

## Turkey ready to be energy hub of ECO region

AA Energy Terminal, 28.02.2017



The member countries of the ECO are rich in energy resources and Turkey is ready to transfer them to international markets, the country's foreign minister said.

Speaking at an ECO foreign ministers' meeting in Islamabad, Pakistan, Mevlut Cavusoglu said energy was a key field upon which the organization must focus. "Our region is rich in energy resources. Turkey is ready to transfer them to international markets," he added. Cavusoglu said the 13th ECO Summit was being held at a crucial time. "Current political and economic challenges force us to reconsider the role of the ECO," he said.

According to the Turkish foreign minister, the organization has huge potential to become an important regional player. However, he said member countries needed to redouble their efforts to exploit this potential.

"First of all, we need to put into force our trade agreement, ECOTA, to enhance intra-regional trade. With this understanding, I call upon all the member states to complete the necessary requirements for joining ECOTA," the minister said.

Commenting on the organization's 'Ecobank' -- a body to finance trade through projects -- Cavusoglu said: "We need to enhance the institutional and financing capacity of Ecobank to meet the growing needs of the region."

The integration of regional transport systems and the effective use of transit corridors were also important, the minister said: "Effective implementation of the Transit Transport Framework Agreement (TTFA) and completion of the outstanding projects, such as the Islamabad-Tehran-Istanbul Road Corridor, should be the organization's priorities."

Cavusoglu said the member states had natural beauty, a rich history and diverse cultural heritage: "We can utilize them. As a leading country in the field of tourism, we are ready to share our experiences with our fellow ECO members."

Cavusoglu asked ECO members to fulfill their responsibilities on the organization's budget: "Unfortunately, current budgetary problems prevent us from transforming the ECO into a more efficient organization. We believe that all member countries should fulfill their responsibility in terms of burden-sharing. This is also important for strengthening the ownership of our organization." "Since our resources are limited, our efforts in the ECO should be more focused, realistic and efficient. We should define and concentrate on priority areas such as trade and investment," he added.

At the same meeting, Iranian Foreign Minister Javad Zarif said the ECO should invest more time and energy for implementation of the organization's vision for 2025. "The members want to see the organization focus on projects and programs which bring about maximum economic benefits to members and the region," Zarif said.

Zarif added that the ECO would play a greater role in future. The head of Pakistan's foreign affairs ministry Sartaj Aziz said that a lack of regional connectivity was a major impediment to economic cooperation.

Aziz said joint efforts were needed to transform the ECO into a formidable economic bloc through full exploitation of its resources. ECO secretary general, Turkey's Halil Ibrahim Akca, said the population of the 10-nation bloc had reached 471 million.

Akca said intra-regional trade had also increased to 8.3 percent last year from 5.3 percent in 2000. The ECO was founded by Turkey, Iran and Pakistan in 1985. In 1992, the organization expanded to include seven new members, namely Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

On Tuesday, the foreign ministers from the member states are expected to approve an Islamabad Declaration which aims to build more corporation on connectivity, trade, transport and energy. The ECO Vision 2025 document will be adopted at a summit being held on Wednesday. Turkish President Recep Tayyip Erdogan will attend the summit.

## High prices, overseas dependence affect energy, say Turks

Hurriyet Daily News, 27.02.2017



High prices are perceived as one of the most critical problems in the energy sector and the area in which the government has been most unsuccessful in terms of energy policy, a recent poll has revealed.

The dependence on imported energy is seen as another major problem for the sector, according to Professor Volkan Ediger, the director of Kadir Has University's Center for Energy and Sustainable Energy, which commissioned the poll. "Natural gas is the most used energy source in households; the consumer wants continuous access to energy sources," said Ediger.

Tell us about the poll.



I think this poll is a first of its kind since it is about the Turkish public's energy preferences. The poll was conducted last November with 1,204 people who were interviewed face to face. In the first part, we asked questions to see the patterns on household energy consumption. Some 65 percent of consumers said they were spending the largest amount of money on energy for heating and then lighting. Some 54 percent use natural gas, 25 percent use coal and 12 percent use wood for heating. While natural gas is the most used energy source, the highest bill is paid for electricity, since 50 percent said electricity was the energy source they spend the most money on.

One of the questions we asked in this section was about electricity cuts. Some 47 percent said electricity cuts happened one or two times, and that's pretty normal. In addition, we saw that in some regions, electricity cuts are more frequent, especially in Southeast Anatolia. Probably that is because of security problems and unauthorized use is also highest in that region.

One of the most interesting findings is about insulation. Some 65 percent do not have any system of insulation. That means there is a big room for this type of industry. And also we have to do more to raise awareness. As income levels increase, more are inclined to have insulation.

In the second part, we asked questions on consumer preferences. The findings show that natural gas is the public's number-one preference as an energy source. When asked which energy source they would prefer to use in their house if they cost the same and were easily accessible, 63 percent said natural gas. Solar energy came second at 21 percent, followed by wind at 6 percent.

Can we say that the public prefers clean energy and has a high awareness of renewable sources?

Let me put it this way: the Turkish public likes natural gas. It is clean and easy to use. There is no danger in using it and it is relatively cheap. The poll shows that the bill they pay for natural gas is quite high compared to their income; still it is the cheapest option they can have. I also believe that the public knows that Turkey is geographically in an advantageous position as neighboring countries are rich in natural gas.

When it comes to solar energy, people are aware that Turkey is a very sunny country. I think they say, "The sun is there, it heats Turkey, so why don't we use it more?" But I don't think they know about the technology and how much it costs. They think there is plenty of sun and wind, so it should cost less.

One of the most important findings in this section was about the public's view on the cost of energy. On electricity prices, 50 percent said they were very high, while 35 percent said they found it high. In the case of natural gas, 32 percent found it high, while 33 percent said it was very high.

What are the other findings in the second part?

We asked what type of power plant they would prefer to have in their city. The top two are solar and wind. The least preferred is nuclear and coal plants.

Can we assume that the Turkish consumer is environmentally conscious?



I think they have confused views. Natural gas is their most preferred energy resource. When we asked about the world's future energy source, 40 percent say solar energy and 22 percent say natural gas. But when we ask if they cost the same and were easily accessible, they said they would prefer natural gas to solar energy.

