ATHENS ENERGY FORUM 2018 – Energy Security and Strategic Investments: The Way Forward

AGENDA

THURSDAY | February 15

11.30 Participants Arrival – Registration

12.00 WELCOME REMARKS: Achilles Tsaltas, Vice President, International Conferences, The New York Times

12.10 OPENING SPEECH: **George Stathakis,** Minister of Energy and Environment, Hellenic Republic

12.30 REMARKS: Konstantinos Skrekas, MP – New Democracy Party, Head of Energy and Environment Sector,

1. Minister of Development and Competitiveness, Hellenic Republic

12.40 REMARKS: Prof. Yannis Maniatis, MP, Democratic Coalition, f. Minister of Environment, Energy & Climate Change

Introduction & Chair: **Symeon Tsomokos**, Founder & Chairman, Delphi Economic Forum

12.50 Panel 1: The Global Geopolitical Parameters

- *Diversification of energy sources to bring about energy independence for the region*
- *The impact of Brexit on EU Security & Energy Policy*

Kate Smith, British Ambassador to the Hellenic Republic

Steven Bitner, Economic Counselor, U.S. Embassy, Athens

Energy sector as a leveraging tool despite geopolitical challenges

Nabil Fahmy, Dean, School of Global Affairs & Public Policy, American University of Cairo, f. Minister of Foreign Affairs, Egypt

Defne Sadiklar-Arslan, Executive Director, Atlantic Council Turkey

Introduction & Chair: **Athanasios Ellis**, Editor in Chief, Kathimerini English Edition

13.45 Networking Break – Light Lunch

14.30 Panel 2: Strategic Privatization Opportunities in the Energy Sector

Laurent-Charles Thery, Director for International Development, GRTgaz

George Longos, Managing Partner, Alantra

Introduction & Chair: **Achilleas Topas**, Journalist, SKAI Media Group Co-hosted by

14.50 Panel 3: Completing the Midstream Puzzle: Exporting Gas from the Eastern Med and the Caspian Sea

- Progress report on IGB and the dynamics of a second LNG imports facility in Alexandroupolis
- TAP: Progress Report and Phase 2
- The feasibility of the East Med Gas Pipeline
- The LNG export option

The View from Greece

Dimitrios-Evangelos Tzortzis, CEO, Public Gas Corporation – DEPA, Greece

Sotiris Nikas, President & CEO, Hellenic Gas Transmission

System Operator – DESFA, Greece

Panayotis Kanellopoulos, Managing Director, M&M Gas S.A., Greece

The View from the Region

Ron Adam, Ambassador, Special Envoy on Energy, OECD coordinator, Ministry of Foreign Affairs, Israel

Katerina Papalexandri, Country Manager Greece, TAP

Albert Nahas, Vice President, International Affairs, Tellurian Inc., U.S.A.

Dr. Theodore Tsakiris, Assistant Professor, Geopolitics & Hydrocarbons, University of Nicosia, Cyprus & Scientific Adviser Athens Energy Forum

Introduction & Chair: **Alex Lagakos**, Founding Chairman, Greek Energy Forum| Member, Sustainable Energy Committee

United Nations Economic Commission for Europe

16.00 Networking Break

16.30 Panel 4: The Domestic and Regional Electricity Market Dynamics

ADMIE: The day after the ownership unbundling

Manousos Manousakis, Chairman and CEO, Transmission System Planning Department, IPTO S.A., Greece

- *The continuous need for complete market liberalization*
- *Progress report on the Inter-connectivity between the Islands and Mainland Greece*

Prof. Nikos Chatziargyriou, Chairman & CEO, Hellenic Electricity Distribution Network Operator S.A.- HEDNO, Greece

Stavros Goutsos, Deputy CEO, Public Power Corporation, Greece

Dinos Benroubi, General Manager Electric Power Business Unit, MYTILINEOS, Greece

Introduction & Chair: **Dr. Athanassios S. Dagoumas**, Assistant Professor in Energy and Resource Economics, University of Piraeus

17.15 End of the 1st Day of the Forum Co-hosted by

FRIDAY | February 16

09.30 Arrival of Delegates – Coffee/Tea

10.00 KEYNOTE SPEECH: Dr. Stelios Himonas, Permanent Secretary, Ministry of Energy, Commerce, Industry and Tourism, Cyprus

10.15 Panel 5: Regional Upstream Developments: Political, Regulatory and Economic Challenges

- The results of Cyprus' Third Licensing Round and the Onisiphoros Discovery
- Future exploration prospects in Egypt and Israel and Lebanon's untapped potential
- The entry of Exxon and Total in the Greek Upstream market
- Lebanon – The award of 2 offshore Blocks to TOTAL / ENI / Novatek

The national perspective

Yannis Bassias, President & CEO, Hellenic Hydrocarbons Resources Management S.A., Greece

Yannis Grigoriou, General Manager Exploration & Production of Hydrocarbons, Hellenic Petroleum SA

The regional perspective

Dr. Constantinos Hadjistassou, Ass. Professor, School of Sciences & Engineering, University of Nicosia

Bernard Clement, Vice President for Caspian and Southern Europe, Total E&P, France

Roudi Baroudi, CEO, Energy & Environment Holding, Qatar

Introduction & Chair: **Dr. Theodore Tsakiris**, Assistant Professor, Geopolitics & Hydrocarbons, University of Nicosia, Cyprus &

Scientific Adviser Athens Energy Forum

11.15 Networking Break

11.45 Panel 6: Sustainable development – climate change and energy

- Making energy technologies cleaner
- Responsible steps to cut carbon pollution
- Winning the global race for clean energy innovation

The evolving policy framework

Dr. Dionysia Avgerinopoulou, f. Chairman of the Standing Committee for the Environment of the Hellenic Parliament

Konstantinos Xifaras, Secretary General, World Energy Council, Hellenic National Committee

A focus on cleaner and alternative fuels

Dr. Spyros Kiartzis, Manager New Technologies & Alternative Energy Sources, Hellenic Petroleum S.A.

Dionissis Christodoulopoulos, Managing Director, MAN Diesel & Turbo Hellas Ltd, Greece

Introduction & Chair: **Zoi Vrontisi,** Chairwoman, National Center for the Environment & Sustainable Development Co-hosted by

12.30 Panel 7: RES, Energy Efficiency and Technological

Innovation

- RES as a means of energy security
- Energy efficiency technologies as a new area for growth
- Overcoming regulatory hurdles for RES development

Harris Damaskos, Associate, EBRD

Professor Xenophon E. Verykios, Managing Director, Helbio Hydrogen & Energy Systems, Greece

Zisimos Daniil Mantas, Chief Business Development Officer, Eunice Energy Group, Greece

Introduction & Chair: **Miltos Aslanoglou,** Energy Regulation Expert, Greece

13.00 End of Forum

Cyprus new gas discovery holds 6 to 8 tcf, ENI says

A natural gas field offshore Cyprus is believed to hold

between six and eight trillion cubic feet, Italian energy firm ENI has said.

Speaking at an industry event in Cairo on Monday, CEO Claudio Descalzi said an appraisal well would have to be drilled to understand the real volumes of a recent discovery at Calypso 1, which was announced last week.

Asked whether it is believed to hold around 6 to 8 trillion cubic feet, Descalzi said: “It could be more or in that range… for sure it cannot be less but we have to understand it … It’s a good find that has merit to go ahead with additional investment.”

An analysis of data following a collection of fluids and rock samples revealed that Calypso “is a promising gas discovery and confirms the extension of the ‘Zohr-like’ play” into the Cypriot EEZ, ENI said in a company statement.
Zohr, a supergiant gas field discovered by ENI in 2015 in adjacent Egyptian waters, holds an estimated 30 trillion cubic feet (tcf) of resources in place.

