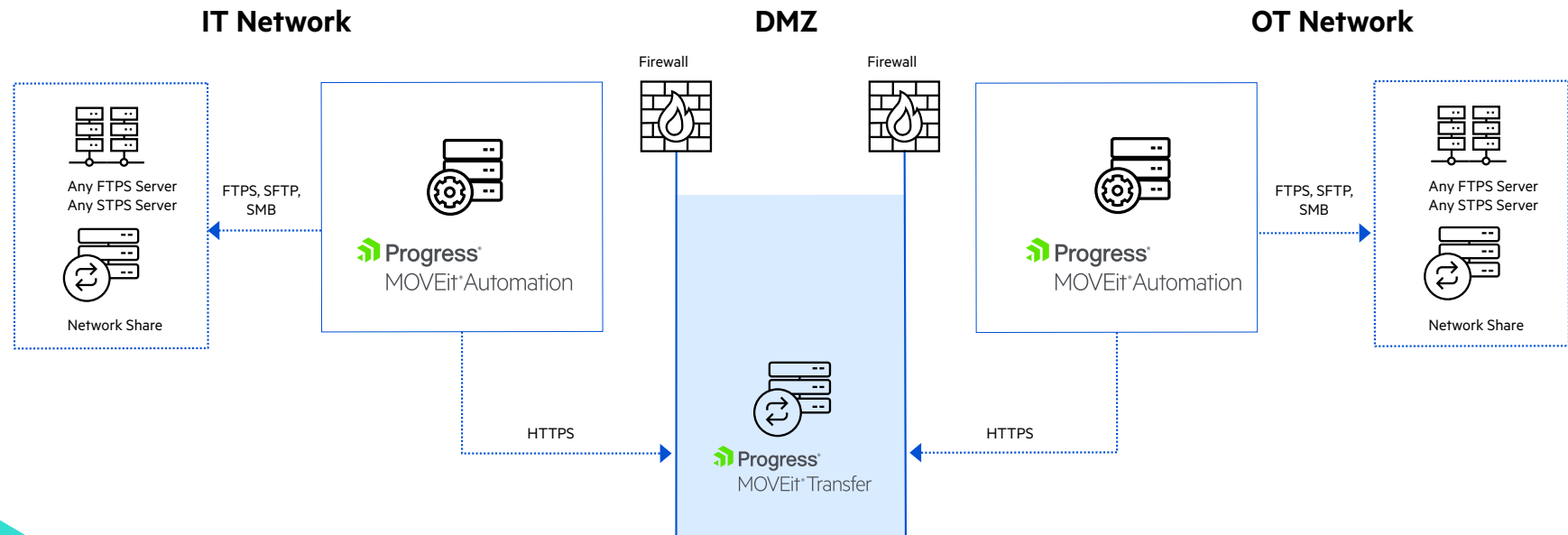


“They’re transferring the data via USB stick because they don’t have internet access and still have to get data from one place to another. It needs to be kept secure so it doesn’t get into the hands of a threat actor. But USBs can be lost and provide no visibility about when transfers take place and who sends and receives files.”

—Andrea Jensen, Inside Account Executive, Senior
at Progress Software



A Better, More Secure and Scalable Way to Move Data



Scripts, unsecured FTP servers and USB sticks lack the visibility, security, scalability and efficiency required for energy companies today. Many companies learn this the hard way, when they fail an audit or can't easily comply with important regulations.

This recognition can be an opportunity to pivot to solutions designed specifically to handle the complex, high-stakes file transfer needs of energy companies. [Progress® Automate MFT](#) and [Progress® MOVEit®](#) software replace the fragmented, invisible and vulnerable ecosystem of scripts, FTP servers and USB sticks and create a centralized platform that provides requisite visibility, security and scalability.

Automate MFT is the cloud-native file transfer automation engine that offers centralized orchestration and local, site-based execution. For hybrid energy and utility organizations, Automate MFT securely transfers files on a schedule without scripts and seamlessly scales as field locations or partners are added.

The MOVEit MFT solution has two core capabilities that are uniquely suited to the needs of energy companies with extensive field operations and primarily on-premises deployment preferences. The first is Progress® MOVEit® Transfer, a secure, encrypted hub where IT and OT teams can deposit and retrieve critical files.

Jensen describes the hub as a demilitarized zone (DMZ), a buffer between IT and OT networks. MOVEit software encrypts files in transit to the hub, while they are in the hub and once they are retrieved from the hub and moved where they need to go.

“As the OT transfers the file into MOVEit Transfer and is waiting to be picked up, it’s sitting there encrypted so there isn’t any visible text available to anyone,” Jensen said. The result: Files moving between IT and OT and vice versa are protected at every stage of their journey.