I think starting with the President Turgut Özal, who was the first to sign natural gas agreements in 1986, successive governments have pursued successful natural gas policies. They invested in pipelines, and natural gas became available in big cities and later in rural areas, too. Turkey is covered by a natural gas system. When it comes to solar and wind energy, it is popular in their ideal world because they must think it is relatively cheap, which is not actually the case.

The public seems to be wary of nuclear plants as well.

Yes, but that approach changes when it is presented as a government policy. The poll shows that the majority believe nuclear power plants involve environmental and health risks. And they wouldn't choose to have a nuclear power plant in their city.

But their view on nuclear energy differs according to their party affiliation as well. Some 42 percent say they trust the government rhetoric on the safety of nuclear power plants. More than 50 percent of AKP [Justice and Development Party] supporters say they trust the government's rhetoric on the safety of nuclear energy. The highest objection to nuclear energy comes from the Peoples' Democratic Party [HDP], followed by the Republican People's Party [CHP].

So the public's views on energy policies are politicized.

Exactly. Everybody supports the energy position of their own party. The public finds energy prices to be high. But when we ask about what they think about the government policy, they say they support it. So that's the third part of the poll. Some 58 percent who said they voted for the AKP said they supported the government's energy policies. The political line you see on other issues is similar on energy issues as well. On one end, we have the ruling AKP with the Nationalist Movement Party (MHP) closer to it and on the other end, we have the HDP with the CHP.

Another interesting finding in that section regards support for different energy policies. The oil and natural gas pipelines policy tops the list with 38 percent finding it successful; this is followed by the purchase of natural gas.

The least successful one is energy prices.

But then we asked their views on the Turkish Stream [a new pipeline project that will carry Russian gas to Europe via Turkey], they have no idea what Turkish Stream is. Some 86 percent said, "I have no information about it."

On the one hand, the government's policy on oil and gas pipeline policy is described as successful, yet the most recent instrument in that policy, Turkish Stream, is unknown to the public.

So they support energy policies but they don't know exactly what they support.



In a way. Since the 1990s, there has been a lot of talk about Turkey being a transit country for pipelines. And since they use natural gas in their daily lives, they probably support pipeline policies. But there has been so much talk about Turkish Stream; it is an issue that is frequently covered in the media. However, they are not informed about it.

In the meantime, the poll has shown that they do not take into consideration energy policies when they vote. In fact, energy issues rank eighth on the list of Turkey's most important problems. The first three are education, domestic security and economy.

What does this tell us?

It is normal. Energy prices are seen as a problem but they probably see it under the headline of the economy. When they ranked energy as eighth as the most important problem, I think they look at it as energy supply security. "Will I have access to gas or not?" "Will it be cut or not?" "Will I freeze in the middle of winter or not?"

Otherwise, when it comes to the question of what is the most important problem for Turkey's energy system, dependence on imported energy and energy prices emerge as the most important problems.

We asked the same question two different ways and the result were the same. The fact that the consumer sees high prices as a problem is normal. When it comes to dependence abroad, I find that interesting because they probably don't look at it from a strategic but rather a pragmatic point of view.

I relate it to the problems we had we Russia, when relations deteriorated with our most important supplier. There have been debates in the past, too, about whether there would be cuts in natural gas. They are concerned whether they will remain in the cold. Also, another factor could be the government's tendency to hold the outside world responsible for everything negative. So they might fear that foreign suppliers might cut the gas or that they are responsible for these high prices.

# Gazprom seeks gas arbitration with Turkish importers

Argus, 02.03.2017



Russian state-controlled Gazprom has applied to go to arbitration with Turkish private-sector importers over gas prices last month.

The application was made to the International Court of Arbitration (ICA) in the beginning of February, following a deadlock in talks over the 2017 price on Russian imports to Turkish private-sector firms. Turkish private-sector importers, which have a combined contractual import volume of 10bn m<sup>3</sup>/yr with Russian state-controlled Gazprom, argue that they are entitled to a 10.25pc discount to the oil-indexed formula price.

The Russian firm has been in talks with Turkish importers since the last quarter of 2016 and earlier said it would consider applying to ICA if the talks ended in a stalemate. Arbitration procedures do not prevent the continuation of negotiations between the parties to find mutually acceptable solutions.

The timing of a first hearing is not defined yet, but there may be more clarity on the timeline by the end of April. Gazprom suspended a previously agreed 10.25pc discount to formula gas prices effective from the start of the second quarter of 2016. It had agreed the discount with Turkish private-sector importers in spring 2015.

Russian president Vladimir Putin has said Turkey would be offered a discount after a deal was signed for the 31.5bn m<sup>3</sup>/yr Turkish Stream pipeline on 10 October. Russia is Turkey's largest supplier of gas. It delivered 24.5bn m<sup>3</sup> in 2016, or 52.9pc of the total, from 26.8bn m<sup>3</sup> or 55.3pc in 2015.

Russian gas is estimated to be the cheapest pipeline gas source for Turkish imports (see chart). Private-sector importers and state-controlled Botas are estimated to buy Russian gas at around \$183/000m<sup>3</sup> this quarter, up from \$157/000m<sup>3</sup> in the previous quarter in line with higher oil prices.

State-controlled Turkish gas firm Botas has also filed an application with ICA on 26 October 2015 following a talks deadlock with Gazprom. Governments of the two countries had reached a preliminary agreement on a 10.25pc price cut in Turkey's Russian gas imports, first announced in December 2014, with the reduction to be backdated to the start of 2015 once it had been signed. But the agreement was not signed, amid protracted talks on Russia's plans to build the Turkish Stream gas line to western Turkey at the time.

## Business in brief: Pipeline for gas to Turkey could be ready in four years, Delek-Avner ceo says

Haaretz, 03.03.2017



An underwater pipeline connecting Israel's massive offshore natural gas field Leviathan to Turkey could be built within four years, one of the partners in the project said Thursday. Israel has been pursuing several regional export deals for its newfound gas reserves and the Leviathan group is moving ahead with development plans since making its final \$3.75 billion final investment decision last week.

Yossi Abu, CEO of Delek Drilling and Avner Oil, said a new pipeline could have gas flowing to Turkey by the end of 2020, about a year after it comes online for the Israeli market.