Eni has been present in Cyprus since 2013 and has interests in six licenses located in the EEZ of Cyprus (in Blocks 2, 3, 6, 8, 9 and 11), five of which are operated.

The gas in the new discovery will presumably be exported, since Cyprus’s potential for consumption of natural gas is estimated at just 1 BCM annually. Cyprus still uses polluting fuel oil to produce electricity. To abide by the European program for reducing polluting emissions and to switch to using natural gas immediately, Cyprus is gearing up for imports of liquefied natural gas.

Up to now, only one gas reservoir, Aphrodite, has been discovered in Cypriot waters. Aphrodite is owned by Noble Energy and Shell. The reservoir, which contains 4.5 TCF of natural gas, was discovered in 2010, and has yet to be developed.

Renewable energy fast becoming a consumer utility

One step forward and countless steps back. That's the general feeling about the past year. The world's effort to tackle climate change was hindered when the Trump Administration backed out of America's commitment to the Paris Climate Accord whilst
still supporting the use of fossil fuels. But, lost in the kerfuff le of sceptics are great stories of progress and advancements made by nations and private organisations with their warm embrace of renewable energy, many in America itself. Here's a look at 2017's
biggest climate change and renewable energy headlines:

1) China to invest $361bn into renewable fuel by 2020 (January 4) The world's largest energy market continued its eff ort to shift from coal to cleaner fuels with a massive $361bn investment in renewable energy. Wind, hydro, solar and nuclear will contribute to over half of the new power generated by 2020, along with creating 13mn jobs in the sector. China will also invest over 1tn yuan (~ $150bn) on solar power, adding close to 1,000 more plants and increasing the solar power capacity by five folds.

2) In the US, there are now twice as many solar workers as coal miners (February 7) Though accounting for just 1.3% of America's electricity, solar power now hires twice as many people as the coal industry.

As more people equip their homes and businesses with solar panels, the labour-intensive nature of installation and maintenance is creating demand for workers.

3) Eleven EU members have already met renewable energy targets (March 14) The EU 2020 strategy, which aims at increasing the renewables share of the gross final energy consumption to 20%, has already been met by 11 members – three years before the 2020 deadline. The members have further committed to raising the EU target to 27% by 2030.

4) Western US states continue pursuit of clean energy despite Trump's policies (April 1) Despite Trump's hell-bent attempt at undoing years of environmental protection regulations and Obama's renewable energy policies, several western US states are pushing ahead with plans to make their economies greener. There is more than politics at stake, as renewable energy is seen as important to the region's health – both economically and environmentally. States like Oregon, California, Colorado and New Mexico plan to reduce carbon emission levels through investments, tax credits and 'cap and trade' programmes.\

5) Germany achieve a new energy record – renewables generating 85% of electricity (May 10) Renewables were the source of 85% of the electricity consumed by Germany on April 30 2017. With the wind, hydro and solar generating most of the electricity required, the coal-fired power plants had a Sunday's rest. Germany's ambitious 2050 plan to reduce the carbon emission levels to 20% of the 1990 levels seems well within grasp.

6) 100% Renewable Energy By 2035 supported by 1,400 Mayors across the US (June 27th) Some 1,400 mayors from across the USA have joined hands to pass a resolution aiming to make cities completely sustainable by 2035. Renegading against the Trump administration's environmentally regressive proposals – promoting the use of coal and petroleum – the local and state off icials are embracing renewable energy instead. It also sends a message to the world, that the local politicians are ready to bypass the federal government to collaborate and lend international support towards a cleaner future. The group also plans to urge Trump and Congress to implement climate change response policies and support off -shore wind development.

7) Nuclear takes a back seat to renewables for the first time since 1984 (July 6) After a span of 33 years, renewables overtook nuclear in the US for the months of March and April. New wind and solar plants; accompanied by heavy snow and rainfall fuelling the hydroelectric generators have spiked the power outputs from renewable energy sources. It also comes at a time when issues over nuclear power's cost and safety have come into question.

8) Study finds renewable energy prevented 12,700 premature deaths over nine-year period, (August 17) In a study by Nature Energy, the expansive adoption of renewable energy and the resulting decrease in environmental pollution have saved 12,700 pre-mature deaths in the period of 2007 to 2015. The lower emissions result in people living healthier lives by avoiding respiratory and cardiac problems associated with breathing polluted air. The improvement in health has saved the US $220bn, accounting for lower healthcare costs and fewer sick days. According to another study by Quartz, the US spent $50bn to $80bn on renewable energy subsidies in the same time period and saw climate and healthcare benefits worth half the taxpayer's money. Renewables are proving to be a worthwhile longterm investment.

9) Harnessing water evaporation energy could be a promising fresh source of renewable energy (September 26) Wind, solar and hydro are the most commonly talked about renewable energies. There is a new groundbreaking technology in works – harnessing the energy from evaporation. Scientists exploring the idea think the potential for evaporation harvesting is similar to that of wind and solar. The Great Lakes have enough evaporation energy to fulfil 70% of the US' electricity demand. A machine called the Evaporation Engine contains tiny spores spread over water. The spores expand and shrink as they absorb and release water due to the heat. The motion of the spores can be harnessed to produce electricity.

10) Solar power in high demand and the number-one source of

new energy (October 4) Solar energy outpaced all other forms of power sources in 2016. While renewables accounted for two thirds of the new power added, solar technology was the most popular. Solar is likely to stay at the top, with high demands from China, India, the USA and Japan.

11) Google is now entirely fuelled by sun and wind (November 30) One of the world's largest Tech Companies, Google, now powers all its infrastructure through wind and solar energy. With depleting costs in wind and solar, Google has completely switched to renewables and is currently the largest corporate customer of clean energy on the planet, with an annual billing of $3.5bn globally.

12) Elon Musk renewable energy switch on the largest ever lithium-ion battery (December 1) After promising the largest lithiumion battery in 100 days, Elon Musk delivered to South Australia in less than two-thirds of that time. The 129-megawatt battery will store energy generated by the Hornsdale Wind Farm and dispatch electricity during shortages, variability and blackouts; reducing reliance on coalpowered plants for backups. The highlights from 2017 are an indication of the progress renewables are making as a consumer utility. The unrivalled innovation, adoption and support will carry forward the conversation and help leapfrog clean energies beyond fossil fuels in 2018.

The global economy in 2018

By Michael Spence/Hong Kong

Economists like me are asked a set of recurring questions that might inform the choices of firms, individuals, and institutions in areas like investment, education, and jobs, as

well as their policy expectations. In most cases, there is no definitive answer. But, with sufficient information, one can discern trends, in terms of economies, markets, and technology, and make reasonable guesses.

In the developed world, 2017 will likely be recalled as a period of stark contrast, with many economies experiencing growth acceleration, alongside political fragmentation, polarization, and tension, both domestically and internationally. In the long run, it is unlikely that economic performance will be immune to centrifugal political and social forces. Yet, so far, markets and economies have shrugged off political disorder, and the risk of a substantial short-term setback seems relatively small.

The one exception is the United Kingdom, which now faces a messy and divisive Brexit process. Elsewhere in Europe, Germany's severely weakened chancellor, Angela Merkel, is struggling to forge a coalition government. None of this is good for the UK or the rest of Europe, which desperately needs France and Germany to work together to reform the European Union.

One potential shock that has received much attention relates to monetary tightening. In view of improving economic performance in the developed world, a gradual reversal of aggressively accommodative monetary policy does not appear likely to be a major drag or shock to asset values. Perhaps the long-awaited upward convergence of economic fundamentals to validate market valuations is within reach.

In Asia, Chinese President Xi Jinping is in a stronger position than ever, suggesting that effective management of imbalances and more consumption- and innovation-driven growth can be expected. India also appears set to sustain its growth and reform momentum. As these economies grow, so will others throughout the region and beyond.

