

# Eastern Mediterranean, technology and cooperation are the key to exploit the potential of gas

"Working together to meet internal demand and bring gas to EU". The panel with Eni, Cyprus Hydrocarbon and Hellenic Hydrocarbons Resources Management

Cooperation and technology. These are the key words to develop the entire potential of gas resources in the Eastern Mediterranean referred to by all the speakers of panel "East Med Gas Potential: Additional Reserves to be found and exploited?", held at the OMC 2019 yesterday. "It is necessary that the countries and the majors cooperate more closely to find, extract, and above all transmit gas to the Northern Mediterranean in an efficient manner," explains, in particular, Luca Bertelli, chief exploration officer of Eni, "the concerned countries must, above all become self-sufficient which will thus improve the wellbeing and the local stability, then the best route to transport the resources should be determined."

"Egypt already has a considerable export capacity with Lng terminals Idku and Damietta, and this seems to be the simplest, the most efficient and cost-effective route to transmit to Europe the resources extracted in that area," underlines Bertelli, "if more gas is extracted in Cyprus, we may think about an export facility also there, but it is always necessary to take account of the fact that the market has significantly changed, the Lng price in Europe is not the same as a few years ago and that it is indispensable to be competitive."

"Pipelines to European market or other markets are possible export routes of East Mediterranean excess gas", adds the manager of Eni, "but a pipeline to Europe



will require huge investments in construction and further sizable discoveries." In this respect, Bertelli points out, "the crucial issue is the coordination between the countries involved. The East Med can be a gas hub and Damietta is definitely the priority infrastructure."

Moreover, Bertelli took the stock of the projects' development in the area: Tamar has produced since April 2013, Zohr started the extractions in December 2017 and now has reached about 2.4 BCFD with the plateau expected this year, first gas from Leviathan is expected this year and for Afrodite the POD has already been requested. Thanks to a rapid development of a record time-to-mar-



### **Focus**



The future of offshore platforms decommissioning

page 4



Interview with Cao, Saipem CEO



Interview with Murena, Production Engineer at Total

page 6



Oil market, lea: the variables of 2019 page 7





Asset lifecycle solutions for the offshore, shipbuilding & marine industries.

Visit us at stand n. 2-M7.

1

# **ShowDaily**

International IF Exhibition Services

## **ORGANISING HIGH QUALITY INTERNATIONAL TRADE EVENTS**

#### **IES ORGANISES**

trade exhibitions and conferences in Europe, the Middle East and Asia. In developed economies,

#### **IES REPRESENTS**

organisers across its network, 95% of the World's Oil & Gas and Energy Shows.

> **ALEXANDRIA - EGYPT** 15-17 OCTOBER 2019

## **IES EVENTS HIGHLIGHTS**

MEDITERRANEAN OFFSHORE CONFERENCE www.moc-egypt.com







www.remenergy.it





**IES S.r.I. - INTERNATIONAL EXHIBITION SERVICES** 

**2 DAY3** 

### continued from page 1 \_

ket of Zohr, emphasizes Bertelli, "the results obtained in the area seemed impossible only a few years ago."

"We believe that cooperation with the local companies by creating longterm partnerships with the countries in which we operate is crucial," adds the Italian manager, "this is a decisive factor for prosperity and stability."

As for the main weapon of Eni that is the progress made in exploration in the recent years, the manager indicates that "most of the discoveries we have made in the area, they had already been licensed and also explored by other majors or ourselves as well. However, we returned there after 15-20 years, with new technologies and a new approach, adopted not only in Egypt, but also in Angola, Congo and Mexico." The block of Zohr itself, reminds Bertelli, "had been explored by a supermajor." "In order to achieve success, it is necessary to have cutting-edge technologies, great geologists and geophysicists and the ability to collect and analyse a great deal of data," points out the Eni manager, who adds: "Currently, the breakthrough technology is constituted by supercomputers that analyse the seismic data and manage increasingly complex algorithms."

Along with the artificial intelligence, which for Bertelli "will play a more and more important role," also "development of new professions will be determining. The industry will become increasingly specialized and thus a growing number of data scientists and data engineers will be necessary." "The sector will not undergo a revolution, but a deep evolution," says the chief exploration officer of Eni, and "through an accurate analysis of the available data, we will be able to do a great deal of things."

