

# Energy in East Europe

Issue 234 / February 24, 2012

## Analysis

Poland's PGE to diversify fuel mix	4
Gazprom cuts prices for Europe	6
Bulgaria renewables: Green power blues	8
Stuck on Gazprom's gas needle	10

## Electricity news

Bulgaria amends energy law	11
New grid rules for wind projects	11
Special supply rights for Aluminij	12
Inter RAO eyes European plants	12
Lithuania to sell on Nord Pool	13
PGE signs \$2.9bn Opole contract	14
Court upholds Polnoc permit ruling	14
Eolica to cancel suit against TSO	15
TSO loses head over February freeze	16
TSO net profit rises tenfold	16
Ministry calls for 40 GW by 2017	17
OGK-2 considers new share issue	17
IES' debt weighs on merger plans	17
Regional support for RusHydro	18
Quadra raises 2012 capex budget	18
Lower output for IES gencos	18
KTZ tests Kolpino steam turbine	19
Srbijagas to hold talks with GE	19
Hattat to build 1.3-GW coal plant	19
Socar to add 600 MW of capacity	20
Akfen 450-MW CCGT approved	20
GE wins Erzincan CCGT contract	20
Summer sale of last two gencos	20
SPF sells stakes in discos	21
EBRD considers wind park loan	21

## Data

East European Exchanges	22
-------------------------	----

## Oil & gas news

Shell buys into Petromanas blocks	23
Study supports Baltics gas link	23
South Stream FID in November	23
Firtash regains control of Emfesz	24
PGNiG files suit against Gazprom	24
Hydrocarbons tax due in 2015	24
PKN plays down shale gas talk	25
San Leon finds shale gas zones	25
TSO receives pipeline permit	25
TSO signs pipe supply deal	26
Transgaz posts 2011 net profit	26
Bashneft, Lukoil win Nenets blocks	26
Rising output and sales for Itera	26
Srbijagas upbeat on South Stream	27
Cutting gas usage to take years	27
Trio apply for exploration permits	27
Ukraine accused of gas theft	27
KOV secures production license	28

## PGNiG unveils gas release plans

Poland's dominant natural gas producer and distributor, PGNiG, has offered to sell up to 70% of its annual gas portfolio, or 9.4 billion cubic meters, at auction between 2013 and 2015, in a first step towards liberalization of the country's gas market. Its plans for a gas release program as part of sector deregulation, which is undergoing market consultation, were presented in a document published February 15 on the state-controlled monopoly's website.

The price of the gas would be based on the average costs incurred by PGNiG for imports and domestic production. PGNiG produces slightly more than 4 Bcm/year and imports around 10 Bcm/year under a long-term take-or-pay contract with Gazprom that is indexed to oil prices.

"According to the company's forecasts, the price of natural gas after the market is liberalized will tend to level with those  
*(continued on page 3)*

## Major gas discovery for Romania

Austria's OMV announced February 22 a major natural gas discovery in the Romanian sector of the Black Sea, with recoverable resources estimated at up to 3 Tcf of gas. The development could potentially transform Romania's energy sector and even provide a new source of gas for the planned Nabucco gas pipeline to central Europe.

"This may be the biggest find in OMV's history," OMV's chief executive officer Gerhard Roiss declared during a webcast press conference in Vienna to present the company's fourth quarter results.

The Domino-1 well, which is located in the Neptun Block, 170 kilometers offshore in water approximately 930 meters deep, encountered 70.7 meters of net gas pay, resulting in a preliminary estimate for the accumulation ranging from 1.5 to 3 trillion cubic feet (42 to 84 billion cubic meters), OMV said in a statement.

OMV's Romanian subsidiary Petrom, in which it holds a 51% stake, has a 50% stake in the Neptun block, which contains the Domino-1 exploration well, drilled by its joint venture partner ExxonMobil.

The Domino-1 well is the first deep water exploration well offshore Romania

and has a total depth of more than 3,000 meters below sea level. The press release said that both ExxonMobil Exploration and Production Romania, an affiliate of ExxonMobil Corporation and OMV Petrom, confirmed a potentially significant gas discovery offshore Romania but ExxonMobil, in a brief statement to Platts, later declined to confirm the discovery, saying only: "As operator of the Domino-1 well, we are still evaluating the results."