"This is the target," he told reporters at a news briefing. Additional export destinations being discussed are Egypt, Europe and the Palestinian territories, including power plants in the Gaza Strip and West Bank, Abu said. Delek and Avner shares both ended 0.5% higher at 13.07 shekels (\$3.55) and 2.42 shekels, respectively.

Hadera Paper overcame a sharp drop in prices for its key packaging and printing and writing paper products in the fourth quarter of 2016 to post a small profit. The company, which is controlled by the FIMI private equity fund, said Thursday it earned a 4-million-shekel (\$1.1 million) profit in the three months, turning around from a 57-million-shekel loss a year earlier.

Revenues were down 10% in the quarter to 394 million shekels, led by a 17% drop in sales of packaging paper, to 110 million shekels. CEO Gadi Kunya attributed lower prices for packaging paper to lower world prices and stiffer competition from imports, whose prices fell because of the strong shekel. Hadera was able to offset the impact with a reduction of 11% per ton of paper in production costs, thanks to lower and energy costs in the quarter, he said. Shares of Hadera finished unchanged at 155 shekels.

# Israel views Turkey as major gas market, big economy

Anadolu Agency, 24.02.2017



Israel sees Turkey not only as a big market but also as a major economy in the region, Delek's Gas Pipeline Project Director Ofer Oberlander said.

Turkish and Israeli companies are currently discussing a possible gas pipeline to be built between Israel and Turkey from the Leviathan gas field in the Mediterranean Sea off the coast of Israel to Europe. The field holds an estimated 620 billion cubic meters of gas. Speaking on the sidelines of 17th International Energy Arena Oberlander said the Leviathan gas field is the biggest discovery of the Eastern Mediterranean discovered seven years ago.

"Leviathan's full development is going to be 2.1 billion cubic feet [bcf] a day, roughly 21 billion cubic meters [bcm] of natural gas a year. This is one of the largest offshore projects in oil and gas in the last year and a half," he said.

"When we look at the area, we see first of all the domestic Israeli market, and then we see the Palestinian Authority, we see Jordan, and in the second phase we see two bigger regional markets that are Turkey and Egypt," he added.

The first phase of the Leviathan development project will supply the Israeli domestic market, the Palestinian authority and Jordan, while the second phase is planned to supply Turkey and Egypt, according to Oberlander.

With regards to the development of regional markets, three major areas can be considered to forge ahead with developing energy relations. "We see Turkey not just as a gas market but also as a big economy with great people having regional significance in the area. We see [that] Egypt's domestic market which has abundant natural gas and lack of supply to the domestic market is growing rapidly. And we also see Egyptian energy facilities with established infrastructure and no construction risk," he explained.

Turkey is seen as a significant potential partner, and the next step is to put words and plans into action, he said, adding that he expects greater bilateral relations. The construction of the pipeline requires quite a lot of technical work and intergovernmental and commercial agreements between the governments, Oberlander concluded.

# Gazprom sales to Europe, turkey fall in February

Oilprice, 02.03.2017



Gazprom's sales of natural gas to Turkey and Europe, excluding the former Soviet Union countries, dropped to 582 million cubic meters per day in February, down by 34 million cubic meters per day from the January average, on the back of lower demand and a less attractive price compared to European hubs.

In January, sales had averaged 616 million cubic meters/day, Platts reports, citing Gazprom data. In February, however, Gazprom was unable to use the higher capacity of the OPAL line because of ongoing litigation, after it had increased the Nord Stream/OPAL deliveries in January.

Deliveries to Europe via Ukraine went down during the last week of February, which caused Ukraine's Naftogaz to issue a warning that pressure in the Russian gas transmission system at the entry to Ukraine had dropped to record low.

Still, in January and February combined, Russia's sales to Europe and Turkey increased by 21 percent compared to the same period last year. Sales to Greece, for example, rose by 20.6 percent compared to the same period of 2016, Gazprom said. Exports to Germany, France, and Slovakia also increased in the first two months of 2017.

For February, however, the drop-in sales was also due – apart from lower demand - to the converging prices in the Russian oil-indexed gas prices and the day-ahead price at European hubs. According to analysis by Platts, the oil-indexed price range is still slightly cheaper than prices at the TTF hub, but in the near future the TTF price is expected to drop well into the oil-indexed price range.

Earlier this week, Gazprom's Deputy Chairman Alexander Medvedev said that the company would increase how much it charges for its natural gas in the European Union this year, to US\$180-190 per 1,000 cubic meters, adding that Europe remains a priority market for the company. To compare, last year's average price of Gazprom's gas for Europe was US\$167 per 1,000 cu m, the lowest in 12 years.

# Leviathan agreement opponents won't admit mistake

Bloomberg, 01.03.2017



The interest of the Leviathan owners is not to develop the reservoir, because they want to get as much money as possible out of Tamar. There won't be anything, because there is nothing.

It's nothing but PR. The state should nationalize Leviathan and bring it back to state management, and put an end to this farce, in which Noble Energy and (Delek Group Ltd. (TASE: DLEKG) controlling shareholder) Yitzhak Tshuva do whatever they want with our gas" (television commentator Alon Nisser,). "Globes" analyzed the many risks overshadowing developing of the huge Leviathan natural gas reservoir.

There are many question marks concerning possible exports of Israeli gas from Leviathan to Jordan, Egypt, Turkey, Greece, and Italy. The actual situation has not changed since then. The deal with Jordan still lacks formal approval, but one thing has happened:

Noble Energy, Delek Group, and the Ratio Oil Exploration (1992) LP (TASE:RATI.L) partnership - the development partners in the rights to Leviathan - have made a final investment decision (FID) to spend a total of \$3.75 billion on developing the reservoir by the end of 2019, thereby confounding many assessments, including mine.

The significance of the FID is two-fold. The Leviathan developers now bear the full risk, and have used up their last chip for bargaining with the state. Minister of National Infrastructure, Energy, and Water Resources Yuval Steinitz can stop holding his breath now.