When it comes to technology, especially digital technology, China and the United States seem set to dominate for years to come, as they continue to fund basic research, reaping major benefits when innovations are commercialized. These two countries are also home to the major platforms for economic and social interaction, which benefit from network effects, closure of informational gaps, and, perhaps most important, artificial-intelligence capabilities and applications that use and generate massive sets of valuable data.

Such platforms are not just lucrative on their own; they also produce a host of related opportunities for new business models operating in and around them, in, say, advertising, logistics, and finance. Given this, economies that lack such platforms, such as the EU, are at a disadvantage. Even Latin America has a major innovative domestic e-commerce player (Mercado Libre) and a digital payments system (Mercado Pago).

In mobile online payments systems, China is in the lead. With much of the country's population having shifted directly from cash to mobile online payments – skipping checks and credit cards – China's payments systems are robust.

Earlier this month on Singles' Day, an annual festival of youth-oriented consumption that has become the single largest shopping event in the world, China's leading online payment platform, Alipay, processed up to 256,000 payments per second, using a robust cloud computing architecture. There is also impressive scope for expanding financial services – from credit assessments to asset management and insurance – on the Alipay platform, and its expansion into other Asian countries via partnerships is well underway.

In the coming years, developed and developing economies will also have to work hard to shift toward more inclusive growth patterns. Here, I anticipate that national governments may take a back seat to businesses, subnational governments, labor unions, and educational and non-profit institutions in driving

progress, especially in places hit by political fragmentation and a backlash against the political establishment.

Such fragmentation is likely to intensify. Automation is set to sustain, and even accelerate, change on the demand side of labor markets, in areas ranging from manufacturing and logistics to medicine and law, while supply-side responses will be much slower. As a result, even if workers gain stronger support during structural transitions (in the form of income support and retraining options), labor-market mismatches are likely to grow, sharpening inequality and contributing to further political and social polarization.

Nonetheless, there are reasons to be cautiously optimistic. For starters, there remains a broad consensus across the developed and emerging economies on the desirability of maintaining a relatively open global economy.

The notable exception is the US, though it is unclear at this point whether President Donald Trump's administration actually intends to retreat from international cooperation, or is merely positioning itself to renegotiate terms that are more favorable to the US. What does seem clear, at least for now, is that the US cannot be counted on to serve as a principal sponsor and architect of the evolving rules-based global system for fairly managing interdependence.

The situation is similar with regard to mitigating climate change. The US is now the only country that is not committed to the Paris climate agreement, which has held despite the Trump administration's withdrawal. Even within the US, cities, states, and businesses, as well as a host of civil-society organizations, have signaled a credible commitment to fulfilling America's climate obligations, with or without the federal government.

Still, the world has a long way to go, as its dependence on coal remains high. The Financial Times reports that peak

demand for coal in India will come in about ten years, with modest growth between now and then. While there is upside potential in this scenario, depending on more rapid cost reductions in green energy, the world is still years away from negative growth in carbon dioxide emissions.

All of this suggests that the global economy will confront serious challenges in the months and years ahead. And looming in the background is a mountain of debt that makes markets nervous and increases the system's vulnerability to destabilizing shocks. Yet the baseline scenario in the short run seems to be one of continuity. Economic power and influence will continue to shift from west to east, without any sudden change in the pattern of job, income, political, and social polarization, primarily in the developed countries, and with no obvious convulsions on the horizon.

Toyota Clings to Hydrogen Bet While Electric Sales Soar

Toyota Motor Corp., which has made a big bet on hydrogen-powered cars, is looking more isolated as industry rivals double down on plug-in electric vehicles as the dominant technology in the emerging post-fossil fuel era.

Three years ago, Toyota President Akio Toyoda, grandson of company founder Kiichiro Toyoda, unveiled the Mirai, a four-door family sedan powered by hydrogen tanks and fuel-cell technology that emits nothing but heat and water – and none of the gases that contribute to global warming.

However sales of the $57,500 sedan – available in Japan, California, and parts of Europe – have yet to break the 5,000

mark, compared to some 300,000 of Nissan Motor Co.’s battery-electric Leaf.

Toyota isn’t the only player in fuel-cell vehicle development. However, even hydrogen-car backers such as Honda Motor Co., Hyundai Motor Co. and Volkswagen AG’s Audi have refocused their zero-emissions car strategies on EVs. Investment in hydrogen power stations has been glacial and technology advances have lowered the cost of batteries and extended driving ranges.

China, the world’s biggest car market, nearly doubled the number of charging points last year to 215,000, while the number of hydrogen stations was all of five. It plans to introduce a cap-and-trade emissions policy from 2019, and has joined a growing list of countries seeking deadlines to phase out fossil fuel-powered vehicles.

Tesla Inc. this month unveiled a new Roadster with a 620-mile (998-kilometer) driving range, twice that of Toyota’s Mirai. The electric carmaker’s CEO, Elon Musk, has long disparaged fuel cells because of the cost and difficulty of creating, storing and transporting hydrogen.

By contrast, the relative simplicity of EV powertrains has helped open the door to a host of new entrants, including vacuum-cleaner billionaire James Dyson. Bloomberg New Energy Finance sees electric cars reaching price parity with their gasoline-burning cousins as early as 2025, following a 73 percent plunge in lithium-ion battery prices between 2010 and 2016.

“It’s easier for companies to make a profit with EV, and it’s easier for governments to prepare the infrastructure,” said Richard Kaye, a portfolio manager at Nippon Comgest Inc. “For the past few years, it’s been EV that’s been gaining traction. Because of that, it’s EV that’s much closer to becoming reality.”

As such, fuel-cell technology is increasingly being put on the back burner. Honda CEO Takahiro Hachigo said last month he thinks EVs will proliferate faster in the near term, and Hyundai Executive Vice President Lee Kwang-guk said in August that EVs will now be the “mainstay” of the Korean automaker’s eco-car lineup.

Fuel cells were barely a footnote when VW CEO Matthias Mueller announced the group’s aggressive electrification strategy in September.

By contrast, Toyota says its fervor for the technology it began developing in the early 1990s remains undiminished. Fuel-cell and battery-electric vehicles must be developed “at the same speed” because different parts of the world will favor different energy sources based on their specific needs, Executive Vice President Didier Leroy said in an interview at last month’s Tokyo Motor Show, where Toyota was the only Japanese automaker to display hydrogen-powered vehicles.

Read more: Why EVs are the future — a QuickTake explainer

“We know, for example, that the fuel cells in the Japanese society will be much more than just cars,” Leroy said. “In many other places in the world, it will be the same.”

Shares of Toyota rose 0.3 percent to 7,046 yen as of 1:53 p.m. in Tokyo Tuesday. They have advanced 2.4 percent this year compared with a 17 percent gain in the Topix index.

California is currently the main market for fuel-cell vehicles outside Japan, but has just 30 hydrogen stations. Efforts by Toyota and its partners to set up infrastructure on America’s East Coast have been plagued by delays. By contrast, BNEF counted more than 44,000 charging points nationwide in 2016.

Japan has 91 hydrogen stations and is aiming for 160 by 2020 and 320 by 2025. But that’s against more than 28,000 charging

points at the end of last year, according to BNEF, whose analysts forecast the high costs and strict regulations governing hydrogen stations will mean the government can only meet 75 percent of its 2020 goal, and an even smaller proportion of its 2025 target.

“Unlike lithium-ion batteries for electric vehicles, there is no existing parallel industry for fuel cells that accelerates the speed of cost reduction,” said BNEF analyst Ali Izadi-Najafabadi. “Fuel-cell vehicles will not achieve the same level of market penetration.”

