Under the Patronage of the Ministry of Oil, State of Kuwait
His Excellency Dr. Ali Saleh Al-Omair
Minister of Oil and Minister of State for National Assembly Affairs, State of Kuwait

HEAVY OIL
SPE INTERNATIONAL HEAVY OIL CONFERENCE & EXHIBITION
8-10 December 2014
Hilton Kuwait Resort, Mangaf, Kuwait

HEAVY OIL INNOVATIONS BEYOND LIMITATIONS

Titanium Sponsor
# SCHEDULE OF EVENTS

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<tr>
<th>Date/Time</th>
<th>Al-Dorra Ballroom 1</th>
<th>Al-Dorra Ballroom 2</th>
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<tr>
<td><strong>Sunday, 7 December 2014</strong></td>
<td>One-Day Training Course: An Overview of Heavy Oil Recovery</td>
<td>One-Day Training Course: Heavy Oil Upgrading</td>
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<tr>
<td>0900–1500 hours</td>
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<td>0900–1500 hours</td>
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<td>0800–1400 hours</td>
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<td>Education Day</td>
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<tr>
<td><strong>Monday, 8 December 2014</strong></td>
<td>Opening Ceremony</td>
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<tr>
<td>0900–1000 hours</td>
<td>Exhibition Inauguration, Coffee Break, and Knowledge Sharing ePoster Sessions</td>
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<td>1000–1100 hours</td>
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<tr>
<td>1100–1230 hours</td>
<td>Executive Plenary Session: Heavy Oil Innovations Beyond Limitations</td>
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<tr>
<td>1230–1330 hours</td>
<td>Luncheon, Prayers, and Knowledge Sharing ePoster Sessions</td>
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<tr>
<td>1330–1500 hours</td>
<td>Session 1: Drilling and Well Completion</td>
<td>Session 2: Recovery Methods—Thermal I</td>
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<tr>
<td>1500–1545 hours</td>
<td>Coffee Break and Knowledge Sharing ePoster Sessions</td>
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<tr>
<td>1900–2100 hours</td>
<td>Conference Gala Dinner and SPE Regional Honours &amp; Awards</td>
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<tr>
<td><strong>Tuesday, 9 December 2014</strong></td>
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<tr>
<td>0800–0930 hours</td>
<td>Session 3: Recovery Methods—Non-Thermal</td>
<td>Session 4: Reservoir Characterisation</td>
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<td>0930–1015 hours</td>
<td>Coffee Break and Knowledge Sharing ePoster Sessions</td>
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<tr>
<td>0930–1730 hours</td>
<td>Exhibition</td>
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<tr>
<td>1015–1145 hours</td>
<td>Panel Session 1: Heavy Oil: Challenges, Learnings, and Opportunities</td>
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<td>1145–1245 hours</td>
<td>Luncheon, Prayers, and Knowledge Sharing ePoster Sessions</td>
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<tr>
<td>1245–1630 hours</td>
<td>Session 5: Reservoir Development</td>
<td>Session 6: Fluid Characterisation</td>
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<tr>
<td>1500–1545 hours</td>
<td>Coffee Break and Knowledge Sharing ePoster Sessions</td>
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<tr>
<td><strong>Wednesday, 10 December 2014</strong></td>
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<tr>
<td>0800–0930 hours</td>
<td>Session 9: Field Case Studies</td>
<td>Session 10: Recovery Methods—Thermal II</td>
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<td>0930–1700 hours</td>
<td>Exhibition</td>
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<tr>
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<tr>
<td>1015–1145 hours</td>
<td>Panel Session 2: Heavy Oil: The Cutting Edge of New Technology and Bridging the Gap</td>
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<td>1145–1230 hours</td>
<td>Coffee Break, Prayers, and Knowledge Sharing ePoster Sessions</td>
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<tr>
<td>1230–1400 hours</td>
<td>Kuwait Project Session: Heavy Oil Development in Kuwait</td>
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<tr>
<td>1400–1500 hours</td>
<td>Luncheon</td>
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</tbody>
</table>
PROGRAMME HIGHLIGHTS

