

# International Petroleum Technology Conference

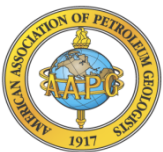
## 7-9 December 2009

### Doha, Qatar

*“World Energy Challenges: Endurance and Commitment”*

### Event Highlights

### IPTC Sponsoring Organisations



- **3,250** conference delegates & exhibition visitors from **523** organisations across **65** countries
- Opening Ceremony
- Executive Plenary Session
- Industry Breakfast Session
- Topical Luncheon
- IPTC Awards Banquet
- Integrated Project Management Session
- 4 Panel Sessions
- **466 papers** presented in **58 technical sessions** & **poster session**
- **69 exhibiting organisations** representing **16 countries**.
- **18 sponsoring organisations**

# IPTC Award for “Excellence in Project Integration”



- International recognition for distinguished achievement for integration of multiple disciplines and execution for major petroleum industry projects.
- Award Winners:
  - *1<sup>st</sup> Place:* **Qatargas 2**, Qatargas
  - *2<sup>nd</sup> Place:* **Salym Project**, Salym Petroleum Development
  - *3<sup>rd</sup> Place:* **The Dolphin Project**, Dolphin Energy

- Key topics attracted a lot of interest and highlighted global focus areas for the oil and gas industry
- Outstanding speeches by panellists, moderation by session chairs and coordination by panel committee members
- Full-house attendance
- Q&A period was extended by posting the bios of speakers on Screen
- Questions delivered through cards provided more and diversified questions from audience

## World Energy Challenges: Endurance and Commitment

- Development of low Carbon Economy is a global consensus and industry responsibility.
- Industry should take the Eco path instead of Industrial Path.
- Natural Gas demand will continue to grow at 10%, and gas will be the favorable fossil fuel for Power Sector.
- Integrated Project delivery will be achieved through the collective capabilities of all the industry business sectors and organisation NOCs, IOCs and Service/contractor Companies.

## World Energy Challenges: Endurance and Commitment

- Long term partnerships are vital for technology transfer, capability development and for accessing and developing of future resources.
- Fair fiscal terms and Energy/GHG policies developed by collaboration of industry and governments are important for all to work effectively.
- Endurance and commitment means: Focus on increasing energy efficiency in the short term, on financially disciplined investment in the medium term and on gamechanger technologies on the long term.

## 4 Panel Sessions focussing on: Environmental Solutions and Sustainability, Global Work Force, Global Gas Outlook and Renewal of Reserves

- Industry is participating in major initiatives to reduce its environmental footprint (flaring reduction, water disposal, etc.).
- Energy efficiency and CCS are essential elements of Low Carbon Energy Systems.
- Petroleum engineering graduates emerging in the market in 2010 must all find jobs – this is the responsibility of IOCs, NOCs and service companies.
- Oil and gas companies in the region need to find ways to share reservoir data for students to use on their graduation projects.

### 4 Panel Sessions focussing on: Environmental Solutions and Sustainability, Global Work Force, Global Gas Outlook and Renewal of Reserves

- Unconventional oil and gas will impact the worldwide market in the long term.
- Future exploration will focus on unconventional resources.
- Think of IOR before EOR (7,000 fields can benefit from it and 5% increase in RF is = to 10 year world consumption).
- Fit and Nimble: NOCs with the reserves and IOCs with Learning and Development of Staff and sharing of best practices provide the winning formula for sustainability.

## Development and Production

- Presentation of comprehensive facilities integrity management system which will ensure safe operation and optimise resources.
- Studies on upgrading of special alloy that can withstand corrosion in severe sour environment and better understanding of mercury attack on stainless steel material.
- Underbalanced Drilling for tight gas is an emerging technology and therefore this allows for better understanding of the reservoir. This method provides accurate LWD measurements.