Efthymios Efthymiou, Geoscience lead of the Cyprus Hydrocarbon Company, declared to be open to cooperation. "We would like to work together with the companies and the governments of the region to determine the best solutions," affirmed Efthymiou, adding that he was an optimist about the future of the upstream in Cyprus: "The more we advance with the prospecting, the more confident we feel about discovering further resources."



"We are young as an oil country," explains Efthymiou, "but we are progressing also on the creation of a favourable environment for investments, working also with local entities to make them aware of the potential of the Oil&Gas sector. In this respect the city of Ravenna is an example of the combination of industry with tourism."

Also, Yannis Bassias, president and CEO of the Hellenic Hydrocarbons Resources Management, shared the view on the need of working together. In his opinion, for a successful upstream in the East Med "a combination of technology, competence and financing capacity" is necessary. "For Greece it is essential to exploit its resources and the Parliament will soon grant the permits for other four exploration blocks," announces Bassias, claiming also the foreground geopolitical role of Athens: "We can be considered as the westernmost part of the Eastern Mediterranean and the easternmost part of the Western Mediterranean".

As for the gas transmission to the European consumption centres, Bassias notes that "both Lng and the pipelines

have their pros and cons," and referring to the ambitions of Greece, he says that "it will be the market, and above all the new discoveries that will determine whether Greece will be able to become a gas hub."

The East Med Gas Forum, established in January this year, at the initiative of Cyprus, Egypt, Greece, Israel, Jordan and the Palestinian Authority, was referred to numerous times during the discussion. The goals of the initiative, reminded at the panel opening Manfred Hafner, professor at Eni Foundation Enrico Mattei and John Hopkins University, are as follows: "Establishing an integrated regional gas market to make optimal use of existing and potential reserves, systematic dialogue between its members on gas policies, promote optimal use of existing gas infrastructure, encourage the creation of additional facilities to serve existing and future discoveries and set aside any political disputes and cooperate within the forum in order to maximize the economic benefits of natural gas".

Federico Gasparini
DAY3 3

## **ShowDaily**



### TODAY AT OMC 🗕

# The future of offshore platforms: decommissioning and blue economy

Tech Talks Zone: a seminar organized by Mise on regulatory frameworks and technology development

**To provide a summary** update of the activities carried out by the Forum of the "Future of the Platforms" launched at the OMC 2017 and to present international and national regulatory frameworks and technological development on repurposing trends. These are the objectives of the seminar "The future of offshore platforms: decommissioning and blue economy", scheduled today at Tech Talks Zone - hall 4 – between 9:00 and 10:30 a.m.

The seminar, a follow-up of the OMC 2017 event "Future of the platforms", is attended by Davide Crippa, undersecretary at the Ministry of Economic development (Mise), interviewed yesterday by the "OMC Show Daily".

Organized by the Directorate general of mining and energy activities - National mining office for hydrocarbon and georesources of Mise, the seminar proposes technological and regulatory cues on decommissioning and alternative uses



of offshore infrastructures, also in light of the publication of Decree 15 February 2019 which approved the Italian guidelines for the "disposal of mining platforms for the cultivation of hydrocarbons at sea".

Moderated by Michele De Nigris (Director of Sustainable Development and Energy Sources at Rse), the seminar will feature Werner Karlsson (director of European Energy Clusters, lea Got collaboration program), Mario V. Marchionna (Saipem's corporate head of Technology innovation), Raffaella Gerboni (coordinator of Seadog Denerg Laboratories of Politecnico di Torino), Barbara Zanutigh (associate professor in Coastal Engineering - University of Bologna), Wendy Kennedy (chief executive Offshore Petroleum Regulator for Environment and Decommissioning Department for Business, Energy and Industrial Strategy, UK), Fabio Fava (professor of industrial and environmental biotechnology at the University of Bologna and chair of the Bluemed Strategic Board) and Silvia Grandi (manager of division VI, Das Unmia, Mise). Undersecretary Davide Crippa will conclude the seminar.

## Talent scouting at the OMC 2019

### The winners of the SPE Contest

Also this year OMC has provided ample opportunity to young people. One of the main sessions held yesterday was intended precisely for an open discussion between the international key actors of the Oil & Gas sector and a few hundred "professionals of the future," that is young students from ten Italian universities (the Technical Universities of Milan and Turin, La Sapienza of Roma, the Universities of Pisa, Chieti, L'Aquila, Potenza, Ravenna, Trieste and Bologna) along with a great deal of other students who registered on an individual basis. The speakers

of the meeting, entitled "Fuelling the future professionals," represented Schlumberger, Rosetti Marino, Eni and Shell.