Petrom chief executive Mariana Gheorghe said the discovery was good news for Romania. "It is encouraging for us in Romania as we are looking for further opportunities given our industry is quite old," she told reporters later on a conference call. "In terms of the Romanian impact, it is too early to say what the impact is, but clearly if it is proven it will support the energy security of country and continue to support economic growth in the country."

Gheorghe also said she hoped the Romanian authorities would support the Neptun development. "The Romanian authorities have been supportive of [us] in licensing, enabling us to explore and assess the commercial viability of the find," she said. "We also want the  
*(continued on page 2)*

## Major gas discovery for Romania

...from page 1

Romanian authorities to create the necessary [legal] framework to allow the development of the discovery.”

OMV said it and ExxonMobil now plan new 3-D seismic acquisition during 2012. The evaluation of the Domino-1 well results and the new seismic will determine the next step for the partners to develop Neptun. “It is too early in the data evaluation and exploration process to determine whether the Neptun block will ultimately prove to be commercially developable or not,” OMV said.

“However, should further work confirm the technical and commercial feasibility of deepwater gas production from the Neptun block, further investment during both the exploration and development phases could reach several billion dollars with the potential for first production toward the end of the decade at the earliest,” it said.

OMV upstream chief Jaap Huijskes said that additional wells would be drilled to appraise the find, and that first production would be “some time off”. He added the cost of developing the discovery would be in the “multiple billions of dollars.”

Asked though whether OMV would consider bringing in a third partner to help carry the cost burden, Huijskes said it was not on the agenda for now. “We are not looking for a partner, it is not in the plan, though we cannot exclude that in the future,” he said.

### Supply for Nabucco?

Roiss also said any future gas from the Romanian Black Sea could be used in the planned Nabucco gas pipeline. “Discoveries of this size need an international pipeline like Nabucco,” Roiss said.

Earlier February 22, Roiss said he was “open” to the idea of changing the size of Nabucco to ensure the project remains viable for bringing Caspian gas to Austria. “What is important is there will be a pipeline to bring gas to Baumgarten,” Roiss said. “If it is possible to change Nabucco to different dimensions, I am open to that”.

Nabucco is one of a number of competing projects looking to bring gas from Azerbaijan and the Caspian region to Europe, though the situation has been muddied by an agreement between Azerbaijan and Turkey to build their own link. Nabucco is planned to run from eastern Turkey to Baumgarten, but with the possible new Azerbaijan-Turkey line, Nabucco may not need to start so far east and could pick up the Azerbaijan-Turkey line in western Turkey. Roiss said the main goal was to find a solution, one that could also help reduce the company’s investments in the Nabucco project. “We are not a pipeline company, we are an upstream company,” Roiss said.

OMV is one of six shareholders of Nabucco along with RWE, Hungary’s MOL, Romania’s Transgaz, Bulgaria’s Bulgargaz and Turkey’s Botas.

ExxonMobil and Petrom signed the exploration deal for Neptun, which covers some 9,900 sq km, in December 2008. Initially, the two companies worked together to acquire 3-D seismic to evaluate the block’s exploration potential. In 2009-2010, Petrom and ExxonMobil acquired more than 3,000 sq km of 3-D seismic data in the largest seismic program ever undertaken in Romania.

Analysts have said Neptun could be a game-changer for both Petrom and Romania. “We view this area as one of the most exciting parts of Petrom’s (and OMV’s) exploration portfolio,” KBC Securities said in a note last month. “The area is very underexplored and thus could hold significant exploration upside,” it said.