The meter is now running in Houston, where Noble Energy has its headquarters, and in Netanya, where Delek Group is located. If there are street demonstrations in Amman or a fiscal crisis in Jordan, Noble Energy will have to deal with it. If the economy's demand for gas does not grow at the planned pace, that is Tshuva's problem. The FID is having another, much less obvious, effect: it is dissipating all the hot air put out by the opponents of the gas plan.

The discredited theory that the developers are deliberately refraining from development of the reservoir - because they want to extort more benefits from the state, because they are waiting for global gas prices to rise, or because they want to keep the market for Tamar - was fostered and fed until the very last minute by commentators representing no one but themselves.

Since these people will never admit they were mistaken (and will go on persuading us that we are the ones who do not understand), I am taking this opportunity to point this out. And what about all the rest of the hot air? It has almost all vanished in less than a year.



First they said that the development of the gas reservoirs had no political significance - that it was all spin and lies by the Prime Minister's Office and the National Security Council. This was refuted by none other than Turkish President Recep Tayyip Erdogan, who decided to rejuvenate his relations with Israel around the negotiations for a gas agreement. They also said that the gas plan generated an anti-competitive solution that will perpetuate the gas monopoly of Tshuva and Noble Energy forever.

One year after Erdogan, along comes Greek company Energean and buys the rights to the Tanin and Karish reservoirs. Many people, myself among them, took Energean lightly, and regarded Tanin and Karish as nothing more than a midget, compared with the Tamar and Leviathan giants. In order to generate competition for Tshuva and Noble Energy, however, it is not necessary to bring Exxon Mobil here. One more real contender able to supply the marginal demand for gas is enough.

It is a fact that concern about losing customers in Israel pushed the Leviathan developers into hurrying to develop Leviathan before the Greek midget steals the remaining customers. What is left to the fanatic opponents of the gas agreement? They will repeat the old familiar arguments: the gas is too expensive, the developers will make too much money, and the punch line: the state has surrendered to the gas monopoly.

These are half-truths, at best. Yes, the price of gas can be halved, as proposed by former Minister of Environmental Protection Avi Gabai, but half of the price of gas is collected by the state in taxes, royalties, corporate tax, and in the future, in excess profits tax, courtesy of the Sheshinski Committee, as Gabai is again forgetting to mention.

Yes, it is true that the state "surrendered" to the monopoly, but it chose to do so, believing that Israel should not invest a single shekel of its own money in gas exploration, developing gas reservoirs, building marine gas infrastructure, or any other parts of the operation, other than the costs of security.

This is a debatable idea. In my opinion, it is better for the state to build gas production infrastructure and develop a services industry for gas reservoirs, as Norway did so successfully. This argument, however, does not alter the fact that the model of a partnership between the state and the developers, as outlined by the Sheshinski Committee and continued in the gas agreement, is working.

Yes, it is true that the state will spend €430 million on ships from Germany to protect the gas platforms. All the rest of the money, however - \$5 billion (\$3.75 billion on development and another \$1.2 billion on exploration) is being invested by the developers themselves out of their own pockets.

There is no other national resource in which the state invests so little in developing on the one hand, and taxes so heavily on the other. In every deal, there is a tradeoff. In this case, the tradeoff is the double-digit percentage of the developer's return.

Do they want the developer to get less? The tradeoff will be in the reliability of the supply. Do they want the state to nationalize the gas and develop it by itself? The tradeoff will be in the timetable, costs, and efficiency. There is no free lunch.

# Saudi Arabia still bears brunt of oil cuts as OPEC output drops

Bloomberg, 02.03.2017



Saudi Arabia continued to lead OPEC's efforts to cut production, helping the organization get closer to a goal set out in a historic accord last year.

Riyadh lowered oil supply by 90,000 barrels a day from a month earlier to 9.78 million in February, according to a Bloomberg News survey of analysts, oil companies and ship-tracking data. It was the second month in a row that the world's biggest crude exporter pumped below its own target of 10.06 million barrels a day. Overall, the OPEC' production fell to 32.17 million barrels a day in February, a 65,000 barrel-a-day drop from January, the first month of the accord.

The 10 members of the group that pledged to make cuts in Vienna in November implemented 104 percent of those reductions, largely because Saudi Arabia went beyond its target. Those countries' efforts were offset by increases from Iran, Nigeria and Libya that were permitted under the terms of the agreement, meaning OPEC's total output remains 415,000 barrels a day above the target set out in the Nov. 30 deal. The group as a whole is only about 70 percent of the way toward the production level it deemed necessary to eliminate a global oversupply and boost prices.

Iraq's production dropped by 50,000 barrels to 4.44 million barrels a day, the survey showed. A strike by oil workers in Gabon -- the tiniest member -- contributed to a decline of 15,000 barrels a day. Angola, among the most compliant members in January, failed to meet its target in February after the start-up of two oil projects. Output there ramped up 20,000 barrels to 1.69 million barrels a day.

Iran's output increased to 3.83 million barrels a day, slightly above its goal of 3.797 million barrels a day. As part of the deal, Iran was allowed to increase supply after years of sanctions that hurt its oil industry. Libya and Nigeria -- both exempt from the accord -- saw combined 50,000 barrel-a-day growth. Investors are also paying close attention to Russia and 10 other oil-producing countries, which agreed in December to join OPEC in cutting output. A monitoring committee last week found the non-OPEC countries achieved 66 percent of their pledged cuts for January.

In Russia, the largest non-OPEC participant in the deal, oil output was unchanged in February at about 11.1 million barrels a day after a cut of 117,000 barrels a day in January, according to Energy Ministry data. The nation pledged in December to gradually reduce supply by as much as 300,000 barrels a day from a post-Soviet high of 11.23 million in October. Benchmark Brent crude prices have rallied about 20 percent since the November pact amid optimism the market will re-balance following three years of glut. OPEC and its allies will decide at meetings in May whether to prolong the accord past June 30.

# No peak oil for America or the world

Forbes, 02.03.2017



**Oil is more plentiful than you can imagine. And we keep figuring out easier and more economical ways to get it out of the ground.**

**In 1938, the famous geologist M. King Hubbert came up with the concept of peak oil, which is defined as having extracted half of the recoverable, conventional oil reserves. After that, oil production declines and cannot keep up with growing demand as the population continues to rise. We used to think about Peak Oil like this – the reserves are finite, we know where they are and how long they will last, and we will start running out soon.**

We used to think about Peak Oil like this – the reserves are finite, we know where they are and how long they will last, and we will start running out soon. But with recent technological innovations, we keep finding new oil deposits that are now recoverable and a peak won't happen for a century or more.