OPENING CEREMONY
Monday, 8 December 2014

Opening Remarks by:

His Excellency Dr. Ali Saleh Al-Omair
Minister of Oil and Minister of State for National Assembly Affairs, State of Kuwait

Emad Mahmoud Sultan
Deputy CEO, North Kuwait, Kuwait Oil Company

Fareed Abdulla
SPE Regional Director Middle East and North Africa

Nathan Meehan
2016 President, Society of Petroleum Engineers

EXECUTIVE PLENARY SESSION
Heavy Oil Innovations Beyond Limitations
Monday, 8 December 2014

Moderators:

Behrooz Fattahi
2014 President, American Institute of Mining, Metallurgical, and Petroleum Engineers; 2010 President, Society of Petroleum Engineers

Emad Mahmoud Sultan
Deputy CEO, North Kuwait, Kuwait Oil Company

Panelists:

Amran Marhubi
Technical Director, Petroleum Development Oman

Hashem Hashem
CEO, Kuwait Oil Company

Mohammed Ghazi Al-Mutairi
CEO, Kuwait National Petroleum Company

Stephane Michel
President Middle East, Total E&P

During the last few decades, a wealth of innovations in enhanced oil recovery, new well architectures, highly efficient production facilities, extra heavy oil upgrading, and refining, have made it possible to achieve significant improvements in the economics of heavy oil production in well-known areas and also in remote and challenging offshore and onshore regions of the planet. Yet the development of heavy oil fields still requires decades to take discovered resources to the levels of commercial production that have a significant impact on the oil market supply.

Overcoming the limitations imposed by the availability of low-cost fossil fuels and water for heavy oil recovery methods, deserves special attention in times when the oil industry is being driven to operate at higher levels of energy efficiency, with the minimum use of water, in an environmentally-friendly manner, with a reduced footprint, low emissions of greenhouse gases, and zero waste.

This plenary session brings together all these innovations, and the actors from NOCs, IOCs, service companies, universities and other industries, who can bring leading-edge technologies to the heavy oil arena—all working to create business opportunities by adopting and adapting heavy oil innovations beyond limitations.

PANEL SESSIONS

PANEL SESSION 1
Heavy Oil: Challenges, Learnings, and Opportunities
Tuesday, 9 December 2014

Moderators:

Badria Farhad
Manager Heavy Oil Development (NK), Kuwait Oil Company

Emad Al-Ajmi
Country Director Kuwait, Baker Hughes

Panelists:

Eissa Al-Safran
Associate Professor and Vice Dean, Kuwait University

Hamed Y. Al-Enezi
DCEO–Wafra Joint Operations (WJO), Kuwait Gulf Oil Company

Raimund Wege
Project Director Field Management, Baker Hughes

Simon Bennett
General Manager EOR Delivery, Shell

Learning how to develop heavy oil fields to reach significant levels of commercial production can take decades. In the case of giant, complex heavy oil fields, decisions made under high levels of uncertainty, early in the life of the field, can have long-range implications for oil recovery efficiency and the total cost per barrel. Learning fast is the name of the game. It is all about learning as quickly as possible from heavy oil projects and having the capability to translate these learnings into operations that maximise the value of heavy oil throughout the value chain.

This panel session will focus on how companies are learning about identifying opportunities, selecting the best ones and applying the right enhanced oil recovery technologies at very early stages of the field life cycle. This session will feature discussions about the ways in which companies are running pilot projects to test technologies on a smaller scale to mitigate the risks, optimise time and costs, and move to full development of a heavy oil field.