The gap is widening even as Toyota forges partnerships aimed at promoting fuel cells. One such global entity established at the start of this year, the Hydrogen Council, saidthis month that the lightest element could supply a fifth of worldwide energy needs by 2025.

Fuel-cell proponents face a chicken-and-egg dilemma: increased infrastructure requires additional vehicles to support it, and vice versa.

Toyota, which leads FCV sales globally with the Mirai, has only shipped about 4,300 since its launch in late 2014. By contrast, Nissan has sold about 300,000 of the Leaf since 2010 and Tesla has delivered more than 250,000 electric vehicles since the first Roadster rolled out in 2008.

The figures at other FCV makers are even starker: Honda has shipped fewer than 700 of the Clarity Fuel Cell since its debut last year, while Hyundai has moved about 900 of its Tucson Fuel Cell since 2013.

Toyota has set a lofty goal of selling 30,000 FCVs annually by around 2020. Achieving that will need not just more infrastructure, but improvements to the Mirai itself, according to chief engineer Yoshikazu Tanaka. The list he gave echoed what Musk has done with his second-generation Roadster, which on top of a 620-mile range can go

0-60 miles per hour in 1.9 seconds.

First, the Mirai’s range of about 312 miles under U.S. standards is “not nearly enough,” Tanaka said on the sidelines of a conference in Tokyo last month. The other is more abstract. “We don’t want people to buy the car just for its environmental credentials, ” he said. “We have to make it cool.”

LNG trade volume to increase by 489mn tpy by 2040: GECF

This file photo taken on February 6, 2017 shows the Ras Laffan Industrial City, Qatar’s principal site for production of liquefied natural gas and gas-to-liquid, some 80km north of Doha. According to the GECF, a boom in LNG trade is seen in the coming years in view of the expansion of Qatar’s LNG industry as well as in other GECF member countries in addition to liquefaction facilities coming online in the US and Australia.

*** Current ‘LNG Boom’ period to continue until 2020; Qatar, GECF countries to drive LNG trade**

The volume of LNG trade will increase by around 240mn tonnes

per year (tpy), reaching 498.5mn tpy in 2040, Doha-based Gas Exporting Countries Forum has said in a report.

Currently it is 'LNG Boom' period for the global gas industry, which GECF said would last until 2020. The outlook for LNG export growth is very promising, with an average annual growth rate of 2.8%. The largest contributors to this increase are Australia and the US.

According to the GECF, a boom in LNG trade is seen in the coming years in view of the expansion of Qatar's LNG industry as well as in other GECF member countries in addition to liquefaction facilities coming online in the US and Australia. Rapidly expanding production and trade of pipeline gas and, especially, liquefied natural gas (LNG) has been observed in recent years.

In 2016, global trade of LNG totalled 257.7mn tonnes (MT) – a 15MT increase from the previous year, GECF said in its 'GECF Global Gas Outlook 2017'.

In the medium-term, GECF sees LNG trade soaring to 356mn tpy by 2020 – approximately 100mn tpy more than seen in 2016, when trade totalled 258mn tpy. Most of this boom will come from additional capacity in Australia and the US.

In the early 2010s, the Middle East was the biggest LNG exporter globally, with more than one-third of the region's LNG volumes being exported from Qatar, Oman, the UAE, and Yemen. However, capacity expansion in other regions has eroded its share of the market.

It is forecast that, by the end of 2020, only 28% of total LNG exports will come from the Middle East. However, there is optimism over developments which will increase absolute levels of exports in the region: de-bottlenecking of existing capacity and capacity additions announced in Qatar by 30%; recovering LNG capacity in Yemen; and the entrance of Iran into the LNG export market.

The developments in Qatar and Iran will increase the region's share of LNG exports to more than 30% by 2025.

The share of the GECF countries will drop from 59% in 2016 to 47% in 2020, recovering to around 52% by 2025 and reaching 50%

by 2040.
From the demand side, OECD Asia-Pacific will remain the biggest LNG importing region, led by Japan and South Korea. It is anticipated that it will import around 144mn tpy of LNG by 2040, around 25mn tpy above current values. This regional share will level-off to 29% by the end of the forecast period.
The GECF also said that unconventional natural gas resources would play an increasingly greater role in global supply. The outlook projects that the share of unconventional gas in total gas production will rise from approximately 16% today, to more than 30% in 2040.
A low-carbon future is emerging as a key concern for the international community, especially with the adoption of the Paris Agreement in December 2015, the GECF noted.
This agreement has galvanised the energy community, with more than 190 countries pledging to mitigate their greenhouse gas (GHG) emissions through Intended Nationally Determined Contributions (INDCs).
Paving the way to a low carbon future must take into account the compatibility of CO2 mitigation with sustainable development, including its economic, social, and environmental dimensions, the outlook said.

Athens Energy Forum 2018: February 15 – 16, 2018

Overview

2017 has been another year marked by regional geopolitical tensions and rivalries but despite this very high level of volatility, new exploration projects are underway in Greece and Cyprus creating new **potential for investments in the oil & gas industry**. At a global scale, the uncertainties created by **Brexit** and the renewed friction in US-Russian relations continue to mar the possibility for regional stability as US and EU sanctions against Russia remain in full effect. The new set of challenges that will affect **EU's Climate and Energy Policy** to 2030 and beyond after President Trump's decision to withdraw from the Paris Climate Accord.

AGENDA

THURSDAY | FEBRUARY 15

11.30
PARTICIPANTS ARRIVAL – REGISTRATION
12.00
WELCOME REMARKS:

- **Achilles Tsaltas**, Vice President, International Conferences, The New York Times

12.10
OPENING SPEECH:

- **George Stathakis**, Minister of Energy and Environment, Hellenic Republic

12.25
REMARKS:

- **Konstantinos Skrekas**, MP – New Democracy Party, Head of Energy and Environment Sector, f. Minister of Development and Competitiveness, Hellenic Republic

12.35
REMARKS:

- **Prof. Yannis Maniatis**, MP – Democratic Coalition, f. Minister of Environment, Energy & Climate Change

12.45
PANEL 1: THE GLOBAL GEOPOLITICAL PARAMETERS
– Diversification of energy sources to bring about energy independence for the region
– The impact of Brexit on EU Security & Energy Policy

- **Geoffrey R. Pyatt**, Ambassador of the United States of America to the Hellenic Republic
- **Kate Smith**, British Ambassador to the Hellenic Republic

– Energy sector as a leveraging tool despite geopolitical challenges

- **Nabil Fahmy**, Dean, School of Global Affairs & Public Policy, American University of Cairo, f. Minister of Foreign Affairs, Egypt
- **Defne Sadiklar-Arslan**, Executive Director, Atlantic Council Turkey

Introduction & Chair: **Athanasios Ellis**, Editor in Chief, Kathimerini English Edition

13.30

NETWORKING BREAK – LIGHT LUNCH
14.30
PANEL 2: STRATEGIC PRIVATIZATION OPPORTUNITIES IN THE ENERGY SECTOR

- **Laurent-Charles Thery**, Director for International Development, GRTgaz
- **George Longos**, Managing Partner, Alantra

14.50
PANEL 3: COMPLETING THE MIDSTREAM PUZZLE: EXPORTING GAS FROM THE EASTERN MED AND THE CASPIAN SEA
– Progress report on IGB and the dynamics of a second LNG imports facility in Alexandroupolis
– TAP: Progress Report and Phase 2
– The feasibility of the East Med Gas Pipeline
– The LNG export option

- The View from Greece

- **Dimitrios-Evangelos Tzortzis**, CEO, Public Gas Corporation, Greece*
- **Sotiris Nikas**, President & CEO, Hellenic Gas Transmission System Operator – DESFA, Greece*
- **Panayotis Kanellopoulos**, Managing Director, M&M Gas S.A., Greece