In Hubbert's time, most of the conventional oil reserves had already been discovered. Hubbert went on to predict that U.S. production would peak in 1969, and it did appear to peak in 1970. World reserves were supposed to peak around 2010. However, about 20 years ago, the industry really leapt forward on the technologies to find oil and to extract it. Particularly fracking.

This changed everything. BP's Spencer Dale summed it up nicely, "For every barrel of oil consumed over the past 35 years, two new barrels have been discovered." And this shows no sign of slowing down any time soon. Peak oil has probably moved out a hundred years or more.

While we talk about decreasing our fossil fuel use, it's easy to forget that humans find it really hard not to use what they have a lot of. And we have a lot of oil. And gas. And coal. In fact, the United States has more oil, gas and coal together than any other country in the world.

Fossil fuels are deposits of hydrocarbon materials in the earth. The conventional types are petroleum or crude oil, coal and natural gas. These deposits form from the organic materials in bodies of long-dead organisms trapped in accumulating sediments, and buried for geologic time.

For petroleum, these were primarily marine organisms such as plankton deposited over the last 600 million years, although most of the petroleum left formed between 65 and 2 million years ago. For coal, it was plant material primarily from forests deposited during the Carboniferous between 350 and 270 million years ago before microbes had developed that could breakdown lignin, the real hard parts of wood. Fossil fuels form when these organic materials are heated and pressed as they are buried deeper in the Earth. Natural gas consists of the volatile components coming off of petroleum, mainly methane (CH<sub>4</sub>) but also some ethane, propane and butane.



Conventional oil and gas are rarely found at the original site of formation. Coal does not migrate from its original site of deposition. Because petroleum and gas are fluid and less dense than rock, both migrate laterally and vertically through more permeable rocks until they are trapped beneath dense impermeable rocks that have been folded or faulted into an advantageous shape for trapping. Petroleum and gas are extracted from these conventional traps, or reservoirs, through wells drilled from the surface.

However, unconventional deposits are primarily those where the oil and gas could not migrate to conventional traps, but are stuck in the very tight and tiny pores and fractures in these tight rocks, mainly shales and tight sandstones, or are not very fluid like heavy oils and tars. The ability to seriously exploit these unconventional reserves did not exist practically before 2000.

Think of conventional versus unconventional oil like jelly donuts versus tiramisu (see figure). Drilling into conventional sources is like sticking a straw in a jelly donut – the petroleum is trapped in a large single formation that just flows out under pressure.

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Drilling into unconventional sources like oil and gas shale is quite different, more like tiramisu – the petroleum is in many layers that have to be individually tapped using horizontal drilling and fracking methods to open up the rock.

Saudi Arabia has a bunch of really big jelly donuts. The United States has lots of tiramisu, plus some pretty good jelly donuts as well. But we keep finding more tiramisu. Hydraulic fracturing, or fracking, of these rocks has allowed us to recover gas and oil from these tight rocks, and horizontal drilling, as well as drilling many-directional strings from a single well, have allowed pinpoint targeting of these deposits, making recovery economic. If the crude is thick and tarry, and won't flow at all, like the Alberta tar sands, it must be removed by using heat, steam or solvents and mixed with more fluid crude for transport.

Unfortunately, the environmental cost of unconvensionals is even greater than for conventional sources. World oil and gas reserves are estimated in four ways:

- 1) those that are economically recoverable (this is what is used most often), also known as proven reserves,
- 2) those that are technically recoverable (we think we could recover these in the future),
- 3) total or in-place reserves (the total amount of oil and gas we know of but know we can't get it all out yet), and
- 4) Unknown reserves (those we do not know about yet, primarily under ice sheets).



We still only use the first two to estimate global oil reserves, and so they keep changing as we develop new technologies and find new unconventional reserves. Surprisingly, access to so much oil does not mean the price will go down or stay down. The price of oil is political and is set by the big players, particularly by the Organization of Petroleum Exporting Countries (OPEC), led by Saudi Arabia, in a way that maximizes profits and controls supply and demand.

Too much oil on the market means the price drops and oil-producing countries don't make as much money as they want to. Too little oil on the market means the price skyrockets and people begin to use less oil, become more efficient and move towards non-petroleum sources like electric vehicles. Bad for oil-producing countries

So it is a tightrope walk for oil producers. As you would expect, these new technologies, and the flood of unconventional sources, have caused some political and economic disruptions. Oil prices had been about \$100/bbl for several years running up to 2014. But as shale oil began flooding the global market, the price began to fall in 2014. Usually, when that happens, OPEC cuts production to get the prices back up.

Instead, Saudi Arabia initiated an economic oil war against the United States by refusing to cut production in November of 2014. This was an attempt to drive U.S. shale oil producers bankrupt and slow the flow of North American shale oil onto the global market. In fact, OPEC increased oil production further, which drove oil prices down even more, eventually dropping to about \$30/bbl in 2016, a price at which shale producers can't even break-even.

Initially, this oil war made the U.S. shale oil industry leaner and meaner as the big guys like Exxon bought out the small guys going bankrupt. But eventually, even the big guys had to decrease shale oil production, and even some conventional reserves have been closed down. So the oil war seems to have worked out for the Saudis and OPEC. According to Chris Helman of Forbes, the Saudi's tactic has brought a halt to the shale boom and has also potentially scared off a whole generation of exploration into the deepwater and arctic. "75% of America's drilling rigs are in mothballs and fracking crews have been tossed to the wind."

Oil prices are back up over \$50/bbl and holding steady. The unconventional oil is still there, it's just that OPEC will not make it very economic to recover until we really need it. But certainly, Peak Oil is no longer in sight.

# Saudi Arabia wants oil prices to rise to \$60 in 2017

Reuters, 28.02.2017



Saudi Arabia wants crude oil prices to rise to around \$60 a barrel this year, five sources from OPEC countries and the oil industry said.