Progress® MOVEit® Automation replaces the awkward mix of uncoordinated scripts by orchestrating automated file transfers through a visual workflow engine that can be monitored and modified without specialized coding skills.

Taken together, MOVEit Transfer and MOVEit Automation give energy companies something scripts and FTP servers never could: a single, governed environment where nothing moves without a record and nothing fails without an alert.



While the workflows across energy industry sectors vary, the underlying need for security, automation and auditability remains constant.

For example:



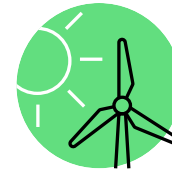
Oil and gas:

Drilling reports, well data and production records must move securely from field sites to headquarters for billing, regulatory reporting and analysis. Automate MFT and MOVEit automate these transfers while maintaining critical IT/OT security boundaries.



Electric utilities:

Meter readings, operational data from grid sensors and information from grid-edge distributed energy resources (DERs) flow constantly from assets to centralized utility systems. Automate MFT and MOVEit software provide audit-ready evidence for NERC CIP compliance and support the real-time data flows needed for grid modernization.



Renewables:

As solar and wind generation become more prevalent, data about asset performance, inspections and regulatory compliance must make its way to grid operators, utilities and regulators. Automate MFT and MOVEit enable automatic transfers with full audit trails or alerts when they fail.



From Data Pipeline to Digital Advantage

Energy companies understandably approach change cautiously. A common concern that utilities, oil and gas companies raise about modernizing their file transfer is that the transition risks disruption.

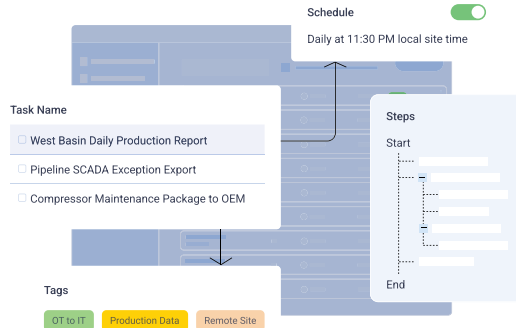
While this hesitation is understandable, it should not prevent energy companies from capturing the immediate and long-term benefits of sophisticated file transfer. For example, Automate MFT and MOVEit software can be production-ready in a matter of hours, not weeks. So companies that want to maintain existing scripts during a transition period can do so because they can be easily imported into Automate MFT or MOVEit Automation even as new workflows are developed. Adding new partners and vendors takes minutes; each gets their own isolated folder structure and access controls, eliminating any risk of data cross-contamination.

Efficiency and productivity gains are possible soon after implementation. Companies that shift from scripts to file transfer automation from Progress [report saving anywhere between five and ten hours](#) per day because they eliminate the time spent identifying and monitoring that transfers happened as expected and troubleshooting problems when they occur. For example, [an encrypted file](#)

[delivery that once took three hours can be completed in just 15 minutes](#). Given the high volume of data transfers between field sites, partners and regulators, energy companies can reap substantial time savings. The staff time saved can then be redirected to more valuable work.

Automate MFT and MOVEit software support the critical data foundation energy companies need to modernize. While utilities and oil and gas companies' immediate priority may be to build a secure and efficient transfer system for meter data and drilling reports, that same data exchange infrastructure can also inform predictive maintenance algorithms and real-time grid analytics.

Regardless of the digital transformation ambitions energy companies have—whether managing a complex grid or optimizing production across sites—the common ingredient is the same: data that moves quickly, securely and at scale. Energy companies don't need to wait for a failed audit or an incorrect invoice to begin building that essential data foundation. The infrastructure that makes it possible is available today.



Next Steps: How to Start Securing and Automating File Transfers with Progress

Fragile, manual and difficult-to-audit file transfer processes elevate risk, reduce the speed and confidence of decision-making and unnecessarily waste staff time that could be devoted to more valuable work. Progress secure file transfer solutions introduce a more resilient, governed approach to moving critical data.

The result is a stronger foundation for secure data exchange across IT and OT, improved visibility and compliance readiness and a more modern path to supporting the workflows that keep energy operations running.



Learn more about Progress secure file transfer for energy and utilities.

About Progress Software

[Progress Software](https://www.progress.com) (Nasdaq: PRGS) empowers organizations to achieve transformational success in the face of disruptive change. Our software enables our customers to develop, deploy and manage responsible AI-powered applications and personalized digital experiences with agility and ease. Businesses of all sizes get a trusted provider in Progress, with the products, expertise and vision they need to turn AI disruption into a competitive advantage. Millions of developers and technologists at hundreds of thousands of organizations depend on Progress every day. Learn more at www.progress.com.



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