**platts** Energy in East Europe

Issue 234 / February 24, 2012

ISSN: 1479-2982

#### Editor

Martin Burdett  
Martin\_Burdett@platts.com  
+33-950-420-079

**Editorial Director, EMEA Power**  
Sarah Cottle

**Editorial Director, Global Power**  
Larry Foster

**Director, Design & Production**  
Dominic Pilgrim

**Vice President, Editorial**

Dan Tanz

**Platts President**

Larry Neal

**Manager, Advertisement Sales**

Kacey Comstock

Energy in East Europe is published twice monthly by Platts, a division of The McGraw-Hill Companies, registered office: 20 Canada Square, Canary Wharf, London, UK, E14 5LH.

Officers of the Corporation: Harold McGraw III, Chairman, President and Chief Executive Officer; Kenneth Vittor, Executive Vice President and General Counsel; Jack F. Callahan, Jr., Executive Vice President and Chief Financial Officer; John Weisenseel, Senior Vice President, Treasury Operations.

Prices, indexes, assessments and other price information published herein are based on material collected from actual market participants. Platts makes no warranties, express or implied, as to the accuracy, adequacy or completeness of the data and other information set forth in this publication ('data') or as to the merchantability or fitness for a particular use of the data. Platts assumes no liability in connection with any party's use of the data. Corporate policy prohibits editorial personnel from holding any financial interest in companies they cover and from disclosing information prior to the publication date of an issue.

Copyright © 2012 by Platts, The McGraw-Hill Companies, Inc.

Permission is granted for those registered with the Copyright Clearance Center (CCC) to photocopy material herein for internal reference or personal use only, provided that appropriate payment is made to the CCC, 222 Rosewood Drive, Danvers, MA 01923, phone (978) 750-8400. Reproduction in any other form, or for any other purpose, is forbidden without express permission of The McGraw-Hill Companies, Inc. For article reprints contact: The YGS Group, phone +1-717-505-9701 x105 Text-only archives available on Dialog File 624, Data Star, Factiva, LexisNexis, and Westlaw.

Platts is a trademark of The McGraw-Hill Companies, Inc.

#### To reach Platts

E-mail: support@platts.com

#### North America

Tel: 800-PLATTS-8

#### Latin America

Tel: +54-11-4804-1890

#### Europe & Middle East

Tel: +44-20-7176-6111

#### Asia Pacific

Tel: +65-6530-6430

#### Advertising

Tel: 1+720-548-5508

The McGraw Hill Companies

## PGNiG unveils gas release plans

...from page 1

in the Czech Republic and Germany. The German market is expected to be a benchmark for the prices in Poland," PGNiG said. German gas prices are currently around 15% higher than in Poland.

The program is scheduled to start next January on the condition that the country's energy regulator, URE, releases PGNiG and other gas suppliers from the obligation of having to get their wholesale gas tariffs approved by the watchdog. Household tariffs will remain regulated. PGNiG controls 97% of the country's gas sales market and holds controlling ownership of the distribution market.

All parties would have equal access to the auctions, which would be held five times a year and offer 12-month contracts in tranches of 1 million cubic meters, according to the document. PGNiG would not be able to buy gas at the auctions but subsidiaries from its capital group would. The gas release programme also envisages the creation of a secondary market on a commodity exchange that would enable companies to resell gas bought at auction, it said.

The move follows an official request from the European Commission in April last year for Poland, along with Italy and Romania, to change its legislation on regulated gas prices to bring it in line with EU rules. End user prices set by regulators block new market entrants and deprive customers of their right to choose, the EC said.

PGNiG said it plans to trade more gas in Germany and perhaps the Netherlands to compensate for losing some of its market share. The company began trading small volumes in Germany in 2010. PGNiG deputy chief executive, Radoslaw Dudzinski, told Platts in December the company expects to lose around 25% of its market share in 3-4 years.

With the availability of virtual reverse flow in the Yamal pipeline, which brings Russian gas to Poland and Germany, and increased capacity in the German and Czech interconnectors, an additional 3.3 Bcm of capacity has been added to the Polish market since November. Although PGNiG has booked much of that itself, the country's largest refiner, PKN Orlen, and large chemical producers, have for the first time signed contracts with suppliers other than PGNiG.

Mariusz Calinski, chief executive, of small independent gas trader, CP Energia, which supplies industrial clients not covered by PGNiG's distribution network, welcomed the program, although he said it was merely a step in the right direction.