- The View from the Region

- **Katerina Papalexandri**, Country Manager Greece, TAP
- **Albert Nahas**, Vice President, International Affairs, Tellurian Inc., U.S.A.
- **Theodore Tsakiris**, Assistant Professor, Geopolitics & Hydrocarbons, University of Nicosia, Cyprus & Scientific Adviser Athens Energy Forum

16.45
NETWORKING BREAK
17.00
PANEL 4: THE DOMESTIC AND REGIONAL ELECTRICITY MARKET DYNAMICS

- The continuous need for complete market liberalization
- Progress report on the Inter-connectivity between the Islands and Mainland Greece
- ADMIE’s privatization: the day after

Speeches:

- **Manousos Manousakis**, Chairman and CEO, Transmission System Planning Department, IPTO S.A., Greece
- **Prof. Nikos Chatziargyriou**, Chairman & CEO, Hellenic Electricity Distribution Network Operator S.A.- HEDNO, Greece
- **Stavros Goutsos**, Deputy CEO, Public Power Corporation, Greece*
- **Dinos Benroubi**, General Manager Electric Power Business Unit, MYTILINEOS, Greece

17.45
END OF THE 1ST DAY OF THE FORUM
.
* TO BE CONFIRMED

FRIDAY | FEBRUARY 16

09.30
ARRIVAL OF DELEGATES – COFFEE/TEA
10.00
KEYNOTE ADDRESS:

- **Konstantinos Skrekas**, MP – New Democracy Party, Head of Energy and Environment Sector, Former Minister of Development and Competitiveness, Greece

10.15
PANEL 5: REGIONAL UPSTREAM DEVELOPMENTS: POLITICAL, REGULATORY AND ECONOMIC CHALLENGES

- The results of Cyprus’ Third Licensing Round and the Onisiphoros Discovery
- Future exploration prospects in Egypt and Israel and Lebanon’s untapped potential
- The entry of Exxon and Total in the Greek Upstream market

- **Yannis Bassias**, President, Hellenic Hydrocarbons Resources Management S.A., Greece
- **Yannis Grigoriou**, General Manager Exploration & Production of Hydrocarbons, Hellenic Petroleum S.A.
- **Dr. Constantinos Hadjistassou**, Ass. Professor, School of Sciences & Engineering, University of Nicosia*
- **Bernard Clement**, Vice President for Caspian and Southern Europe, Total E&P, France
- **Dimitris Gontikas**, Managing Director, Energean Oil & Gas, Greece*
- **Dr. Carole Nakhle**, CEO, Crystol Energy, U.K.

11.45
NETWORKING BREAK
12.15
PANEL 6: SUSTAINABLE DEVELOPMENT – CLIMATE CHANGE AND ENERGY

- Making energy technologies cleaner
- Responsible steps to cut carbon pollution
- Winning the global race for clean energy innovation

- **Dr. Dionysia Avgerinopoulou**, MP, f. Chairman of the Standing Committee for the Environment of the Hellenic Parliament
- **Konstantinos Xifaras**, Secretary General, World Energy Council, Hellenic National Committee
- **Dr. Spyros Kiartzis**, Manager New Technologies & Alternative Energy Sources, Hellenic Petroleum S.A.
- **Dionissis Christodoulopoulos**, Managing Director, MAN Diesel & Turbo Hellas Ltd

13.00
PANEL 7: RES, ENERGY EFFICIENCY AND TECHNOLOGICAL INNOVATION

- RES as a means of energy security
- Energy efficiency technologies as a new area for growth
- Overcoming regulatory hurdles for RES development

- **George Gkiaouris**, Senior Banker, Power & Energy, EBRD
- **Professor Xenophon E. Verykios**, Managing Director, Helbio Hydrogen & Energy Systems, Greece
- **Zisimos Daniil Mantas**, Chief Business Development Officer, Eunice Energy Group, Greece

13.45
END OF FORUM

GECF Doha meet seeks to further strengthen gas marke

The 18th ministerial meeting of the Gas Exporting Countries Forum (GECF) in Doha tomorrow will further explore ways to strengthen the global gas market, which faces numerous challenges including lower prices.

The Doha-headquartered GECF currently accounts for 42% of the global gas output, 67% of the world's proven natural gas reserves, 40% of pipe gas transmission, and 85% of global LNG trade.
The GECF seeks to increase the level of coordination and strengthen the collaboration among member countries, and to build a mechanism for a more meaningful dialogue between gas producers and consumers to ensure stability and security of supply and demand in global natural gas markets.

It also aims to support its members over their natural gas resources and their abilities to develop, preserve and use such resources for the benefit of their peoples, through the

exchange of experience, views, information and coordination in gas-related matters.
Saudi Arabian Energy Minister Khalid al-Falih is expected to travel to the Qatari capital, Doha, this week for meetings with oil-producing countries on the sidelines of an energy forum, three sources familiar with the matter said, according to a Reuters dispatch. Al-Falih is expected to meet other energy ministers from Opec and possibly Russian Energy Minister Alexander Novak on Friday, the sources said, speaking on condition of anonymity.
It was not immediately clear whether al-Falih would meet Iranian Oil Minister Bijan Zanganeh, the sources said, as there was no confirmation from Tehran yet on whether Zanganeh would attend the gas forum.

Qatar and Russia are members of the GECF, while Saudi Arabia is not.
The natural gas market is very dynamic and requires liquidity, flexibility and transparency for it to function effectively, GECF noted. It, therefore, needs multiple supply sources, users and comprehensive infrastructure for transmission and distribution. The natural gas market is highly developed in the US Europe and Asia.

التنقيب عن النفط براً: احتمالات واعدة بكلفة أقل

بحر لبنان وبرّه بانتظار الإفراج عنها.. مع ذلك يحضر الملف النفطي بصمت أحياناً وبصخب أحياناً أخرى، وفي كلتا الحالتين يبقى عالقاً في الدهاليز السياسية…

قبل إعلان رئيس مجلس الوزراء سعد الحريري استقالته، كانت الحكومة على أبواب إقرار أول عقد تلزيم في البلوكين 4 و 9 وذلك بعد إقفال دورة التراخيص الأولى في 12 تشرين الأول على عرضين مقدمين من ائتلاف يضمّ ثلاث شركات إيني ونوفاتك وتوتال(. وكان من المفترض أن يبتّ مجلس الوزراء هذا الملف ويعطي وزارة الطاقة موافقته لتتمكن من التفاوض مع الشركات. علماً أنّ المفاوضات مع تحالف الشركات المشاركة في دورة التراخيص الأولى للتنقيب عن النفط في المياه الإقليمية اللبنانية، تبدأ من بعد غد الإثنين.

غير أنّ وزير الطاقة لم ينتظر تكليف الحكومة فوقّع دعوة الشركات المشاركة في دورة التراخيص الأولى معلناً ذلك بخطورة التبعات لتي تنجم من عدم المضيّ قدماً في مسار الآلية المقرّرة لاستكشاف الثروة النفطية. رغم خطوة الوزير، التي يراها كثيرون خطوة متسرّعة، يبدو أنّ تحقيق حلم لبنان النفطي قد أرجئ في الوقت الراهن. صحيح أنّ الحريري قد تريّث في ما خصّ الاستقالة، إلاّ أنّ الأوضاع لا تنبئ بانعقاد جلسة لمجلس الوزراء قريباً لحسم الملفات الكبيرة وعقد الاتفاقات المصيرية.