This is the level the OPEC heavyweight and its Gulf allies - the United Arab Emirates, Kuwait and Qatar - believe would encourage investment in new fields but not lead to a jump in US shale output, the sources told Reuters news agency. The OPEC, Russia and other producers pledged last year to cut production by about 1.8 million barrels per day (bpd) from January 1. The first cut in eight years is intended to boost prices and get rid of a supply glut.

Crude prices have risen by more than 14 percent since the November pact but are still only trading around \$56 a barrel despite record compliance by OPEC and non-OPEC members. OPEC officials have repeatedly said the group does not target a specific oil price and their focus is on drawing global oil inventories and helping the market to re-balance.

But behind closed doors, Riyadh and its Gulf OPEC allies hope to see a higher level because the low price has pressured their finances and stoked fears of a future supply shortage. However, they do not want the price to be so high that it encourages rival US shale producers, which were hard hit by the slump in oil prices, to ramp up production again. Advances in technology have made it easier for them to adapt quickly to oil price fluctuations.

More than \$1 trillion worth of oil projects have been cancelled or delayed since mid-2014. A decline in investments in future oil projects triggered worries that this could lead to a supply shortage and spike in oil prices. Oil fields take around four years to develop before production can start, whereas US shale oil can now be extracted within a few months of a decision.

"In general, something around \$60 this year is good; \$60 will not encourage that big increase in shale," one OPEC source told Reuters news agency, adding that shale oil production is expected to grow by about 300,000 bpd this year.

# Cuts, what cuts? Asia gets more crude oil from OPEC, Russia

Reuters, 27.02.2017



If you were looking for evidence of reduced crude oil supply from OPEC and its main ally in cutting output to boost prices, Russia, then stay away from Asia's top importers.

January import data from China, India and Japan do little to show the impact of reduced crude supply, but do suggest that prices have risen in response to move by the producer group and its allies to remove some 1.8 million barrels per day (bpd) from global oil markets. Top importer China's January data provides a case in point. Imports rose 27.5 percent from the year-earlier month to 34.03 million tonnes, equivalent to 8.01 million bpd.

That's an impressive increase, believed mainly to be on the back on ongoing additions to strategic reserves and rising demand from smaller, private refiners that are now allowed to import crude. Saudi Arabia - the main driver behind OPEC's decision in November to cut output - increased exports to China by 18.9 percent to the equivalent of 1.18 million bpd in January from the year earlier month.

This was also up a massive 40 percent from the 841,000 bpd China imported from the kingdom in December. The increase speaks more of a determined attempt by Saudi Arabia to keep key customers in Asia well supplied, and cut supplies to other buyers in other, less vital parts of the world.

However, there is another factor to consider: Chinese customs data does tell us where each barrel of oil comes from, but it doesn't tell us when that barrel was shipped. It's possible that the surge of imports from Saudi Arabia in January was partially related to barrels moving from floating or other storage to delivery, as traders responded to the expected tightening of the market and move of the oil futures curve from contango toward backwardation.

Nonetheless, even if some of the barrels arriving are from trade-related storage plays, it's still clear that China isn't feeling its supplies being constrained by the countries committed to cutting output. Imports from Russia rose 36.5 percent in January from the same month in 2016 to the equivalent of 1.08 million bpd, while those from Angola surged 63.5 percent to 1.16 million bpd.

Other OPEC producers also saw their share of Chinese imports grow by more than overall January imports, with Iraq up 43.2 percent and Venezuela by 80.1 percent. The losers among major suppliers were Iran, with China's imports dropping by 1.3 percent in January, and the United Arab Emirates (UAE), whose exports to China declined by 15.5 percent. Turning to India, its imports from Saudi Arabia amounted to 925,700 bpd in January, up 36.1 percent from December and down 1.4 percent from the same month in 2016.



India also imported more in January than it did in December from OPEC members Iran (up 1.5 percent), Iraq (up 2.1 percent) and Angola (up 60.2 percent). However, imports from the UAE were down 8 percent and from Kuwait by 41.4 percent, although that country isn't a major supplier to India.

In Japan, Asia's third-biggest oil importer, purchases from top supplier Saudi Arabia fell to 1.3 million bpd in January from December's 1.43 million, but were still 11.8 percent higher than the same month last year.

Imports from Japan's number two supplier, the UAE, fell from 884,057 bpd in December to 752,973 bpd in January, while imports from Russia rose to 214,498 bpd from December's 194,285. It's also worth noting that Japan's total January imports were 3.315 million bpd, some 349,000 bpd lower than December's 3.664 million bpd.

Overall, imports from Saudi Arabia in January by Asia's three biggest oil purchasers rose to 3.41 million bpd from 2.947 million in December, a 15.2 percent jump. The picture that emerges is Asia is largely unaffected by OPEC and its allies' cuts to output - at least for now.

The main impact is being felt through higher prices, with Chinese customs data showing that the cost of a barrel of Saudi oil went up to the equivalent of \$53.77 in January from \$45.20 in December. This was a far sharper increase than the overall cost of China's oil, which rose to \$52.20 a barrel in January from December's \$46.30.

It's pricing that may well end being the major driver of change in Asia's oil markets, with buyers being tempted away from cargoes from the OPEC and allied producers toward those outside of the deal to limit output, such as the United States.

China imported 1.88 million of crude from the United States in January, the equivalent of one Very Large Crude Carrier (VLCC). For the whole of last year, it imported the equivalent of two VLCCs from the United States.

If U.S. oil can compete price-wise with cargoes from the Middle East, it may tempt Chinese refiners to buy more, especially if the OPEC output cuts do drain stored oil and start to crimp available prompt cargoes. For OPEC and Russia, the question may eventually become deciding whether they can continue to keep Asia well supplied and maintain their relative market shares, while still inflicting enough pain elsewhere to keep oil prices on a rising trend.

# Iran describes OPEC compliance with oil cuts as ‘acceptable’

Reuters, 27.02.2017



OPEC’s level of compliance with production cuts in January has been acceptable, Iran’s oil minister said on Monday, expressing hope for further cooperation from non-OPEC members in the near future.