"I don't expect this gas release program will be the main driver of liberalization. Even in Germany, gas release accounted only for something like 5%. I don't

expect that participation will be high, maybe 10% or 20% because PGNiG is an incumbent and an incumbent always looks after its own interests. But even having 5% boosts the market because it provides motivation to establish a virtual trading point and make other required changes. That's the main issue that would help in the end," Calinski told Platts.

As well as a virtual trading point, true liberalization of the wholesale market requires the creation of a balancing market and larger interconnector capacity, Calinski said.

Lawyers have warned the proposals are unclear and imprecise. Rafal Hajduk, a partner at law firm, Norton Rose, wrote in a note that PGNiG's proposals do not define the legal and regulatory changes that are required to start the program. He said URE could be forced to revoke its decision to deregulate prices if the release program conditions were not being fulfilled. "If there would be no other legal instruments to enforce PGNiG's adherence to the conditions of the gas release program there will always be a risk of going back to a regulated market. Such a risk, contingent on the possible behaviour of just one of the players, could effectively discourage new entrants from the liberalized wholesale market," he said.

Andrzej Sikora, a gas market specialist and president of the Energy Studies Institute, said the proposals contravene the European Commission's Third Energy Package because it binds a regulator with an incumbent. "There is only one plus in this document and that is there is now a discussion about a gas release program in Poland. This is just PR; it's not a real plan which can be implemented. It must be changed," Sikora said in an interview with Platts.

Sikora also said the mechanism for setting the auction price would result in an immediate 15-20% increase in gas market prices which would deter participants.

It is a view shared by the Polish Chemical Industry Chamber, which represents companies that consume 13% of the country's gas market and will publish the sector's observations on the draft next week. "It's already clear that PGNiG's proposed regulations for gas market liberalisation will not translate into a fall in gas prices," Jerzy Majchrzak, the chamber's director, told the daily *Rzeczpospolita* on February 21. Majchrzak said the potential to gain access to gas from non-PGNiG sources and resell it were positives.

Calinski said complaints about price hike were exaggerated because, although Polish gas prices are currently 15% below those in Germany, URE has yet to agree to a tariff increase this year so by the time the auctions start gas prices will be closer to those in Germany.

— Adam Easton, Warsaw

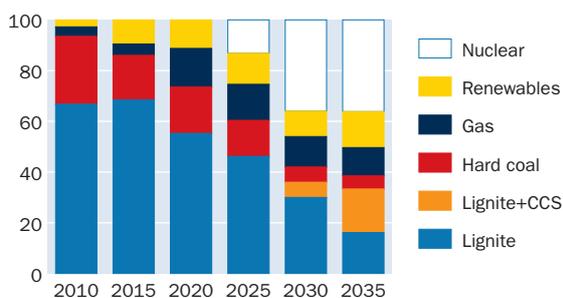
# Poland's PGE to diversify fuel mix

PGE Polska Grupa Energetyczna (PGE), Poland's major state-owned power group, published earlier this month its long-awaited, long-term strategy, which presents a vision of its future generation mix – one in which coal will no longer play a dominant role.

According to its new strategy approved February 9 by its supervisory board, PGE plans to invest Zloty 330 billion (\$105 million) to 2035 to create a more fuel-diversified generation portfolio, in which the share of lignite and hard coal in its fuel mix will fall from 67% and 27%, respectively, at present, to 33% and 5% in 2035. The dominant role of coal in its fuel mix will be replaced by nuclear (36%) renewables (14%) and natural gas (11%). This will see its CO<sub>2</sub> intensity fall nearly fourfold to 0.27 tons per MWh in 2035 from 1.06 tons per MWh as of 2010, the company said in a presentation.

