

UPSTREAM



The national oil & gas production has been tripled since 2000 to reach 45 Mt/year of oil and 20 Mt/year of gas, thanks the new giant offshore site Azeri Guneshli Chirag and Shah Deniz. The rest of the production (20% for oil and 30% for gas) comes from 40 old fields (both on- and off-shore) operated by SOCAR, many of which have been artificially stimulated for years using water injection. Some of the onshore fields are more than 140 years old, located in Baku suburb. The offshore old fields include Oily Rocks (Since 1948, 170 Mt pumped from the "city" on stilts, with 150 km of interlinking causeways built on pilings covering 40 sq km) and "shallow-water Gunashli," (located 60 miles off Azerbaijan's Absheron Peninsula, with production levels falling due to its 30 years old equipment the structure losing reservoir pressure).

REFINERY

Azeri crude oil is refined domestically at two refineries (more than 60 years old) : the Azerineftyanajag refinery, with a capacity of 160 Kbl/d; and the Heydar Aliyev refinery, which has a capacity of 200 Kbl/d. Heating oil accounts for roughly half of output at Azeri refineries, followed by diesel fuel, gasoline, motor oil, kerosene, and other products. Both of the country's refineries are in need of modernization



ENVIRONMENT



The Absheron Peninsula is polluted due to nearly 150 years of oil production that has left some 10,000 hectares of oil-contaminated land. The Caspian Sea has also been affected due to oil and wastewater spilling and pouring out onto the ground at drilling sites. Cleaning up already polluted land, as well as reducing on-going pollution from oil-production and from people themselves by conforming to good international environmental and safety practice are key priorities of the Environmental State Program.

SERVICE & TRAINING

SOCAR employs 70,000 people, which means 1000 to 2000 technician for operation & maintenance yearly hired to replace older staff. Recruitment and training of technician should also cover the requirement of new upstream/downstream sites.

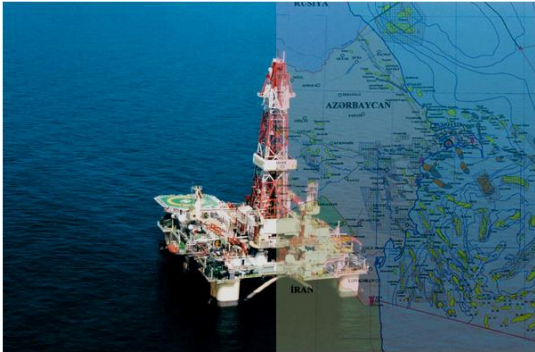
Despite the fact that in Soviet days Azerbaijan used to be the centre for the production of rigs and various other field equipment, and that a huge investment has been done in developing the local industrial base to serve as local sub contractors of AGC/Shah Deniz, SOCAR still lacks modern equipment and spare parts



IMPROVEMENT PROCESS

One should consider that it would be worthwhile to look at the old oil production and refinery plants to improve there the oil & gas recovery, to secure the refineries and to improve the environment protection. To address it, a group of 3 specialized oil service companies, members of the Association des Consultants Pétroliers www.acp-france.org (ICAT www.icat-amo.com for production optimization, P+I www.pplusi-conseil.com for refinery maintenance, inspection and process safety survey, AETS/APAVE www.aets-consultants.com for environment control) offers a combined and focused survey with the following rationale and objectives :

OIL & GAS RECOVERY



Sustainable development for re-launching the production of the ageing fields is nowadays perceived as a fundamental aspect of sound business management. The purpose of the survey is to review available field(s) data, provide suggestions/recommendations identifying possible actions for maximizing the remaining oil & gas recovery through new concepts in production for both immediate and long-term corrective actions, and indicate resources needed for their implementation. The process should take into consideration the cost-effectiveness of the projects so to get a sustainable cost/recovery ratio. It will help investors to decide if an activity should be financed and, if so, the way in which related issues should be addressed in planning, financing, and implementation driving to Recommendations on corrective actions to improve oil & gas recovery.

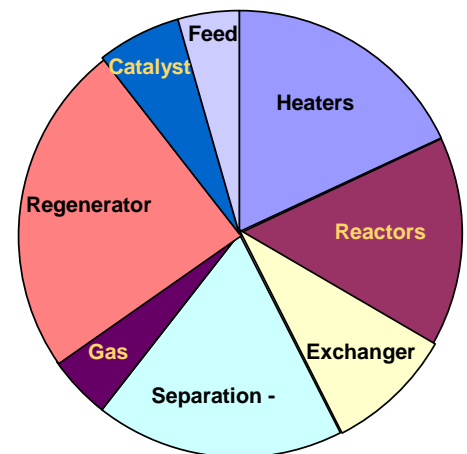
REFINERY MAINTENANCE INSPECTION & PROCESS SAFETY

Effective implementation of such methods such as Risk Based Maintenance (RBM), Risk Based Inspection (RBI) and Reliability Centered Maintenance (RCM) are the cornerstone for the creation of a risk-based decision-making culture. The aim and the objective of the Process Safety Management (PSM) are the prevention and the minimization of the consequences of accidental releases.

The Maintenance Inspection and Process Safety survey covers :

- a qualitative part: identification of all operations, maintenance and process safety issues, problems and consequences related to the SOCAR refinery.
- a quantitative part: define measure and compare Key Performances Indicators (with focus on key issues such as reliability, OEE Overall Equipment Effectiveness, and maintenance related costs for these units).

Example from a reliability and availability diagnosis of a refinery Continuous Catalytic Reforming (CCR) process unit.



ENVIRONMENT

Modern oil companies are committed to promoting “environmentally sound and sustainable development” in the full range of their activities. Sustainable development is perceived as a fundamental aspect of sound business management. We offer services to assess environmental performance in order to identify non-compliance with International/EU environmental regulations and non-conformance with the ISO 14001 environmental management standard. We also provide suggestions for both immediate and long-term corrective actions and propose resources needed for implementation.

REFERENCES

The ACP members, including AETS, Technipipe www.technipipe.com ... have built their reputation in implementing worldwide strategic projects such as (in Eurasia) :

- Support to oil equipment manufacturer “Azneftekhimyamash” (AETS coached 7 oil service companies for API Q1 certification and implementation of OHS and environmental management systems. AETS also supported Azneftekhimyamash for the development of a catalogue of services and strengthening of its management system)
- Mingäçevir (AETS provided support to reduce environmental, safety impact of thermal power station under refurbishment. The project included to perform diagnosis, implement action plan, assist for commissioning of TPP equipment and advise accordingly. Permanent assistance has been provided from 2010 to date)
- Central Asia Pipeline Audit & Training Center (TACIS project), from July 2005 to Dec 2006, Technipipe & AETS.
- Kashagan ENI Training Center, from January 2005 to December 2006
- Turkmenbashi Refinery Training Center, from April 1998 to September 1999