The OPEC agreed on Nov. 30 to cut output by 1.2 million bpd to 32.5 million bpd for the first six months of 2017, in addition to 558,000 bpd of cuts agreed to by producers such as Russia, Oman and Mexico. “OPEC members’ level of compliance to cut oil production in January has been acceptable and we predict more cooperation from the non-OPEC members in near future,” Bijan Zanganeh was quoted.

He added that Iran’s level of production has reached 3.9 million bpd in February. Zanganeh also said that Iran will launch before the beginning of the new Iranian year (March 20) its first tender for foreign investment to develop the Azadegan oilfield but added that the tender will not be public and will be limited to only a few companies.

Iran’s first new-style tender since the lifting of sanctions has been postponed several times for unspecified reasons. OPEC’s third-biggest oil producer hopes its new Iran Petroleum Contracts (IPCs) will draw foreign companies and boost output after years of under-investment. But foreign firms have so far made little inroads into the country despite the lifting of sanctions.

Zanganeh dismissed reports that U.S. President Donald Trump’s tough stance against Tehran has made foreign firms more cautious to invest in the energy sector. “No company has slowed down its negotiations with Iran,” Zanganeh was quoted as saying by the IRNA news agency.

# Putin's Russia seen dominating European gas for two decades

Bloomberg, 01.03.2017



Europe has wanted to wean itself from Russian natural gas ever since supplies from its eastern neighbor dropped during freezing weather in 2009. Almost a decade later, the region has never been more dependent.

Gazprom shipped a record amount of gas to the European Union and accounts for about 34 percent of the trading bloc's use of the fuel. Russia will remain the biggest source of supply through 2035, Royal Dutch Shell said, echoing comments by BP. EU lawmakers have had their hearts set on diversifying supplies with LNG delivered by tanker from the U.S., where production of the fuel skyrocketed last year.

So far, those shipments have failed to materialize amid a lack of firm contracts and higher prices outside Europe. Overall, LNG shipments to the region, led by Qatar, were stagnant last year. "Russia will for sure remain Europe's largest gas supplier for at least two more decades," even if most of the incremental gains in EU imports are met by LNG from somewhere else, said Vladimir Drebenstov, chief economist for Russia and CIS at BP in Moscow.

Diversifying energy supplies and routes is one the key priorities for the European Commission, a spokesman with the commission said by email. Gazprom Chairman Viktor Zubkov reiterated on Monday that 2017 European exports are expected to be close to last year's level.

But the company may face greater competition from LNG this summer as its oil-linked prices become less attractive relative to market rates, according to London-based analysts from Energy Aspects Ltd. to BMI Research.

More LNG will arrive in Europe from about mid-year as new plants start producing the fuel in the U.S. and Australia, increasing supply options for customers. Russian gas will also become more expensive after last year's 52 percent gain in Brent crude.

The company has means to remain competitive. After adjusting price formulas in its export contracts, Gazprom has diluted the influence of oil prices in favor of linking revenue to Europe's traded gas markets, a person close to the state-controlled producer said in October. That means its prices will adjust if a sudden inflow of gas from elsewhere depresses the market.

"I think there's a lot more that Russia can do," Melissa Stark, managing director for Energy and Utilities at Accenture Plc, said in an interview in London. "They can even be more commercial than they have been in the past. They've not had to be that commercially aggressive because they've a long-term contract type situation that they've been able to dominate."



Europe's domestic output is declining because of the natural aging of fields in the North Sea and production limits at the Dutch Groningen field, Europe's biggest. "There should be space for both increased LNG and Russian gas" in light of shrinking domestic production in the EU and improving demand, according to Christopher Haines, head of oil and gas at BMI Research. That's provided "Russian gas prices continue to evolve to more closely reflect European hub prices," he said.

Any fluctuations in Russian supplies into Europe tend to whipsaw markets. In January 2009, when the dispute with Ukraine last disrupted supplies, U.K. prices soared as much as 27 percent in one day. Russia has enough reserves to remain Europe's main gas provider for years to come, President Vladimir Putin said in December.

"Gazprom is supplying more gas to Europe than Russia or the Soviet Union ever did," he said. "We have enough gas for ourselves, even considering the growing requirements of the Russian economy, and for our counteragents, the buyers of our gas."

LNG will by 2025 surpass Norwegian gas as a share of supply, with both the liquid fuel and imports from Russia needed to offset declining domestic production, according to Shell, which controls about a fifth of the world's LNG trade. Russia's share of EU gas consumption will rise to 40 percent by 2035 from more than 30 percent now, according to BP.

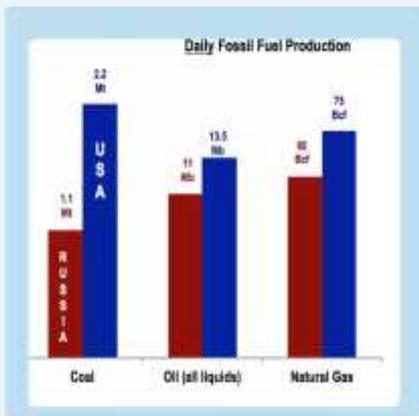
Gazprom gas sales abroad account for more than 10 percent of Russia's total exports and the company sees its market share holding or rising slightly to about 35 percent by 2025, management board member Oleg Aksyutin told investors in Singapore Tuesday.

Europe will remain Gazprom's "priority market" and no one else can provide gas at the same price, Deputy Chief Executive Officer Alexander Medvedev said at the same event. U.S. LNG costs some 30 percent more than Gazprom's gas in Europe supplied through its "most expensive" route, via Ukraine, Aksyutin said.

Russian volumes will stay above LNG in Europe if Asian demand is strong enough to absorb an oversupply of LNG, the Oxford Institute for Energy Studies said in a report published this week. "There are so many moving parts now," said James Henderson, an analyst at the OIES said. "So many more things are happening around the world that have an impact on the European gas market."

# US set to rival Russia in oil and natural gas exports

Forbes, 25.02.2017



President Trump has promised to roll back federal regulations to help U.S. oil and natural gas and to open up new areas for development. The administration's energy priority is to "unleash America's \$50 trillion in untapped shale, oil, and natural gas reserves."

Given our low prices, drilling in new areas might not seem so critical today but will become increasingly so because oil and gas aren't yet replaceable at scale, and demand will continue to mount. Overall, to say that we will now be implementing more pro-oil and pro-natural gas policies might be the biggest understatement you will hear this year.