في ظلّ هذا الوضع هل يُعاد إلى الواجهة التنقيب عن النفط برّاً؟! أبدى لبنان جاهزية تامّة لبتّ موضوع استخراج النفط في البرّ، وذلك من خال المسح الذي جرى على امتداد 6000 كيلومتر مربع منذ أكثر من ثلاثة أعوام. المعلومات الجيولوجية التي أصدرتها شركة «نيوس» تسمح بتقييم مخزون النفط والغاز في البرّ اللبناني بشكل مفصّل. وقد أتاح المسح الثلاثي الأبعاد الحصول على مجموعة بيانات جيوفيزيائية لباطن الأرض التي يمكن للشركات لعالمية أن تحلّلها

بغية تحديد أماكن وجود النفط والغاز وتطويرهما واستخراجهما. ومع ذلك لم تبتعد المناكفات السياسية من هذا لملف، فيما يستمر تخوف الخبراء من تكرار تجربة المماطلة المتمادية التي رافقت إقرار المرسومين المتعلقين باستخراج النفط في البحر وما رتّبه ذلك من ضمور في هذا الملف وانكفاء لعدد كبير من الشركات الدولية التي لم تعد مهتمة بالغوص في الأعماق اللبنانية، وما تبعه من تسرع لناحية إجراء دورة تراخيص واحدة (فيما أجرت قبرص ثلاث دورات تراخيص ولم تحسم هذا الموضوع الدقيق اقتصادياً وسياسياً).

التنقيب البرّي أقل كلفة

بحسب الخبير النفطي والاقتصادي رودي بارودي، «فإنّ تحاليل البيانات قد أظهرت تكاملاً في النظام البترولي من الناحية الجيولوجية فلماذا لا يباشر لبنان بإجراءات التنقيب البرّي؟ عمليات حفر الآبار النفطية التي حصلت في أربعينيات القرن الماضي ثبتت وجود مكامن نفطية، إضافة إلى الاستكشافات التي تمت في سوريا وفلسطين والتي يشكل لبنان استمراراً لها، كلها دلائل تؤكد وجود مكامن نفطية. إلى ذلك، كلفة التنقيب والتطوير في البرّ، أقلّ من خُمس (5/1) الكلفة بحراً، ما يشكل عنصر جذب لشركات متوسطة الحجم. من هنا لا بدّ من عدم المماطلة في هذا الملف الحيوي لتجنب تكرار تجربة البحر. فالاهتمام بالبرّي يؤدي إلى زيادة التنافس بين الشركات، ما يُعطي الدولة قدرة تفاوضية أعلى تؤدي إلى تعظيم المنفعة، فضلاً عن سهولة مشاركتها في الأنشطة البترولية برّاً بسبب الكلفة المتدنية مقارنة مع البحر».

تاريخ التنقيب البرّي

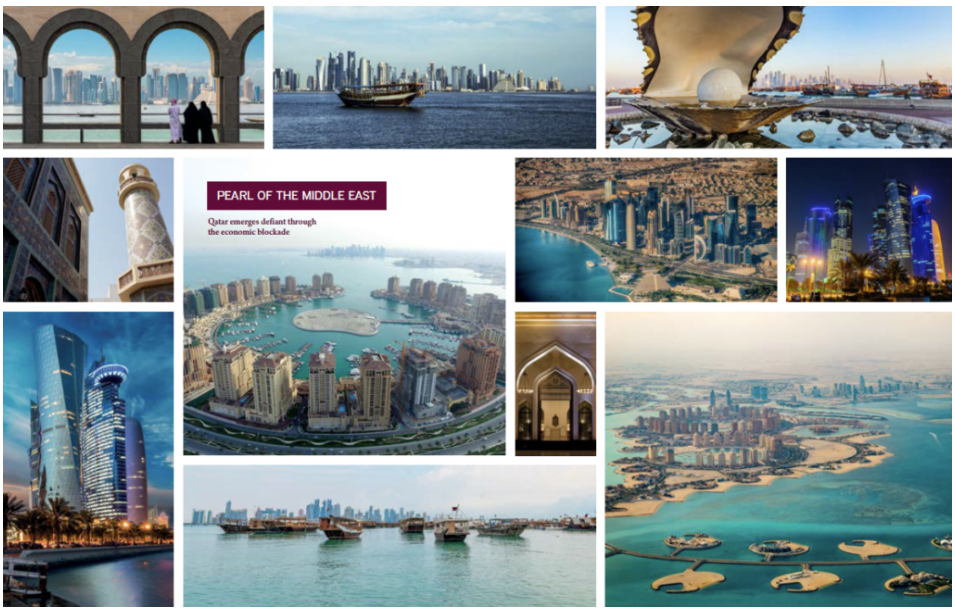
ليس التنقيب عن البرّ في لبنان أمراً مستجدّاً. بل إنّ التوقعات عن احتمال وجوده تعود إلى منتصف الأربعينيات، وقد بد أت حينها محاولات حفر بئر تجريبية في المنحدر الغربي في جبل تربل شمال مدينة طرابلس. آنذاك اكتشفت الشركة المنقّبة موادّ بترولية ثم طمرت البئر من دون أن تُعرف الأسباب. بين الأعوام 1948 و 1966 تم حفر سبع آبار غالبيتها في منطقة البقاع قبل أن يقفل هذا الملف بسبب الأوضاع السياسية من جهة، وعدم توفر إمكانات لإجراء الدراسات اللازمة. ولكن، رغم الاكتشافات، والإثباتات لا يزال لبنان غائباً عن الساحة النفطية، فيما يُفترض أن يكون معنياً بكل ما يحصل من حوله.

عن الإطار القانوني، تقول المحامية والمتخصصة في قطاع النفط والغاز كرستينا أبي حيدر: «هنالك مشروع قانون للتنقيب البري وهو

موجود لدى اللجان المختصة لكن إن لم يُقرّف في وقت قريب فلماذا لا تُعتمد القوانين المرعية الإجراء التي، بالرغم من قدمها، من الممكن أن تسد الفراغ إن أجريت التعديات اللازمة. القانون الجديد ينبغي أن يحتوي على نقاط قانونية هامّة إذا ما أردنا مواكبة التطور الاقتصادي والاجتماعي لا سيما في ما يتعلق بتنظيم عمل الشركات، ومسألة الإشغال الموقت للعقارات أثناء عملية الاستكشاف البرّي، من ثم الاستملاك إذا تم اكتشاف حقل نفطي… كل هذه ا أ لمور تحتاج إلى مقاربة استباقية وسريعة. فالملكية الفردية مصونة في الدستور اللبناني فا يمكن نزعها إلا بموجب مرسوم منفعة عامّة ولقاء تعويض عادل. إلى ذلك، قد تظهر عقبات إضافية هي المحافظة على الأثار وعلى المواقع الطبيعية والمياه الجوفية والثروات الطبيعية الأخرى، كل هذه التحدّيات قد تعوق عمليات التنقيب أو تدمّر التراث الوطني لذا يجب سنّ قوانين وقائية وردعية «. وتتابع أبي حيدر «من غير الممكن الحديث عن النفط البرّي دون ذكر دور البلديات كسلطة محلية منتخبة وعلى تماسّ مباشر مع المشاكل اليومية، لذلك من المفترض إيجاد منظومة تشريعية ترعاها لكونها المعني مباشرة بإدارة الثروات الطبيعية. ومن الضروري أن توضع القوانين الواضحة قبل البدء بأيّ عملية تنقيب، مع دراسة التجارب السلبية والإيجابية في الدول الأخرى لنعرف كيف نستفيد منها ولن أخذ مثلاً الأثر البيئي الذي تؤدي في تطبيقه البلديات دوراً أساسياً. للأسف، حتى الساعة لم يُفتح النقاش في لبنان على نحو واسع وعميق حول دور البلديات، سواء على صعيد الآثار البيئية أو الاقتصادية أو الاجتماعية أو حتى إيجاد فرص عمل جديدة، و إيجاد مدخول جديد للبلديات ولاتحادات البلديات » .