To summarise, this panel session will host key players from the oil industry who are responsible for the business plans and the organisations that make it possible to translate learnings into opportunities and, ultimately, business results.
PROGRAMME HIGHLIGHTS

PANEL SESSION 2
Heavy Oil: The Cutting Edge of New Technology and Bridging the Gap
Wednesday, 10 December 2014

Moderators:
David Barge
Manager LSP, Chevron

Sultan Al-Shidhani
Study Centre Manager, Petroleum Development Oman

Panelists:
Bill Lane
Vice President of Emerging Technology, Weatherford
Artificial Lift Systems

Clive Eckersley
VP Marketing, Schlumberger

Garry Pichach
Heavy Oil Director, WorleyParsons

Rod MacGregor
CEO, GlassPoint Solar

The heavy oil sector faces challenges all the way from exploring and evaluating, developing and producing, to processing and transporting. At each of these stages, technology is an essential enabler, with many significant gaps to be bridged still existing. Identifying relevant technologies along the value chain and advancing them alongside acquiring and developing specialised and new skills, is not an option but a necessity for upstream operating companies in their endeavour to reach higher recovery efficiencies and improved economics when managing heavy oil resources and transforming them into economical reserves for production, and for the middle and downstream companies to achieve transportation and processing efficiencies, and higher value. While enhanced oil recovery (EOR) technologies have advanced in recent years to achieve higher recovery levels, high grading and refining technologies enable companies to achieve more efficient evacuation, higher extraction, and maximise the value of the heavy oil components.

This panel session will analyse the industry’s progress in bridging the gap with new emerging technologies, the overall impact of these new technologies in the business value chain, and the strategies to effectively manage the people who will be using these technologies.

KUWAIT PROJECT SESSION
Heavy Oil Development in Kuwait
Wednesday, 10 December 2014

Moderators:
Ali Al-Mahmeed
Team Leader Exploration & Fields Development (Wafra), Kuwait Gulf Oil Company

Waleed Al-Khamees
Team Leader Fields Development Heavy Oil (NK), Kuwait Oil Company

The heavy oil resources of Kuwait have been identified in several geological formations and are vast in volume, and distribution occurs above or on the flanks of existing deeper fields. Development of these resources is considered very important in order to support the 2030 strategy. Two of the most promising projects are currently in different phases of development—the heavy oil project in the Divided Zone, in Eocene carbonate formation, and the shallow clastic formation, heavy oil Lower Fars accumulation in North Kuwait. Both projects have the challenge of establishing thermal EOR operations especially in the complex carbonate formation, which is relatively rare in worldwide thermal development cases. The Lower Fars development is complex as well due to the absence of previous commercial production history, and relatively challenging resource density. The two projects are undergoing pilot testing to support commercial development in the near future. The projects are destined to become world-class projects of EOR development that would support the 2030 vision of the country.

Presentation Topics:
• North Kuwait Heavy Oil Development
• Wafra Heavy Oil Development
• West Kuwait Heavy Oil Development
• Designing a Heavy Crude Refinery—The Challenges

EDUCATION DAY
Sunday, 7 December 2014

Taking place in Kuwait Oil Company, the Education Day is an initiative to introduce students to the discipline of petroleum engineering, and the industry, in general. Targeting high school students, (Grade 10 to Grade 12), invited industry professionals will share their experience with students and deliver talks on topics of general interest and relevance to the industry. The students will be given free access to the exhibition area during the SPE International Heavy Oil Conference and Exhibition.

SCIENCE TEACHERS WORKSHOP
Tuesday, 9 December 2014

The Science Teachers Workshop will focus on educating the teachers about the energy world. SPE will ensure that educators receive comprehensive, objective information about the scientific concepts of energy and its importance while discovering the world of oil and natural gas exploration and production. A variety of free instructional materials will be made available to the teachers to take back to the classroom.

For more information about these activities, please contact May Asmer at masmer@spe.org or +971.4.457.5800.
## EXECUTIVE COMMITTEE