Also yesterday, the traditional event of the Student Paper Contest took place. It is a contest promoted by SPE (Society of Petroleum Engineers) and it is aimed to university master and PhD students. The selected students – divided in two categories, MSc and PhD – presented their papers to the assembly. Then, the jury awarded three prizes (for the technical content in both categories, for the overall and presentation quality).

The winners are Riccardo Borghi, Nicolò Lontani e Ali Islam.





## Oil&Gas, the strategic role of the Mediterranean area

The strategy of Saipem: digitization, process automation and robotics Interview with CEO Stefano Cao

This edition of OMC focuses on the oil & gas activities in the Mediterranean. What is the current role and potential of the region within the global scenario?

**JE** 

The eastern Mediterranean area between the coasts of Greece, Cyprus, Lebanon, Israel and Equpt, has a strategic role following the significant gas discoveries of recent years. Among the main offshore discoveries there are in Egypt the Zohr field, a "supergiant" with 850 billion cubic meters of estimated reserves, Noor more recently discovered and the Glaucus-1 field in the waters of Cyprus. The gas coming from the new fields will be destined for both domestic and export markets in neighbouring and European countries, causing a significant increase in the creation of new gas transport infrastructures. In fact, several projects are under study that involve the development of export pipelines, liquefaction plants and subsequent transport by vessel.

# For Saipem, what are the most promising opportunities in the Mediterranean?

Eastern Mediterranean does represent an area for potential for new opportunities for all our divisions that will be able to support clients from the preliminary and feasibility stage, through the XSight division, and in the subsequent phases through the Onshore and Offshore Drilling and E&C Divisions.

For example, for the Zhor project, the offshore drilling division was involved in the discovery of the field with the Saipem 10000 drilling vessel and the offshore E&C division is working with Petrobel in the different phases for the subsequent development of the offshore field.

Saipem will also be involved in gas transportation projects, of which the EastMed project is of particular interest, challenging both in terms of length (over 1,900 km) and depth (over 3,000 meters), which involves the transportation of gas from Eastern Mediterranean fields to Cyprus, Crete, mainland Greece and Italy to connect to the European distribution network



via the Poseidon pipeline.

Saipem is also interested in alternative transport projects involving the liquefaction and gas regasification process and the development of new recently discovered offshore gas fields.

### Innovation, digitization, robotics are key issues for the sector. In this context, how is the group moving?

Digitization, process automation and robotics are strategic for Saipem. The development of simulators for special lifting operations, as well as the surveillance and supervision of construction processes through sensor and Internet of Things networks, have found operational application on board the CastorONE where we are now able to collect up to 16,000 process data in real time.

During 2018 we implemented the XDiM platform with a collection of shared data that can be consulted through virtual reality. In the automation field, Saipem is recognized as a leader in automatic welding processes for the multi-torch system that meets the most stringent safety and quality criteria. In robotics, since 2016 the Hydrone program has been active. This involves the industrialization of a platform of underwater drones capable of performing inspections, maintenance and repairs on infrastructures and assets installed at the bottom of the sea automatically, in the absence of personnel and with equipment able to stand for months without the need for intervention. The program exploits proprietary technologies based on machine learning, artificial intelligence, subsea Wi-Fi networks and aims to change and adapt operational paradigms to improve security, efficiency, speed in information exchange and the economics of operational asset management.

### Looking beyond the Mediterranean borders, which scenarios are emerging in the energy sector worldwide?

The global energy scenario is undergoing profound changes that will impact the industry with long-term effects. The ongoing transition will lead to a new energy mix, in which gas and renewable sources will play an increasingly important role and in the transition new solutions will be needed to make the production of fossil fuels more and more sustainable.

We are focusing on Lng, while in terms of diversification, also to compensate for the slowdown in oil contracts, we intend to enhance our competences in segments such as decommissioning, renewables and infrastructures. The main fields of study and development are renewable energy and energy storage, sustainable use of traditional fossil fuels (including new hybrid configurations), exploitation of natural gas and management of the entire CO2 production chain. We intend to increase our presence in low-CO2 emission markets, such as offshore wind, biomass conversion, concentration solar and geothermal, and we are pursuing innovative solutions in emerging fields such as high-altitude wind (both onshore and offshore) and emerging marine energies, from waves and currents for example. In the next 10 years, clean energy together with gas shall represent 50/60% of our portfolio.