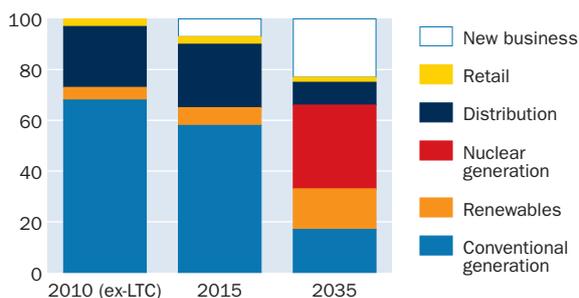
The planned investments will see the company increase its installed capacity from around 13.1 GW at present to 21.3 GW in 2035, and result in its share of Poland's power generation market rising to some 46% in 2035 from 42% in 2010. The increase in its installed capacity will come from its nuclear, gas-fired CHP and renewable energy projects, with new baseload thermal power capacity essentially only replacing capacity that will be decommissioned, it said.

## Development of fuel mix/CO<sub>2</sub> intensity (%)



Source: PGE

## EBITDA split by segments (%)



Source: PGE

PGE said that as a result of its strategy and investment program, it expects to post consolidated EBITDA of close to Zloty 12 billion in 2020 rising to some Zloty 34 billion in 2035, with adjusted consolidated EBITDA margin of some 29% in 2020 and over 50% in 2035, the group said. The margin is adjusted for power exchange trading effects on revenues, the company added. Annual capital expenditure between 2012 and 2020 will average over Zloty 9 billion and increase to over Zloty 16 billion in the years 2020-2035. Such a level of capex will likely leave the group with a net debt to EBITDA ratio of some 1.6x in 2020 and approximately 2.3x in 2035, it said.

This compares with EBITDA (excluding its long-term power purchase agreements) in 2010 of Zloty 6.5 billion and Zloty 7.07 billion for the year to September 2011. Capex in 2010 totalled 5.3 billion and Zloty 4.85 billion for the last four quarters to end Q3 2011.

The planned evolution in PGE's generation fuel mix is reflected in the contribution by the various segments to the group's EBITDA, most notably by conventional fossil fuel generation. According to the strategy's baseline scenario, conventional generation which contributed 68% of total EBITDA in 2010 will only contribute 17% by 2035. In contrast, nuclear and renewables will see their respective shares rise from 0% and 5% in 2010 to 33% and 16%, respectively by 2035. Distribution and retail will, however, see their respective shares of EBITDA drop from 24% and 3% in 2010 to just 9% and 2%. New business, which groups offshore wind, M&A in renewables segment and a possible venture into shale gas, could contribute as much as 23% of its EBITDA by 2035, according to the strategy. PGE did not mention possible investments and earning from shale gas at all.

The strategy did not focus much either on its retail and distribution business, other than to say that the group expects to expand its retail market share to 33% in 2035 from 26% in 2020. This they expect to achieve simply through increases in generation market share and marketing efforts. In terms of distribution, the full revaluation of Regulatory Asset Base should be reached around 2016, which will limit the margin expansion in the segment. PGE said it does not plan to invest more than depreciation in the segment.

PGE said that its investment plans in its strategy are based on the assumption that electricity demand in Poland will increase by between 1% and 1.7% annually on average over the next two decades, while in its baseline scenario it expects real electricity prices to grow by up to 1.5% per annum on average. It expects lignite and hard coal prices in real terms to remain fairly flat over the period, while the CO<sub>2</sub> price would be capped by the Long Run Marginal Cost of Carbon Capture and Storage installation at €40-50 per tonne. Its gas price assumptions are in line with forecasts of the IEA, it said.

The strategy does not make any major changes to its previously-announced medium-term generation pipeline, which include most notably two 900-MW coal-fired units at Opole by 2017/2018, 1.3-1.7 GW of gas-fired CHP capacity and 1,000 MW of onshore wind farms by 2015.

### **Nuclear timetable pushed back**

The most significantly change relates to the commissioning of the first 3,000-MW nuclear unit, which it now expects to happen in 2025 from the previous date of 2020, with a second 3-GW unit scheduled now to come on line in 2029. However, it added that the scope of the whole program would depend on “economic conditions”.