وتضيف « أنّ التجارب العالمية تشجع الشركات الصغرى والمتوسطة في عملية التنقيب البرّي، ومن المفترض أن يحذو لبنان حذو الدول الأخرى التي تمتاز بخبرات عالية في إدارة مجال النفط والغاز البرّي، و ألا يسمح للشركات الكبرى بأن تنفرد بهذا القطاع وتبتلعه، ولا يمكن لذلك أن يتم إلا من خلال مراقبة علمية ودقيقة لعمل الشركات المنقّبة«. منذ أكثر من أربعة أعوام يزعم المسؤولون عن هذا القطاع أنّ عملية التنقيب عن النفط البرّي يمكن أن تبدأ في وقت قريب، بما أنّ العوائق التي تؤخر العمل بحراً غير موجودة. لكن يبدو أنّ هذا الوقت القريب لن يحين حتى من أجل وضع منهجية واضحة لطريقة العمل. فهل كل» العراقيل المفتعلة « أحياناً والظروف المستجدة أحياناً أخرى إشارة إلى أفضلية أن تبقى هذه الثروة مدفونة لئلا تتسبب في إغراقنا في المزيد من الفساد

Keep calm, carry on



PETROLEUM ECONOMIST

PDF Adobe

POLITICS / The Qatar crisis is hurting the GCC as a whole, economically and politically, while the targeted country is hanging on / Gerald Butt, Doha

The first time you see the picture, if you arrive in Doha by air, it’s lit up in glass panels above each booth at passport control.
The image is black-and-white—giving the appearance of a stenciled drawing—of the Emir of Qatar, Shaikh Tamim bin Hamad Al Thani. He looks calm but resolute.

Underneath, the slogan in Arabic reads ‘Tamim the magnificent’. Thereafter, you see the same image all over Doha, sometimes tiny above the lift buttons in office blocks, other times covering the whole side of a high-rise building.

This public display of admiration for Sheikh Tamim, Qataris and long-term expatriates said, reflects genuine feelings of support for the way in which the country’s leader has handled the crisis resulting from the economic blockade. This was imposed by Saudi Arabia, the United Arab Emirates (UAE), Bahrain and Egypt on 5 June. The four states accused Qatar of failing to honour pledges to change some of its domestic and regional policies.

They insist the siege will continue until,among other things, Qatar ends its alleged support for terrorism and for the Muslim Brotherhood, and shuts down Al-Jazeera television.

Qatar has rejected the conditions as an infringement of its sovereignty. Shaikh Tamim told the United Nations General Assembly in September that the “unjust” and “illegal” blockade had been imposed “abruptly and without warning”, and Qataris considered it “as a kind of treachery”.
He went on to express “pride in my Qatari people” and foreign residents who had “rejected the dictates” and “insisted on the independence of Qatar’s sovereign decision”. When he returned to Doha, many thousands of people took to the streets to welcome him.

The Qatari leadership will have been relieved to witness that degree of public support, because the country faces difficulties—even though the energy sector has been unaffected, with oil and gas exports continuing normally. When the blockade was imposed, Saudi Arabia shut its land border with Qatar. This caused an immediate problem because 40% of Qatar’s food, including milk and dairy produce, came from the kingdom. Within days, new suppliers were found, food was airlifted from Iran and Turkey, and new shipping routes were

established, using Sohar and Salalah ports in Oman as hubs, in place of Jebel Ali in the UAE. Food prices have risen, but today there aren't shortages.

The siege has, however, disrupted travel. Arriving from destinations to the west of Qatar involves a longer flight over Turkish airspace, swinging south down across Iran before approaching Doha from the east. Qatar Airways is facing higher fuel bills because of this, aside from lost revenue on the dozens of daily flights that used to connect Doha with Bahrain, Saudi Arabia and the UAE. "To get to a meeting in our Dubai office," a European businessman in Doha said, "means catching a flight to Kuwait and changing planes there. It's the best part of a day."

Economic survival

The other economic sector hit by the siege is banking. According to economists in Doha, $21bn was withdrawn from Qatari banks in June, as UAE investors and others withdrew deposits, but outflow fell to $10bn in July and $5bn in August. Luiz Pinto, fellow at the Brookings Doha Center think tank and Qatar University, says that "so far, the government has stepped in whenever Qatari banks faced foreign deposit outflows and the non-renewal of other funding arrangements with foreign banks", mainly with transfers from the country's sovereign wealth fund, the Qatar Investment Authority.

The blockade, Pinto continued, had inflicted "a shock" on the economy, but in his view "there's no risk of a Qatari financial collapse. The central bank holds $39bn in international reserves and foreign currency liquidity, and the government holds around $300bn in its sovereign wealth fund. In addition, foreign revenues are firm and the public sector holds $32.4bn, or almost 30% of total deposits, in local currency within the Qatari commercial banking system".

Pinto also dismisses speculation that Qatar might de-peg its currency from the dollar and devalue, saying that "economic

factors commonly associated with a currency crisis and devaluation are simply not found in Qatar. The country runs structurally large fiscal and current account surpluses and is able and willing to sustain the
dollar peg from its vast sovereign wealth".

There are even outward signs of the economy getting back to normal. The Doha government points to the fact that imports in August were up 40% on July, returning to the pre-embargo level, proving, it says, that new trade channels are in place. But the figures don't tell the whole story—they tell you the value, not the volume. The country is now compelled to spend more—basic imports are much more expensive. In the weeks ahead things will get more challenging. Qatar's economy, leaving aside the energy sector, is living off a construction boom, mostly but not totally, associated with preparations for the 2022 World Cup. Almost everything
related to construction is imported, including most of the steel needed. For while Qatar's own steel industry has the capacity to produce around 80% of its domestic needs, most production is tied
up in long-term export deals. Machinery is the crunch Most importantly, nearly half of all imports are made up of machinery and
precision engineering equipment. This has traditionally been sourced from Jebel Ali, where bulk imports and storage capacity
have kept prices low. Today, industry in Qatar must re-order and bring equipment through Sohar, where there are very long delays, or direct from the manufacturers in Europe, the US or Far East. Not only will the costs soar with either option, but in
many cases new machinery on order will have different specifications, necessitating the expense of fresh designs and alterations to building plans.

In the short term, priority will be given to imports for the

energy sector and for projects directly related to the World Cup. But private firms, which began ventures at a time when there was plenty of cash, could be knocking at the government's door for help if costs rise substantially.
"It's a horrendous problem if this whole thing doesn't get sorted out," said a Qatari businessman.

For now, the Gulf crisis has reached a plateau, with neither side seeking to escalate it. Qatar hasn't retaliated against those imposing the siege: it's still pumping around 2bn cubic feet a day of natural
gas to the UAE through the Dolphin pipeline, although plans to increase the flow to 3.5bn cf/d are now on hold. Former energy minister Abdullah al-Attiyah was the architect of most of Qatar's gas
developments. Today he runs the Abha Foundation in Doha, a think tank that bears his name, and in a statement to Petroleum Economist said: "Despite the blockade, we honour our commitments
and will continue to supply gas to all of our customers. We like to separate business and politics—it's business as usual wherever possible." While the blockade is focused on Qatar, the three Gulf states imposing it are also feeling negative economic effects from trade, travel and tourism disruptions.

But Nader Kabbani, research director at Brookings Doha, says "economic considerations have, so far, not induced the UAE and Saudi Arabia to de-escalate, even when given opportunities to do so. This suggests that the dispute is more about personalities than anything else."

In other words, it's largely down to the three powerful young men at the centre of the crisis, Crown Prince Mohammed bin Salman of Saudi Arabia and Prince Mohammed bin Zaid of the UAE—the instigators of the policy on Qatar—on the one side; and Shaikh Tamim on the other.