Investments in the development of new technologies, together with our fleet, allows us to continue to offer clients a diversified range of solutions through our divisions in line with the strategy of a model of "Global Solution Provider", in order to support our clients in the energy transition and throughout the entire life cycle, from the development phase to the management and decommissioning phase.

Giampaolo Tarantino
DAY3 5

# **ShowDaily**



### What Industry 4.0 means for Oil&Gas

Digital technology, big data and innovation. The case of Tempa Rossa Interview with Murena, Production Engineer at Total

Oil&Gas companies are investing in robotics and digital innovations. What are the benefits of these types of solutions?

A complex industry like the Oil&Gas sector needs to be always more efficient in its operations, as well as in terms of safety and environmental protection. Getting innovative is the best way to reach this objective, by promoting greater smartness and agility. For example, the Oil&Gas industry is sitting on a sea of data that need to be well organized and deeply exploited to get valuable information for management: so a 4.0 Plant is the

best solution to take full advantage of available digital technology, in order to be more efficient, safer and to generate lower production costs.

However, digital technology is only a tool for change: Innovation starts by people, and digital is just a lever for this. Promoting creativity and turn a brilliant idea into a solution, into new product and services, is the key to get innovation.

### Wich projects of these type Total is developing?

Digital mainly consists of two things: data intelligence & valorization and the modernization of our way of working, that allow to add value to our business and to find new opportunities. Total focuses on four main digital strands aiming to support new innovative solutions to improve operations:

1) Enhanced Operators: how technology can help operators on site, making their work safer and more efficient through innovative tools, by making use of digital applications uploaded on smartphones and tablets;

2) Data driven asset performance: improving data management and keeping control of data collection and storage, in order to make the best use of daily data;

3) Collaborative Environments and Smart Rooms: creation of "Digital" rooms where specialists coming from different disciplines can interpret data, looking at them from different perspectives, to anticipate potential issues and get immediate solutions;

4) Virtual Plant: Management and visualization of plant documents and configuration data, from design to decommissioning, which are uploaded on a platform containing a 3D model of facilities.

## Which technologies are being used at Tempa Rossa olifield?

Tempa Rossa is an oilfield operated by Total and located in the Sauro Valley, in the heart of the Basilicata Region, in southern Italy. In December 2018 Total E&P Italy organized an event under the banner "Tempa Rossa 4.0 Days", where we showed our best digital and innovative technologies.

During this event, we drew the attention of audiences by demonstrating the first industrial ATEX-rated (ATEX: designed to work in potentially explosive environments) robot in action and showcasing a number of cutting edge digital solutions (smartphones and tablets) already in use in Tempa Rossa.

The robot demonstration has been a gateway to explain how digitization and technological innovation are making significant improvements to our lives – particularly in this case, where the robot can monitor and in-

spect facilities, and it can be invaluable in helping to manage emergency situations, performing tasks while keeping people out of harm's way. Thus Total's partnership with the Austrian Firm "Taurob" has led to the development of the first autonomous ATEX-certified industrial robot for Oil&Gas sites, in the wake of the so-called "Total's 2014 ARGOS challenge". This led to develop a robot to ameliorate the way in which onshore and offshore facilities are operated, improve the efficiency, generate lower costs and positively impact the feasibility of future projects. The anticipated benefits of this robotics solution are not restricted to Oil&Gas sites: they also extend to all industrial facilities worldwide, and could have positive outcomes for civil society. Our guests had the possibility to see different applications of the "Taurob Tracker" robot in the Tempa Rossa Oil&Gas center: manipulation of valves and of firefighting systems, detection of heat sources through a thermographic camera, possibility to detect toxic gases and use stairs to reach high equipment.

In addition to the on-site demonstration of the robot, some of the digital applications recently introduced in the Production Department of Total E&P Italy were presented. These include: TIM (Total Industrial Mobility), a set of applications on ATEX Tablets and Smartphones, to digitalise the communication process of the HSE observations on site; the electronic work permit system e-Permit, designed to optimize the process of creating and validating work permits; and PI Coresight, a cutting-edge online application for the remote and real-time monitoring of the plants in Tempa Rossa.