Think about it: former Texas governor Rick Perry is head of the U.S. Department of Energy and former ExxonMobil CEO is head of the U.S. Department of State. Thus, the U.S. could rival Russia as the world's largest oil and gas exporting machine.

Russia accounts for over 20% of the world's exported natural gas, and gas is easily the world's most important fuel going forward given climate commitments: gas emits 50% less CO<sub>2</sub> than coal and 30% less CO<sub>2</sub> than oil. In 2016, "Russia tops Saudi Arabia as the world's largest oil exporter," and oil is the world's most important fuel, with no significant substitute whatsoever.

With flexible liquefied natural gas (LNG) export contracts, a stable democracy and legal system, and transparent and technically advanced companies that countries desperately seek to do business with, U.S. oil and gas is highly desirable.

The U.S. is now slated to have the capacity to export 10-12 Bcf/day of LNG to the world by 2020, this is 1/3 of the current global market and a boom from virtually nothing a year ago. At about 2 Bcf/day, we are now exporting LNG to some 20 nations, with U.S. supplies steadily moving across the spectrum in a single year: first to Latin America, then to Asia, and now over to Europe, Russia's most vital energy client. In fact, U.S. LNG is so desired in Europe that some nations have offered to accept higher prices for it, willing to lose money to lower the reliance on Russia.

U.S. oil and gas exports are crucial to the domestic and global security benefits of lowering Russia's influence around the world, clearly explaining why they have bi-partisan support. Given the problems that our main LNG competitors face, we could easily become the go-to source of LNG around the world: Australia confronts huge cost overruns, and Qatar has placed a moratorium on new capacity projects. Exports are expected to be streamlined under the Trump administration, especially since Perry and Tillerson, two oil and gas supporters from Texas, know how crucial exports are to U.S. producers.



Our natural gas prices, for instance, would be about 50% lower if not for the Mexican export valve. Mexico is now taking in about 4.1 Bcf/day of U.S. piped gas, with the capacity to import 15 Bcf/day by 2020, double the capacity today.



# Announcements & Reports

## *Brexit's Impact on Gas Markets – Irish Options: IBP, NBP or TTF?*

**Source** : OIES

**Weblink** : <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2017/03/Brexit-impact-on-Gas-Markets-Irish-Options-IBP-NBP-or-TTF.pdf>

## *Oil Benchmarks: What next?*

**Source** : OIES

**Weblink** : <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2017/03/Oil-Benchmarks-what-next.pdf>

## *Nord Stream 2 and Ukraine: Costs Should Decide*

**Source** : Russian National Energy Security Foundation

**Weblink** : [http://brusselsenergyclub.org/get\\_file/id/nord-stream2final.pdf](http://brusselsenergyclub.org/get_file/id/nord-stream2final.pdf)

## *Natural Gas Weekly Update*

**Source** : EIA

**Weblink** : <http://www.eia.gov/naturalgas/weekly/>

## *This Week in Petroleum*

**Source** : EIA

**Weblink** : <http://www.eia.gov/petroleum/weekly/>

# Upcoming Events

## *15th Global Oil & Gas Turkey*

**Date** : 15 – 16 March 2017

**Place** : Istanbul - Turkey

**Website** : <http://www.global-oilgas.com/Turkey/Home/>

## *New Zealand Petroleum Conference 2017*

**Date** : 21 March 2017

**Place** : New Plymouth - New Zealand

**Website** : <http://www.petroleumconference.nz/>



## *Turkey 2nd International Underground Gas Storage Conference*

**Date** : 12 - 14 April 2017  
**Place** : Ankara - Turkey  
**Website** : <http://tugs2017.org/en/main-page/>

## *International LNG Summit*

**Date** : 24 - 25 April 2017  
**Place** : Barcelona, Spain  
**Website** : <http://lngsummit.org/>

## *CIS Oil & Gas Summit*

**Date** : 26 – 27 April 2017  
**Place** : London, United Kingdom  
**Website** : <http://cissummit.theenergyexchange.co.uk/>

## *FLAME*

**Date** : 08 – 11 May 2017  
**Place** : Amsterdam, The Netherlands  
**Website** : <https://energy.knect365.com/flame-conference/>

## *Iraq Petroleum 2017*

**Date** : 22 – 23 May 2017  
**Place** : London, United Kingdom  
**Website** : <http://www.cwciraqpetroleum.com/>

## *Turkmenistan Gas Congress*

**Date** : 23 May 2017  
**Place** : Turkmenbashi, Turkmenistan  
**Website** : <http://www.oilgas-events.com/TGC>

## *24th Caspian International Oil & Gas Exhibition*

**Date** : 31 May – 03 June 2017  
**Place** : Baku, Azerbaijan  
**Website** : <http://www.caspianoilgas.az/en-main/>

## *Future Oil & Gas*

**Date** : 06 – 07 June 2017  
**Place** : London, United Kingdom  
**Website** : <http://www.futureoilgas.com/>



### *Offshore West Africa*

**Date** : 06 – 08 June 2017  
**Place** : Lagos, Nigeria  
**Website** : <http://www.offshorewestafrica.com/index.html>

### *Big Gas Debate 2017*

**Date** : 14 June 2017  
**Place** : London, United Kingdom  
**Website** : <http://www.theenergyexchange.co.uk/big-gas-debate/>

### *International Conference on Oil & Gas Projects in Common Fields*

**Date** : 02 July 2017  
**Place** : Amsterdam, The Netherlands  
**Website** : <http://www.waset.org/conference/2017/02/amsterdam/ICOGPCF>

### *Cuba Oil & Gas Summit 2017*

**Date** : 02 July 2017  
**Place** : Havana, Cuba  
**Website** : <http://www.cubaoilgassummit.com/>

### *22nd World Petroleum Congress*

**Date** : 09 - 13 July 2017  
**Place** : Istanbul, Turkey  
**Website** : <http://www.22wpc.com/22wpc.php>

### *7th Iraq Oil & Gas Conference*

**Date** : 28 – 30 November 2017  
**Place** : Basrah, Iraq  
**Website** : <http://www.basraoilgas.com/Conference/>