

## The benefits offered by



### TOTAL ANAC INDUS

is an in-service oil monitoring solution to help you optimize drain intervals and extend the service life of your equipment.



This solution aims to improve the reliability and performance of your equipment.



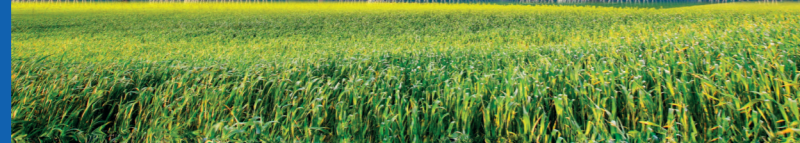
For turbines, in particular, Total offers **ANAC TURBINE** standard to help you monitor the key parameters that are critical for their operation:

- **Water content (Karl Fischer Method) from 10ppm** to detect accidental water pollution, ideal for hydro, steam, or gas turbines operating in a humid environment.
- **AIR option (air release and foaming)** to prevent wear and control malfunctions caused by air contamination in oil, regardless of turbine type.
- **MPC option (Membrane Patch Colorimetry)** to detect the presence of degradation by-products, varnishes and lacquers on critical components of gas turbines.



Our teams are dedicated to assisting you with turbine oil monitoring and commissioning:

- **Flushing and first fill** of your turbine
- **Oil filtration**
- Particle counting and monitoring of oil cleanliness classes
- Water contamination treatment
- Prevention of varnish build-up
- Waste oil management



### A major player

With our production, supply chain and commercial presence in more than 150 countries, we deliver a full range of lubricants.

### Support and partnership

Thanks to local technical presence, we provide a high level of service to optimize your Total cost of Ownership.

### References & OEMs

TOTAL Lubricants cooperates with equipment manufacturers to create high-technology products for optimal performance and production of your machinery.

5 good reasons for choosing TOTAL

### Innovation & Research

TOTAL invests in biotechnologies to find the most suitable components to reach energy efficiency through formulations designed in our Research Centers.

### Quality and environment

TOTAL Lubricants ISO 9001 certification is the guarantee of a long term commitment to quality. From the initial design stage, our R&D teams seek to develop products that minimize toxicity risks and environmental impact.

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Safety Data Sheets are available at [quickfds.com](http://quickfds.com)

[lubricants.total.com](http://lubricants.total.com)



## PRESLIA Power up your performance with our turbine oils



11/2018 - TOTAL Lubricants SA 532 006 454 FCS Nanterre - Photos: 123RF, Siemens Copyright - Design: GOLDEN DESIGN





For over 40 years, **TOTAL Lubrifiants** has been designing and developing innovative and high-performance products.

With the benefit of our extensive experience with original equipment manufacturers, **Total offers you a complete range of lubricants and services for all turbine types: hydro, steam, gas, combined-cycle, or aeroderivative gas turbines.**

**RAMP UP TO FULL CAPACITY WITH PRESLIA!**



## A local player, a worldwide presence.

**Total Experience** means you benefit from our locally based expert support and strong know-how.

It also means you have direct access to our **high value-added services for turbines**, including oil monitoring and implementation of our onsite turbine filling package.

You can rely on **logistics support** and **personal assistance from our 130 affiliates** to carry out your projects.

**Total Commitment** means you can count on us to continually produce **more innovative and efficient products** that respect people and the environment. By choosing Total, you share in our commitment to better energy.

## A full range of products for all your needs.

Total closely monitors technological developments and new turbine operating profiles. We have developed a **range of advanced, cutting-edge oils** to cover all your needs:

- Oil drain interval extension with **PRESLIA GT**
- Protection against varnish and degradation by-products with **PRESLIA EVO**
- Respect for the environment and aquatic systems with **BIOPRESLIA HT**

By choosing Total, you are assured of **manufacturer-approved products** that have a proven track record in the field.

Customers who trust our products include: GENERAL ELECTRIC, ALSTOM, SIEMENS, DOOSAN SKODA, ANSALDO...



## OEMs SPECIFICATIONS

TURBINE OILS



### PRESLIA

- Prevents equipment wear.
- Suitable for all types of power stations.

#### BENEFITS

#### Superior equipment protection.

#### Did you know?

Air contamination in the oil can seriously damage your equipment and cause pressure drops in pumps due to the cavitation effect. When oil ages, it inevitably loses its air release properties. That is why it is crucial to formulate ultra-high-quality turbine oils with optimal air release capacity from the start.