The Tempa Rossa 4.0 event was a successful first step for Total E&P Italia to show digital applications designed to simplify and improve the operational life on site, while acknowledging the goal of continuous development of digital applications to increase safety in an innovative way.

# <u>ShowDailv</u>

## Oil market, the variables of 2019

### lea's overview: a modest surplus in the first quarter, before flipping into deficit

The electricity crisis in Venezuela has paralysed most of the country for significant periods of time and "although there are signs that the situation is improving, the degradation of the power system is such that we cannot be sure if the fixes are durable", says lea in its March Oil Market Report. Until recently, underlines the agency, Venezuela's oil production had stabilised at around 1.2 mb/d but in past weeks industry operations "were seriously disrupted and ongoing losses on a significant scale could present a challenge to the market".

As it happens, 1.2 mb/d is also the size of the output cuts agreed by Opec countries and some non-Opec producers. The cuts were implemented in January and compliance by the cartel reached 94% in February, with Saudi Arabia cutting back by about 170 kb/d more than required. The non-Opec countries are complying more slowly at a rate of 51%, with Russia reducing its output very gradually. Due to the cuts, according to the lea, Opec members are sitting on about 2.8 mb/d of effective spare production capacity (excluding Iran and Venezuela from the calculation), with Saudi Arabia holding two-thirds of it.

Much of this spare capacity is composed of crude oil similar in quality to Venezuela's exports. Therefore, in the event of a major loss of supply from Venezuela, according to the lea the potential means of avoiding serious disruption to the oil market is theoretically at hand. Before the seriousness of the situation in Venezuela became apparent, the agency's oil balances for the first half of 2019 suggested that the market is tightening. On the basis of solid oil demand growth. lea savs that modest declines in Opec production due to Iran and Venezuela, and rising US output, the market could show a modest surplus in 1Q19, before flipping into deficit in 2Q19 by about 0.5 mb/d.

This does not take into account Saudi Arabia's announced plans to reduce its exports further in April, highlight the agency. If there were to be a collapse in production, adds lea, it could provide an opportunity for other producers who can supply comparable barrels. Venezuela currently ships about 400 kb/d to both China and India. Elsewhere, other producers have already taken advantage of Caracas' problems: as exports to the US

have slumped following the imposition of sanctions. Russia has taken the opportunity to increase its shipments to the US from relatively modest levels to around 150 kb/d: according to lea's report, geopolitics has added another complication to the global oil market.

At the same time, production cuts have increased the spare capacity cushion. "This is especially important now as economic sentiment is becoming more pessimistic and the global economy could be entering a vulnerable period", reassure the lea.

Another key theme for the agency is the growing importance of the US in global markets. Rising production there is not a new story, but what is game changing for the lea is that the US in 2021 will become a net oil exporter on an annual average basis. This year US seaborne oil trade will move into surplus with net exports rising to nearly 4 mb/d of by 2024 according to lea's analysts, who declare that the rising profile of the US not only brings greater choice to consumers, but, crucially, it enhances security of supply, especially when, as now, there are heightened geopolitical concerns.

Gruppo italiaenergia

**DAY3** 7



abbonamenti@quotidianoenergia.it 📞 06 87678751

\*The cost for the annual subscription is 1,000 euros + Vat (4%), offer valid only for new subscribers

Quotidiano Energia is a publishing product of

# **ShowDaily**

## PROGRAM - FRIDAY 29th MARCH <

### 09.00 - 10.30 Tech Talk

► The future of offshore platforms: decommissioning and blue economy (Tech Talks Zone - Hall 4)

#### 9.00 - 10.40 Technical Sessions Production: artificial lifts (Room B)

 Design of electrical submersible pumping (Esp) system associated with vortex sand shield system for effectively handling solid and sand (actual field case study)

► A new method to calculate the vertical flow performance in well production studies

Innovative insert safety valve for Sucker-Rod artificial lift application

Pushing the boundaries of subsea equipment

Optimization of controller settings applied to simulation case

### Augmented/virtual reality and monitoring (Room C)

 Virtual Reality in D&C: new approaches towards well digital twins
 Dromosplan – an innovative platform of autonomous Uavs for monitoring and inspecting infrastructures and industrial sites

The use of virtual reality and simulators for emergency management training increases employees' role awareness, commitment and information retention, while helping companies to stay compliant

► Visualizing danger: a flexible, decentralized and redundant Led warning system for hazardous areas

