

# REFERENCE CASE REFINERY



## Independent inspection services for Greek refinery in conversion to low sulfur diesel

When Hellenic Petroleum, Greece’s largest oil processing company, decided to convert its second largest fuel plant to output low-sulfur diesel, independent inspection services were required to ensure components from production through to installation complied with international regulations and requirements. That’s why they turned to TÜV Rheinland.

Basic facts	
Client	Hellenic Petroleum S.A.
Involved companies	J/V EAMT (EKME – ATERMON – METKA – TMUCB ) METRON PENSOTTI FCL SPIG J/V TERSIC (TERNA – SICES)
Timeframe	July 2009 – ongoing
Project location	Elefsis, Attiki, Greece
Main services	<ul style="list-style-type: none"> <li>▪ Inspection Services for the upgrade of the Elefsis Refinery</li> <li>▪ Installation of new units</li> <li>▪ Auditing services for certificates of compliance</li> <li>▪ Non-destructive testing (NDT) and destructive testing</li> <li>▪ Welders qualifications</li> </ul>
Involved regulations/standards	<ul style="list-style-type: none"> <li>▪ EN 13480 – Metallic Industrial Piping</li> <li>▪ ISO 8501-1</li> <li>▪ PED – Pressure Equipment Directive (97/27/CE)</li> <li>▪ ERUP (Elefsis Refinery Upgrade Project) specifications</li> <li>▪ API, SSPC, ASME and ASTM standards</li> </ul>

### Initial situation and requirements

Hellenic Petroleum S.A., Greece’s largest oil processing company, accounting for three quarters of Greece’s total refinery capacity at its three plants, decided to convert its second largest site, called “Elefsis Refinery”, to the production of low-sulfur diesel. In order to achieve this goal, compliance was required with national, EU and international regulations and standards.

## Solutions, results

Due to our strong international presence and extensive experience in this field, TÜV Rheinland was the preferred choice for Hellenic Petroleum.

Upgrading the Elefsis Refinery was a mammoth task, requiring compliance with all current environmental regulations and the fulfilment of technical specifications with regard to both function and cost effectiveness. In order to furnish Hellenic Petroleum with the full benefit of our wide array of inspection services, we provided both on and off site support.

Our approach consisted of daily inspections and tests on site for everything from welding procedures to NDT and mechanical tests as well as hardness, ferrite and particular material identification (PMI) tests. In addition, we provided witnessing for plumb and levelling equipment, installations of rotating equipment and internal and refractory equipment, as well as providing acceptance tests.

With the production of new components for use in the conversion of the plant to low-sulfur diesel fuel, we provided inspection services at the site of production, travelling extensively between sites of manufacture, utilizing our experts across a range of engineering fields and countries. Our shop, field and notified body inspections and services ensured compliance of components before installation at Elefsis Refinery.

We also provided inspection services at Elefsis Refinery, covering the full upgrade of the plant and overseeing the installation of new units for the processing of low-sulfur diesel fuel.

Finally, we audited certificates of compliance for equipment and valves, ensuring that the technical documentation would enable achievement of CE marking for the piping and units utilized in the upgrade of the plant.

### Did you know?

Elefsis Refinery will meet its own energy needs using the low-emission gases that emerge as a byproduct during the production process of low-sulfur diesel.

### Benefits for the client

TÜV Rheinland helped Hellenic Petroleum to:

- Achieve the right results using a range of international experts with the knowledge to audit, examine and control on site and off site production.
- Gain the maximum assurance of quality for all inspection and auditing works carried out.
- Successfully manage international coordination and cooperation in order to test the quality and compliance of all components manufactured abroad as per specifications and requirements.

### Your contact:

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### About TÜV Rheinland:

Founded 140 years ago, TÜV Rheinland is a global leader in independent inspection services, ensuring quality and safety for people, the environment, and technology in nearly all aspects of life.

We inspect technical equipment, products and services, oversee projects and help to shape processes for companies around the world. Since 2006 we have been a member of the United Nations Global Compact to promote sustainability and combat corruption.

As one of the leading provider for inspection services in the oil and gas industry, we can help you to reduce risk, prevent material defects and ensure maximum safety and optimal functions of your plants and pipelines. Throughout the entire project we can support you with certification, inspection and consulting services and help you meet your obligations for all applicable standards and regulations.