### PRESLIA GT

- Excellent oxidation resistance.
- Long-life oil.
- Use under severe conditions.

#### BENEFITS

**Reduction** in maintenance costs. Suitable for **combined-cycle power plants** and modern land-based gas turbines.

#### Did you know?

PRESLIA GT has demonstrated excellent oxidation resistance, achieving a result significantly higher than 10,000 hours TOST life (Turbine Oxidation Stability Test). The TOST test is directly related to the oil lifetime.



### PRESLIA EVO

- Excellent thermal stability.
- Prevents varnish formation and deposits.

#### BENEFITS

**Extends critical components service life** by preventing the varnishing of bearings and servo-valves. Suited to modern high-efficiency gas turbines, **flex systems** and peaking power plants.

#### Did you know?

This new generation oil has proved to be effective in preventing deposits, with outstanding results in specific trials under high thermal stress (Dry TOST and MAN LTAT).



## MINERAL

### AZOLLA AF

- Good filterability.
- Prevents build-up deposits when accidentally contaminated by water.
- Excellent oxidation resistance.

#### BENEFITS

Optimizes the **reliability** of the **electro-hydraulic control system** in steam turbines.

#### Did you know?

Manufacturers recommend zinc-free hydraulic oil for use in steam turbines. Zinc-based additives can degrade in the presence of water and form build-up deposits.



EHC FLUIDS

### HYDRANSAFE FR EHC

- Turbines requiring phosphate ester fluids (HFDR class).
- No toxicity for operators.
- Highly fire-resistant.

#### BENEFITS

**Safe** for your facilities and operators.

#### Did you know?

Conventional HFDR fluids may contain carcinogenic, mutagenic and reprotoxic substances. Total prohibits the use of these compounds, preferring a safer, more health-friendly fluid: Hydransafe FR EHC.



## SYNTHETIC

**PRESLIA**  
For steam, gas, combined-cycle turbines and turbocompressors. **APPROVED**

ANDRITZ DOOSAN GENERAL ELECTRIC GEK 27070, GEK 28143, GEK 46506, GEK 32568 MAN ENERGIE ME-TTS 001/18/92 SIEMENS Turbo AB - MAT 812101/02/ 06/07/08/09 SIEMENS Turbomachinery 1CW0047915 VOITH HYDRO	ALSTOM HTGD 90117 ALSTOM HYDRO HTWT 600050 ANSALDO DOOSAN SKODA, TURBINY PLZEN FUJI ELECTRIC steam turbine HTC Hangzhou steam turbine MAN Turbo SPD 10000494596 SIEMENS POWER TLV 901304 & 05 SOLAR ES 9-224W Class II TOSHIBA steam turbine
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**PRESLIA GT**  
For gas, combined-cycle turbines and turbocompressors. **APPROVED**

GENERAL ELECTRIC GEK 27070, GEK 28143, GEK 46506, GEK 32568 GEK 107395, GEK 101941 MAN ENERGIE ME-TTS 001/18/92 SIEMENS Turbo AB - MAT 812101/02/ 06/07/08/09 SIEMENS Turbomachinery 1CW0047915	ALSTOM HTGD 90117 ANSALDO DOOSAN SKODA, TURBINY PLZEN MAN Turbo SPD 10000494596 NANJING TURBINE (NTC) SIEMENS POWER TLV 901304 & 05 SOLAR ES 9-224 W Class II
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**PRESLIA EVO**  
For gas, combined-cycle turbines and turbocompressors. **APPROVED**

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**BIOPRESLIA HT**  
For hydro turbines. **APPROVED**

ANDRITZ ALSTOM HYDRO VOITH HYDRO ISO 15380 (HEES fluids)	Ecoclabel 
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**PRESLIA SE JET**  
For aeroderivative gas turbines. **APPROVED**

GENERAL ELECTRIC LM series	SIEMENS / ROLLS-ROYCE 501-K, RB 211, Avon
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**PRESLIA SE HTS**  
For aeroderivative gas turbines. **APPROVED**

GENERAL ELECTRIC LM series	SIEMENS / ROLLS-ROYCE 501-K
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**AZOLLA AF**  
For EHC systems in steam and combined-cycle turbines. **APPROVED**

Meets most OEMs specifications	SIEMENS zinc free hydraulic oils
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**HYDRANSAFE FR EHC**  
For EHC systems in steam and combined-cycle turbines. **APPROVED**

Meets most OEMs specifications	ALSTOM HTGD 690 149 GE GEK 46357 SIEMENS - TLV 90102
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