## Drilling and Completion

- Application for stimulation of long heterogeneous carbonate intervals.
- Interesting techniques for design/evaluation of stimulation treatment technologies.
- Prediction of stimulation performance .
- Advances in new methods to reduce drilling risks and lower costs.

## Gas Development & Production

- Challenges that corrosion in large diameter gas pipelines poses to the oil & gas industry.
- The use of horizontal drilling and its importance in making low permeability oil reservoirs economical.
- Petrophysics, reservoir and completion domains are bringing new techniques that can be used to maximise production.

## Geosciences

- Improvement in Geological operation through focused team work and process re-engineering leading to better formation evaluation through smart technology and resilient completion practices.
- Power of integration at many levels within geophysics such as core and seismic, imaging and pore pressure prediction.
- 3D wide azimuth seismic has joined the mainstream as a geophysical technique.
- Careful analyses of both azimuthal velocities and reflection amplitudes are interesting for improving both imaging and reservoir characterisation.
- An integrated geologic and simulation modeling approach is needed to capture important high perm streaks.

## Geosciences *(continued)*

- Even late-mid mature basins require/benefit from basin/region wide petroleum system analysis to assess missed and unconventional resources.
- Detailed sedimentology, sequence stratigraphy and seismic facies are converging via high resolution seismic to provide an unparalleled window into predictive reservoir geometries and facies.
- Good linkage from outcrop/modern analogue to reservoir.
- Build subsurface predictive reservoir models/geometries that can now be merged with high resolution seismic.

## Integrated Technology

- Production history – matching using stochastic techniques such as Ensemble Kalman Filtering are now close to be operational
- Good example of sharing experience to achieve top performance drilling in Qatar
- Stresses the need for extensive data gathering.
- Data and Knowledge Manager is not a one-time cost. It is a process and not a technology. Everyone has a role to play in data management and quality assurance.

## Over Arching Industry Issues

- Novel leveraging approach to integrate people-research, technology – new ideas, business
- Shareholder collaboration – systematic approach – vision combine to deliver world-class performance; safety reliability, efficiency, ...
- Human factor is also important in determining the success of a project.

## Reservoir Engineering

- Nothing can be achieved without thorough understanding which comes from extensive study.
- Electrically enhanced oil recovery a promising idea
- Innovative techniques to track water front movement.
- 4D seismic enabling technology for monitoring steam flood.
- Solvent injection with gravity drainage in fractured carbonate has high potential for increased oil recovery.
- In line separation process module for multiple phases could provide breakthrough effective solution for small field PWRI in remote and deepwater settings.
- Systematic approach to planning and designing an EOR pilot, field case of screening and evaluating various EOR processes

## Reservoir Engineering *(continued)*

- Very interesting potential applications for EOR in fractured reservoirs.
- Geochemical fingerprinting, multi layer testing and analysis and lastly on use of multi-phase meters in wet gas environment.
- Microgravity proven as technique for monitoring gas front migration.
- Complex pressure prediction enables safe drilling of closely spaced long horizontal wells.
- Micro Seismic application can make detail layer modeling which can add value and profit to operating company.
- Microseismic – applications now a reality for different production environments
- Proactive surveillance as important (if not more) as reactive surveillance but it needs organisational vision/structure/support.

## Education Week

- **76 students** in **20 degree programmes** from **57 universities** across **36 countries**.
- Group assignments and presentations focussing on:
  - Corporate Social Responsibility
  - Oil vs.Gas
  - World Economy Crisis Effect on the Energy Business
  - Technology Watch/Knowledge Sharing in a Competitive World
  - Human Capital in the Oil & Gas Industry
  - Alternative Energy Sources: Viability and Impact
- Field Trips:
  - Dukhan Field
  - Khor Al-Udaid Sand Dunes
  - Qatar Science and Technology Park
  - Ras Laffan Industrial City
  - Schlumberger Tool and Testing Facility

## Education Day

- **76 high school students from 10 schools**

## Young Professionals Day

- **57 professionals from 9 organisations across 5 countries**