#### Innovative development models (Sala verde)

 Structural health monitoring solutions for offshore platforms innovative asset health monitoring

► Effectiveness of "conductor supported platform" vs conventional jacket platform based on real experience case study

 Optimization procedure of an overboarding chute with standards, mechanical and numerical considerations

Successful modification in existed artificial island led to unlock marginal reserves in Belayim land field

### 9.00 - 11.00 Workshop

Aster - Offshore renewable energy: emerging opportunities for the offshore industry (Room D)

#### 9.10 - 10.30 Posters Session

Reservoir (Digital Poster Arena - Hall 2)

- ► Maximization of downhole tracer profiling evaluation through the integration of different technologies in challenging environments
- ► Analysis of fall-off tests in a deepwater reservoir using permanent downhole gauge data
- ► Risk analysis on well performances to validate production trends by-passing backallocation issues
- Sonic log quality control: a mandatory workflow to ensure reliable results in different disciplines
- Perched water interpretation: case study in offshore Egypt
- The impact of wettability on porosity & permeability relationship
- in sandstone oil reservoir, Belayim Marine field, Gulf Suez, Egypt
- Nanoemulsion flooding: the journey to field begins

► Road-map for application of low salinity waterflooding techniques in Belayim field

### 11.00 - 12.40 Technical Sessions

Labs (Room B)

Experimental procedures for the evaluation of Biot's coeffi-

cient of low porosity carbonates

 Laboratory investigation on synergic effect of low salinity – polymer water injection on sandstone porous media

- Fast-track core analysis
- Characterization of fluid composition while drilling to optimise well placement
- Design and characterization of microfluidic devices for water/ oil separation

#### Regional challenges (Room C)

Regional 3D dynamic modeling to simulate the interaction among north african offshore fields

Meleiha: distinctive exploration & reservoir synergy to unlock new potential in western desert

The value of mud gas analysis – benefit for compartment evaluation and implications of an advanced gas analysis system on data quality

► Lng market development: small-scale plants. Environmental and Italian permitting focus

### Case studies (Room D)

Logging while drilling solutions for sustainable underground gas storage development

Adria mega 3D seismic project: advanced merge and modern processing techniques to revamp near field exploration opportunities in northern Adriatic Sea

 Probabilistic liquefaction assessment of Zohr development project landfall area

• Field application of foamer for gas lift enhancement: lesson learnt and way forward

### 11.00 - 12.45 Panel Discussions

► The development of advanced technologies: new business opportunities in the Mediterranean (Room A)

### 11.10 – 12.20 Posters Session

Digital transformation of the energy industry speaker authors (Digital Poster Arena - Hall 2)

- Automatic pore typing classification from 2D images
- Implementing the real-time data environment for oil and gas digital transformation

Machine Learning agents to support efficient production management: application to the Goliat asset

- Digital disruption in drilling&completion operations
- ► Multi source data analysis to improve drilling efficiency, reduce costs and enhance performance monitoring
- Pipeline digital monitoring based on vibroacoustic measurements
   Flaring events prediction and prevention through advanced big data analytics and machine learning algorithms

 Long-term improvement by Implementation of Scada system for three offshore platforms (Egypt - Red Sea) and converting platforms to be unmanned

### 11.30 - 13.00 Tech Talk

► Meet it up. energia nazionale, the Italian upstream is not dead (Tech Talks Zone - Hall 4)

#### Oil&Gas Business Meetings at OMC 2019

Eurosportello-Ravenna Chamber of Commerce (now Promos Italia) and Enterprise Europe Network (Arena)

Quotidiano Energia Direttore responsabile: Romina Maurizi / Direttore editoriale: Agnese Cecchini / Business Development Manager: Camilla Calcioli / Abbonamenti: Raffaella Landi / Redazione: Via Valadier 39, 00193 Roma, Tel: 06.87678751 - Fax: 06.87755725, e-mail: redazione@quotidianoenergia.it / Registrazione: Tribunale di Roma n. 372 del 30/09/2005 / Editore: Gruppo Italia Energia Srl socio unico

TUTTI I DIRITTI RISERVATI. È VIETATA LA RIPRODUZIONE TOTALE O PARZIALE IN QUALUNQUE FORMATO E LA DIFFUSIONE VIA E-MAIL, RASSEGNA STAMPA O ALTRA MODALITÀ

**8 DAY3**