<table>
<thead>
<tr>
<th>Name</th>
<th>Company/Institution</th>
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<tbody>
<tr>
<td>Emad Mahmoud Sultan</td>
<td>Kuwait Oil Company</td>
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<td>Badria Farhad</td>
<td>Kuwait Oil Company</td>
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<td>Ziad Jeha</td>
<td>Schlumberger</td>
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<td>Waleed Al-Khamees</td>
<td>Kuwait Oil Company</td>
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<td>Haifa’a Al Ajmi</td>
<td>Specialities Energy Company</td>
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<td>Abdulhameed Alhashem</td>
<td>Kuwait Institute for Scientific Research</td>
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<td>Adam Lloyd</td>
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<td>Anwar Al-Sharqawi</td>
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<td>Calvin Matthews</td>
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<td>Daniel Palmer</td>
<td>GlassPoint</td>
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<td>Darcy Spady</td>
<td>Sanjel Corporation</td>
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<td>David Barge</td>
<td>Chevron</td>
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<td>Eissa Al-Safran</td>
<td>Kuwait University</td>
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<td>Emad Al-Ajmi</td>
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<td>Kamran Jorshari</td>
<td>Ivanhoe Energy Canada Inc.</td>
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<td>Khaled Anwar Mohamed Al-Awadhi</td>
<td>Kuwait National Petroleum Company</td>
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<td>Waleed Al-Bazzaz</td>
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<td>Adel Alsharqawi</td>
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<td>Rafael Bastardo</td>
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<td>Rob Lavoie</td>
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<tr>
<td>Runar Nygaard</td>
<td>University of Missouri-Rolla</td>
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<tr>
<td>Simón López-Ramirez</td>
<td>University of Mexico</td>
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<tr>
<td>Suleiman Al-Hinai</td>
<td>Petroleum Development Oman</td>
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AN OVERVIEW OF HEAVY OIL RECOVERY
Sunday, 7 December 2014 | 0900–1500 hours

Course Instructor: Behrooz Fattahi, 2014 President, American Institute of Mining, Metallurgical, and Petroleum Engineers; 2010 President, Society of Petroleum Engineers

Description:
This course is intended to provide an overview of heat and fluid flow in heavy oil reservoirs. It is designed to provide a background on a variety of heavy oil recovery techniques with emphasis on steam injection recovery.

Topics include:
- Basic concepts of thermal recovery
- Mechanics of recovery and operations considerations
- Analytical heating models
- Field experiences
- Commonly-applied technologies in heavy oil recovery

Why You Should Attend:
This course will provide a basic background on heavy oil recovery for those who are working or planning to work on heavy oil recovery projects.

Who Should Attend?
Reservoir and production engineers, geologists, technicians, and managers working in the area of thermal production.

HEAVY OIL UPGRADING
Sunday, 7 December 2014 | 0900–1500 hours

Course Instructor: Mamun Absi-Halabi, Principal Research Scientist; Abdulazim Marafi, Research Scientist, Petroleum Research Center, Kuwait Institute for Scientific Research

Description:
This course is intended to provide an overview of the composition of heavy crude oils, and the available technologies for converting the heavy oils into marketable products.

Topics include:
- Heavy oil characteristics/petroleum product characterisation/need for upgrading
- Science and technology of petroleum upgrading: carbon rejection route
- Science and technology of petroleum upgrading: hydrogen addition route
- Emerging technology in heavy oil upgrading

Why You Should Attend:
The main goal of this training course is to provide participants with in-depth insights into the problems associated with heavy oil characteristics that dictate the need to refine it using special technologies to produce marketable crude oil or petroleum products. The course will provide opportunities to:
- Understand the basic principles of heavy oil upgrading
- Secure an overview of the technologies used in heavy oil upgrading

Who Should Attend?
Petroleum engineers, chemical engineers, production engineers, chemists, technicians, and managers working in developing heavy oil fields and refining the produced crude oil.

To find out more or register for the training courses, email formsdubai@spe.org
SPONSORS AND EXHIBITORS

This prestigious event is an excellent platform to demonstrate your company’s advanced technologies and expertise in developing heavy oil resources. Enhance your corporate profile and promote your products and services to key decision-makers and industry experts. For more information, please contact Taghreed Khallaf at tkhallaf@spe.org or +971.4.457.5800.

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- Total
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- Shell

Updates after 2 August 2014 are not reflected in this preview.