The crisis will continue until they can put aside their

personal rivalries. What's clear already is that the implications for the Gulf Cooperation Council are profound. Even if a solution is found soon, there's no chance of a return to the status quo ante. The GCC as a body has shown its impotence by sitting on its hands throughout the crisis. Qatar, for example, will never allow a return to a state of affairs in which it relies on its Gulf neighbours for basic imports. Mutual trust has evaporated. This is perhaps the clearest message inherent in the proliferation of black-and-white images of Shaikh
Tamim around Doha.

Qatar's new national museum, on the southern shore of Doha Bay, is taking shape. Not that it's an easy shape to describe. The building consists of large, white concrete petals, interlocking at different angles. The design is inspired by what's known as the desert rose, the effect resulting from the merging of gypsum crystals in the desert producing fragile discs that have the appearance of a petal.

It's appropriate that the new museum should acknowledge the importance of the desert in the creation of modern-day Qatar: the exploration for oil began in an arid region in the west of the country in the 1930s and subsequent onshore finds provided the revenue to fund the country's early development. But it's the sea beyond the line of palm trees outside the nearly-completed national museum—or more precisely the sea-bed—that's provided the main source of hydrocarbons responsible for Qatar's explosion of prosperity over the past couple of decades. With its vast offshore North Field (shared with Iran), Qatar sits on the third-largest reserves of natural gas in the world and has become the top producer of liquefied natural gas. Its two LNG firms, Qatargas and RasGas, between them notch up 77m tonnes in output every year.

In 2005, the Qatar government felt that things were perhaps moving too fast and decided to impose a moratorium on further North Field development to allow reservoir studies to be

carried out. The energy minister at the time, Abdullah al-Attiyah, said “we have to be very careful about reserves, pressures, and how to continue for as long as we can.” The last LNG venture, Qatargas 4, came on-stream in 2011.

In April this year, the moratorium came to an end. Qatar Petroleum (QP) chief executive Saad al-Kaabi said the company had been “conducting extensive studies and exerting exceptional efforts to assess the North Field, including drilling wells to better estimate its production potential”. As a result, QP had decided that “now is a good time to lift the moratorium”. Work would start on a new venture to produce an extra 2bn cubic feet a day of natural gas for export from a new site in the southern sector of the North Field.

The expectation was that the extra LNG production capacity needed to handle the increased output would be found by the relatively cheap method of debottlenecking the existing trains. At the end of May, QP awarded Japan’s Chiyoda a contract to identify the modifications needed to raise capacity of all the trains at the Ras Laffan LNG plants.

LNG trains ready to launch

Then in July, out of the blue, QP announced that the 2bn cf/d North Field expansion plan was being doubled, and that the country’s LNG output capacity would rise by 30% to reach 100m tonnes a year within five-to-seven years. Petroleum Economist soundings in Doha indicate that Qatar is lining up for a major upstream and downstream gas project that’s estimated to be worth around $30bn. It will involve well drilling, the construction of an offshore receiving platform, the laying of pipes to shore, and the establishment of a new gas treatment plant (with the likelihood of some 24,000 barrels a day of condensate being produced) before the gas reaches the LNG facilities. The debottlenecking is expected to add around 10% to current capacity, taking it up from 77m t/y to about 85m t/y. The expectation at present is that two new LNG trains, each able to produce around 7.5m t/y, will be needed to

process all the new gas, with capacity rising to the target 100m t/y.

No timetable has yet been decided for the new venture, but it's unlikely that QP will reach an agreement with a joint venture partner or partners before the second half of 2018. A huge amount of detail needs to be discussed, not least about the financing of the deal. Given the current constraints resulting from low global oil prices and the economic embargo, QP might want its IOC partner to shoulder the lion's share of capital expenditure. While the joint venture contract will be open to bidding, there's a strong possibility that one of the IOCs already involved in Qatargas/RasGas (including ExxonMobil, ConocoPhillips, Shell and Total) will be a favourite. The same goes for firms involved in the construction of the new trains.

Various explanations can be heard in Doha for QP's decision to double the already announced North Field expansion programme. One is that Qatar is concerned about Iran's increasing draw-down of gas from its half of the field (which it calls South Pars), another is that Qatar wants to send out a defiant message that it won't be intimidated by the economic embargo. In the view of Roudi Baroudi, head of Doha-based consultancy Energy & Environment Holding "the North Field has been Qatar's source of stability, and the country now wants to underpin that stability still more." Luiz Pinto of Brookings Doha also sees a link with the embargo: "The IOCs and other key foreign investors involved will lobby for international support for Qatar. The projects will also prove to be an additional source of support for the economy in the run-up to the World Cup in 2022."

After 2022, Qatar alone will bring new output to market—regaining its crown as the world's leading LNG producer. PE Steady as she goes OIL OUTPUT / Qatar's oil strategy is to stem further production declines, as it tightens its economic belt and keeps the investment focus on

natural gas / Gerald Butt, Doha If a day comes soon, with or without Opec/non-Opec consent, when Gulf oil producers decide to open the taps to the full, Qatar's contribution won't make the headlines. Saudi Arabia, with healthy spare capacity, and Kuwait—hopeful of reclaiming its 250,000-barrels a day Neutral Zone half-share and reaching its long-desired 4m b/d capacity target— are the Gulf's best hopes for adding new crude oil to the market.

Since the discovery and spectacular development of Qatar's offshore North Field and the country's meteoric ascent to the peak of liquefied natural gas producers, oil has always been something of a poor relation. In the current climate, with a harsh mixture of relatively low global oil prices and a Qatar economy that's struggling to come to terms with the Saudi-UAE-led blockade, its status is unlikely to change. Hang on as best you can, seems to be Qatar Petroleum's (QP) message to the country's oil sector.

Qatar's baseline for the Opec/non- Opec cuts was 0.648m b/d, down from peak production of more than 0.73m b/d at the start of this decade. Its current allocation is 0.618m b/d, with actual production in the 0.6m b/d range. "We'll be quite happy if we can stick with this figure for the immediate future," an oil sector official in Doha said. "We won't realistically be expecting more."

Maintaining the current production level will require enough effort in itself. Nearly half of Qatar's output comes from the offshore al-Shaheen field, 50 miles (80km) north of Ras Laffan. Up to July this year, Denmark's Maersk was the operator. The field has now been taken over by the North Oil Company (NOC), a joint venture between France's Total (30% stake and operator) and QP, (70%).

The concession term is 25 years. Al-Shaheen began production in 1994, and today 300 wells and 30 platforms are in operation. Total's task, after what's been a frosty handover

from Maersk to NOC, is to expedite the drilling of new wells—the company says it has immediate plans to drill 56, using three rigs—in order to keep al-Shaheen at a 300,000 b/d plateau.

Maintaining a theoretical capacity plateau of 200,000 b/d is also QP's goal at its vast and veteran (production began in 1949) onshore Dukhan field. At present, output is in the range of around 175,000 b/d. A study for possible enhanced oil recovery operations has been carried out, and the plan is for this to begin in the next two years, QP budgets allowing. But once again, the best hope is for merely a holding operation. There'd been plans for extra barrels to come from the offshore Bul Hanine field, also operated by QP.

A proposal to more than double capacity from 40,000 b/d to 90,000 b/d was announced in May 2014, but dropped when international oil prices fell in the months thereafter. Earlier this year, engineering, procurement and construction bids were received for a Phase 1B development scheme, again with a 90,000 b/d target. But with the economic blockade prompting a reassessment of spending plans, Bul Hanine's production is unlikely soon to rise above 40,000 b/d. The fate of Qatar's oil sector, it seems, is to remain for ever in the shadow of big brother gas.