



Production Technology

Subject Matter Expert and Technical Assurance Services

Production
technology

SME case 1

SME case 2

SME case 3

SME case 4

SME case 5

TA case 1

TA case 2

Supporting
our Clients

Production Technology Expertise

“Production Technology brings the fluids from the reservoir to the surface – or vice versa.”



Our Production Technology service supports well stock stewardship of multiple lifecycle scopes. We define scope and specify requirements from the sand face to the well choke.



Risk based decisions underpin all our services, from specifying well tubing and artificial lift through well integrity, production optimization, forecasting to well plug and abandonment.



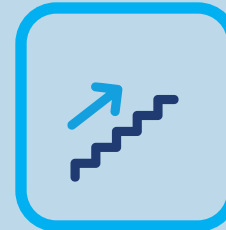
The key service differentiator is our aligned Pecten network of highly competent engineers with real-life deep understanding of our discipline and passion for effective delivery to support your project.



Consistent training and experiences originate from world-renowned flagship projects with best-in-class networked teams, resulting in world-class solutions and top value through an intuitive approach.



We have expertise in both highly complex challenging environments (High-Pressure High-Temperature deep water projects) and assets where efficiency is paramount (onshore tight gas).



We provide broad project spectrum skills, allowing us to scale our approach according to the needs, which makes our service highly effective in your environment.

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Production Technology Expertise

Subject matter expert (SME)

- Work is conducted by proven skilled experts in a wide variety of technical subjects in the discipline of Production Technology.
- The SME is well versed in subjects through extensive experience, underpinned by best-in-industry training.
- The experts have access to an extensive industry network to assist in maturing the fit-for-purpose solution of the desired subjects.



Technical assurer (TA)

- We provide objective 3rd party review or auditing of technical work in the discipline of production technology.
- The TA provides assurance in the discipline of production technology, based on extensive experience enabling them to ask the right questions and conclude on an assessment in an effective manner.
- Confirm technical design maturity of your critical project tollgates and identify succinct credible follow-up actions.



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Subject Matter Expert support - Case Study:

Artificial lift improvement

An onshore brownfield tight gas development (45PJ/yr.) suffered from liquid-loaded wells due to water production combined with low reservoir pressure and well scaling. As a result of SME support, improved the understanding and implemented new-to-asset velocity string and capillary string artificial lift technologies combined with mechanical zonal water shut-off.

Understanding, categorizing, and ranking well behaviour was translated into the preferred lifting techniques. With our customer, we implemented concept-proof candidates which provided confidence, leading to accepting and adopting a manufacturing-style operational intervention sequence and campaign. This resulted in economically bringing loaded wells back online and successfully arresting the production decline to date.



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Subject Matter Expert support - Case Study:

Perforation Optimization

The client had decided not to install sand management at surface on their drilling and production platform but were aware of weak reservoir sands to fail when depleted.

The Production Technologist Perforation Optimization SME was brought in to model in detail the potential for sand production and to design an optimized perforation program to mitigate the risk of early sand production. The design provided optimum production from the high rate gas field and was effective in preventing early sand production. The work was carried out without any increased cost in perforation from the basic program.

The SME worked closely with the development team adjusting the perforating designs with different well profiles as drilling progressed. Support included auditing facilities, charges & gun materials and testing charges for performance under API RP 19B Section 2 stressed rock charge testing protocols.



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Subject Matter Expert support - Case Study:

Sand management

As SME provided intimate knowledge of sand control methodology selection, including technology development and implementation. A Deepwater prospect offshore Brazil required both sand control and artificial lift of heavy oil.

The production technology expert guided early system selection and further development of a big bore in-well ESP lift system with bypass technology allowing a single trip shunt-tube gravel pack for well test preceding further field development.



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Subject Matter Expert support - Case Study:

Quantitative Risk Analysis

A flagship ultra-deep water High-Pressure High-Temperature green field development required multiple well system components to be re-designed and developed to cater to extreme, world-first operating environment and expected capacity of 175,000 barrels of oil equivalent per day (boe/d).

As the SME guided product development through a series of Failure Mode Effect Criticality Analysis (a protocol used for complex product development including NASA) to ensure that lifecycle risks were quantified throughout the development process systematically and effectively. As a result, the field was brought online ahead of schedule, below budget and is successfully producing today.



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Subject Matter Expert support - Case Study:

Well decommissioning and restoration

A brown field from the eighties showed systemic well integrity issues on its stock. After ensuring that risk of the bad actors was managed appropriately, the production technologist reviewed the well portfolio, categorized, and prioritized the same to justify the company's first abandonment campaign.

The SME assisted in defending and adjusting scope and expenditure throughout P&A maturation to management, and operational teams and regulator, resulting in successful completion of the pilot campaign and leading to a streamlined abandonment strategy.



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Technical Assurance – Case Study:

Well Integrity

Wells in an onshore gas-field were equipped with legacy safety features on all wells, which were notoriously unreliable and hence the effectiveness to manage risk highly disputable. An integrated risk review was conducted challenging the status quo, led by the production technologist. This resulted in justifying a simplified new well design, more efficient intervention practices and updated company standards, without increasing risk (associated cost saving USD10M).

As Technical Authority for PT assured the outcome of the integrated risk review conducted by the local PT, technically assured throughout the project and steered where necessary to ensure alignment with government regulations and risk to ALARP. The assurance gave the company confidence to applying the new standards.



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Technical Assurance – Case Study:

PT assurance in FDP

A field redevelopment was matured by its integrated subsurface-, wells- and facilities team. This resulted in a 20 infill oil- and water injection- well campaign (USD350M).

The TA for PT provided assurance of the team's log based well target selection refinement and perforation depth confirmation as well as assuring projected production forecast changes, highly dependent on well tie-in schedule prognosis. A sound understanding of the entire system is key.

As a result of the assurance provided the project team could confidently progress according to schedule and the waterflood campaign was delivered on time and within budget.



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We are a network of highly experienced professionals with deep skills and knowledge that span the energy value chain, from producer to consumer.

We are united by our desire to change the world of energy for the better by applying our experience to accelerate the energy transition.

What do we do?

We help businesses to thrive through the Energy Transition in the most sustainable and profitable way. Our guidance and support are good for business, good for customers, and good for society.

We provide support in a range of formats, from short-term consultancy projects, through to longer term assignments. We don't just guide and advise; we can help you find the expert resources you need for temporary and permanent roles in your company.

What makes us different?

Quite simply, our huge reservoir of global experience equips us to provide you with guidance and support based on real life knowledge. We know the challenges that you face because we've been there, and we know the importance of working with expert partners that you can trust.

Our support is just one click away www.pectenetwork.com

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