EXHIBITORS

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For more information, visit www.spe.org/awards or contact Maria Morozova at mmorozova@spe.org.
DELEGATE INFORMATION

Registrant’s Last Name (Family Name) Registrant’s First Name (Forename) (Name as you want it to appear on badge)

Company Name

Job Title

Address or P.O. Box

City

State/Province

Telephone (include country/area/city code)

Zip/Postal Code

Email

Facsimile (include country/area/city code)

☐ Check here if you DO NOT wish to receive updates via mail

REGISTRATION COSTS

Full Registration: Three-Day Registration

BEFORE 9 OCTOBER AFTER 9 OCTOBER COST IN USD

SPE Member USD 845 USD 945

Nonmember USD 995 USD 1,095

Author/Presenter/Committee/Session Chair/Panelist (Please select)

Visitor (Exhibition Only)—3 days Complimentary Complimentary

Student (valid ID required) Complimentary Complimentary

NOT AN SPE MEMBER? Become an SPE member for USD 110 (which includes: one-year membership + one-time entrance fee), or renew your membership for USD 90. As an SPE member you pay the lower member registration fee.

SPE Member USD 845 USD 945

Nonmember USD 995 USD 1,095

Author/Presenter/Committee/Session Chair/Panelist (Please select)

Visitor (Exhibition Only)—3 days Complimentary Complimentary

Student (valid ID required) Complimentary Complimentary

SPE Member USD 845 USD 945

Nonmember USD 995 USD 1,095

Full conference registrations include all conference sessions, coffee breaks for three days, daily luncheon tickets, gala dinner, and one delegate bag. Student registrations (for students with valid IDs only) include all conference sessions, technical exhibition, and coffee breaks.

One-Day Registration (please select)

BEFORE 9 OCTOBER AFTER 9 OCTOBER COST IN USD

Monday, 8 December SPE Member USD 450 USD 550

Tuesday, 9 December Nonmember USD 550 USD 650

Wednesday, 10 December

Visitor (Exhibition Only)—1 day Complimentary Complimentary

Student (valid ID required) Complimentary Complimentary

One-day conference registrations include all conference sessions, coffee breaks, gala dinner, and luncheon on the specified day. Student registrations (with valid IDs only) include all conference sessions, technical exhibition, and coffee breaks.

Additional Tickets COST IN USD

Luncheon Ticket (please select date)

Monday, 8 December USD 70 × ( _____ tickets)

Tuesday, 9 December

Wednesday, 10 December

Conference Proceedings USD 200 (SPE Member) × ( _____ ) USD 300 (Nonmember) × ( _____ )

Gala Dinner free to all delegates USD 90 × ( _____ tickets)

TOTAL USD

PAYMENT AND CANCELLATION POLICY

Payment can be made by credit cards or bank transfers. All payments should be made in USD.

TRAINING COURSES

<table>
<thead>
<tr>
<th>TRAINING COURSES (Sunday, 7 December 2014)</th>
<th>Time: 0900–1500 hours</th>
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<th>Nonmember</th>
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<td>An Overview of Heavy Oil Recovery</td>
<td>0900–1500 hours</td>
<td>Hilton Kuwait Resort</td>
<td>USD 750</td>
<td>USD 900</td>
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<td>Instructor: Behrouz Fattahi, 2014 President, American Institute of Mining, Metallurgical, and Petroleum Engineers; 2010 President, Society of Petroleum Engineers</td>
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<td>USD 750</td>
<td>USD 900</td>
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<tr>
<td>Instructors: Mamun Absi-Halabi, Abdulazim Marafi, Petroleum Research Center, Kuwait Institute for Scientific Research</td>
<td>0900–1500 hours</td>
<td>Hilton Kuwait Resort</td>
<td>USD 750</td>
<td>USD 900</td>
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TOTAL USD

Transfer Reference MUST QUOTE “13HOCE” AND INVOICE NUMBER

Please make the payment to: HSBC Bank Middle East Ltd, Jebel Ali Branch, P.O. Box 66, Dubai, UAE

Account: SPE Middle East DMCC

Account Number: 036-217131-100 (USD)

SWIFT Code: BBMEAED IBAN: AE1802000000036217131100

IMPORTANT: If you cancel before 8 November 2014, you will receive a full refund less USD 100. If you cancel after 8 November 2014, you will not be eligible for a refund. No refund will be given if a registered delegate fails to attend the conference. SPE must receive cancellation requests in writing by 8 November 2014, by fax on +971.4.457.3164, or by email to formsdubai@spe.org.

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