PGE said that it estimated that the levelized cost of generating electricity from nuclear power plants is between €65 and €68 (\$86 to \$90) per MWh, which “justifies construction of plants under most scenarios.” PGE added that it will hold at least a 51% stake in the plants as part of a consortium with foreign partners, although “desirably” it would hold a 75% stake.

Three potential locations for the first nuclear power plant were named in November 2011. These were Zarnowiec, Choczewo and Gaski, the first two in Pomerania and Gaski in West Pomerania. A final decision on the location will be made in 2013, it said, with a tender for the technology supplier of the plant to be announced later this year.

### **Opole stake on offer**

The only other surprise in the strategy was its disclosure that it will sell a 50% stake of the hard coal-fired Opole power plant, comprising both the existing capacity of 1,492 MW and the two new 900-MW units, most probably to one of its competitors. Robert Maj, utilities analyst at KBC Securities, welcomed this decision, which he argued would have several benefits. “Teaming up with one of its competitors, who has plans for building its own power plant, reduces the risk of overcapacity on the market over the longer term,” he said in an equity research note February 10. It would allow also allow PGE to share the massive capex for the project estimated at Zloty 9.5 billion and thus be able to use the money saved to focus on other areas of its investment program, he added.

It would appear there are no takers yet for the 50% stake with both Tauron Polska Energia and Enea ruling out mid-February bids. “We are not interested in this project. Our priority is the investment in Kozenice,” Dagmara Prystacka, Enea spokeswoman told Platts, February 14. In December Enea started tendering for contractors to build 900-1,000 MW of new capacity at the 2,905-MW Kozenice plant. Meanwhile, the daily *Parkiet* quoted an anonymous source at Tauron as saying that such an acquisition is not in the company’s strategy. Tauron did not respond to a request for confirmation from Platts.

With Tauron and Enea ruling themselves out for now, that leaves power companies already present on the Polish market, such as EDF, GDF Suez, RWE or Poland’s Energa, in the frame, although EDF announced in

December it was going ahead with an investment to build a 900-MW unit at its Elektrownia Rybnik plant, in south Poland. Some analysts believe Polish coal miners could also be interested in the stake to guarantee demand for their production.

### **Ambitious renewable targets**

In terms of renewables, PGE expects to have 1,000 MW of onshore wind capacity in operation by 2015, 1 GW of offshore wind by 2020 and a further 1 GW of offshore capacity by 2025. Analysts were doubtful about its ability to deliver 1 GW of onshore capacity by 2015. “This is especially ambitious as the company’s current pipeline includes only 100 MW,” wrote Tomasz Krukowski, a research analyst at Deutsche Bank in an equity research note February 10. At present the company is developing the 48-MW Pelpin and 60-MW Zuromin projects, which are both scheduled to enter commercial service this year. PGE also said it plans to increase electricity production from biomass to around 4 TWh by 2015 from around 0.7 TWh last year. The company currently has 417 MW of renewable energy capacity, representing 3% of its fuel mix. This includes 387 MW of hydropower capacity and 30 MW of wind.

### **ZEDO future undecided**

PGE has not yet, however, made a final decision on whether to shut down its hard coal-fired Zespoł Elektrowni Dolna Odra (ZEDO) plant by 2030. Local authorities and labour union leaders from the plant in Szczecin, northwest Poland, voiced opposition February 14 to the company’s apparent plans to decommission the 1,567-MW complex.

According to its strategy, the company will decommission 205 MW of capacity by 2015, a further 454 MW by 2020 and the plant’s final 908 MW by 2030. The strategy does not make specific reference to replacing that capacity. However, PGE said a final decision on what to do with ZEDO had yet to be taken. “The approved strategy in no way prejudices our withdrawing from carrying out the development investments at PGE’s Dolna Odra plant or closing this location down in the long-run,” the company said in a statement.

“The strategy assumes building new generation, also in Dolna Odra once the development concept for this location has been completed,” PGE spokesman Lukasz Witkowski said. “Taking into account the long-term prognosis of high gas prices, the investments in CCGT units which were previously considered are too risky in terms of profitability,” he added. In September PGE said it had shelved a plan to replace some of ZEDO’s existing coal-fired capacity with two 440-450 MW CCGT units because of the high cost of the gas feedstock.

In its baseline scenario in the strategy PGE said its interest in CCGT may increase if the grid operator, PSE Operator, decides to pay for the availability of peak power. In a high CO2 price or available shale gas scenario, PGE said more gas units may be built.

# Gazprom cuts prices for Europe

Pressure is building on Gazprom to maintain European market share in the face of growing LNG imports and falling spot prices on continental trading hubs. This much was highlighted earlier this month when the Russian gas giant revealed that it has agreed a reduction in the price of gas it supplies to a number of European customers under long-term oil-indexed contracts by around 10%.

“Our partners asked us to revise our prices and ... what we did is correct the parameters of our formula, which led to a relative price reduction of 10% on average,” Gazprom’s deputy CEO Alexander Medvedev told *The Financial Times* in an interview published February 17. “The new price will ensure that Russian gas remains competitive,” he said. The gas giant had, however, not yielded to calls by customers to increase the spot price component in its contracts, he added.

Medvedev said that the concession on prices followed negotiations with some of its key regional clients, including France’s GDF Suez, Germany’s Wingas, Slovakia’s SPP and Turkey’s state gas supplier Botas. Previously, in mid-January, Medvedev said Gazprom had agreed to “adjust” the gas prices for European clients “taking into account the current situation on the gas market and in the economies and energy sectors of a number of European countries”.

Agreements, he said at the time, were signed in late 2011-early 2012 with GDF Suez, Wintershall, SPP, Italy’s Sinergie Italiane and Austria’s Ecogaz. Gazprom previously reached price agreements with a number of other European gas companies, including Italy’s Edison and Eni, Greece’s DEPA, Germany’s E.ON Ruhrgas, and Dutch GasTerra.

Despite requests from European clients, Gazprom will not increase the share of spot market sales in its long-term contracts, Medvedev said according to *The Financial Times*. European consumers have long been seeking to reduce gas prices under long-term contracts with Gazprom, which are indexed to the price of oil, to bring them closer to lower spot prices. While European gas prices have remained relatively flat over the last two years, oil prices have soared, causing huge increases in gas prices under oil-indexed contracts for importers. According to Jonathan Stern, director of gas research at the Oxford Institute for Energy Studies, hub-based prices have been 25% lower than oil-linked prices on average over the past two years.

While Gazprom altered contracts for a three-year period to include a ratio of up to 15% spot prices and 85% oil-indexed prices under some of the agreements signed in 2010, company officials have, however, repeatedly said the company does not expect to

change its oil-indexed gas contract system, arguing long-term contracts provide a more predictable and stable product with greater flexibility on volumes, and are essential if Gazprom is to embark on high cost new gas field developments that will guarantee Europe’s long-term energy security.

Since then, however, the pressure from customers has continued with Germany’s RWE and E.ON, both taking Gazprom to arbitration over pricing disputes after negotiations failed. This week PGNiG, the Polish gas supplier, also announced it had filed suit against Gazprom at an international tribunal in Stockholm over the price of gas in its long-term Russian supply contract.

Stern said in the *FT* article that Gazprom was fighting a losing battle to preserve its oil-linked contracts. “Europe is moving to hub-based pricing and that means Gazprom is as well,” he said. “To avoid more arbitration the company realises it has to narrow the gap between the oil-based price and the hub-based price,” he added.

## Ukraine seeks formula change

The pressure on Gazprom to maintain gas sales was further highlighted when it was reported that Ukraine has also been offered a 10% discount on its gas import price in line with the adjustments made by the company for several European customers last month on the condition that Kiev scraps plans to drastically cut its imports.

Gazprom proposed a 10% cut in the price of gas if Ukraine agrees to import at least 33 Bcm in 2012, the daily *Kommersant Ukraine* reported February 20, citing an informed source. The talks between Ukraine and Russia collapsed last month after Russia refused to lower gas prices to \$250 per 1,000 cubic meters from \$416/1,000 cu m currently. Kiev warned then it would cut gas imports by a third in 2012 to 27 Bcm.

Sergei Naryshkin, the head of the State Duma, the lower house of Russia’s parliament, who visited Kiev on February 20, confirmed that Russia had made a new proposal to Ukraine but gave no details. “(Russia’s) Energy Ministry has now sent the Ukrainian side a new draft agreement that will be subject to consultations and negotiations,” he told reporters in Kiev. However, according to *Kommersant*, Russia’s new proposals delivered by Naryshkin do not offer the price reduction that Ukraine has been seeking. Gazprom declined to comment, noting that there had been no high-level talks between Russian and Ukrainian officials on the gas price in about a month. Ukraine’s Ministry of Energy also refused to comment.

Andriy Kliuyev, the secretary of the National Security and Defense Council, who held talks with Naryshkin during his visit, declared February 20 that Ukraine wanted a

better deal and will insist on changes to the pricing formula. "I hope that both sides will be able to overcome the existing disagreements and work out an optimal, economically reasonable and fair price formula for the gas that Ukraine buys," the council quoted Klyuev as saying in a statement.

Ukrainian Prime Minister Mykola Azarov, who also met Naryshkin, said a positive decision on gas prices should be approved in the near future. Ukraine is under pressure to negotiate lower gas prices as soon as possible because of its impact on industry, most notably the chemicals sector, were unprofitable due to high gas prices. "This is a record price," Azarov said. "There is no such price in Europe." "We are making great efforts in order to find a mutually beneficial and mutually acceptable option to solve the problem," Azarov said. "The option must be found, and it must be found in the near future."

Denis Sakva, an analyst with Ukrainian brokerage Dragon Capital, said the gas price issue was unlikely to be settled before the March 4 presidential elections in Russia, given that Moscow is maintaining its stance that any higher discount for Ukraine is conditional on an agreement to create a consortium to manage its gas transport system.

*Kommersant Ukraine* reported that Gazprom would not give any further discounts unless it receives a controlling stake in Ukraine's gas transport system, which carries the bulk of Russian gas bound for Europe. Ukraine is reportedly willing only to offer Gazprom a 33% stake in a future joint venture with 34% held by Naftogaz Ukrayiny and 33% by an unidentified European energy company.

"We think 10% is too low a discount to offset the existing contract's high base price which inflates Ukraine's gas import costs above levels paid by other European countries despite the difference in transportation costs," Sakva said in an equity research note February 20, adding that since Ukraine borders Russia there are no transport costs involved except those to bring gas to the border. Equal gas prices in Ukraine and other European countries mean that Gazprom earns a higher margin on sales to Ukraine, he said. Pumping gas through Ukraine costs Gazprom approximately \$36/1,000 cubic metres, with another \$40-50/1,000 cu m charged for transportation from Ukraine to Germany, Gazprom's largest European customer.

"Using a net-back approach, we estimate the base price for Ukraine should be reduced by \$70-90/1,000 cu m from Germany's level, or to \$350-\$370/1,000 cu m," he said, noting that this does not include an additional \$100/1,000 cu m discount that Ukraine negotiated in 2010 by agreeing to extend Russia's lease on its naval base in the Black Sea port of Sevastopol for 25 years until 2042. This discount already applies to Ukraine's current gas contract with Russia.

### Gas sales holding up

Despite the pressure on pricing and the 8% decrease in overall gas consumption in Europe last year, Medvedev boasted that Gazprom had increased its sales in Europe substantially in 2011 to 150 billion cubic meters in 2011 from 138 Bcm in the previous year.

The company, meanwhile, expects European sales in 2012 to increase 2.7% to around 154 Bcm (excluding other deliveries and trading), according to a presentation at Gazprom's Investors Day held February 10. Gazprom's total gas exports to Europe are forecast to rise to 164 Bcm in 2012, up 2.5% on the year, with the balance of 10 Bcm likely to be the volumes Gazprom will buy regionally and then re-sell to clients in Europe. Gazprom's gas supplies to the spot market will account for around 15% of the total export volume in 2012, it said, flat on 2011 but double that registered in 2010 of approximately 7%.

Gazprom confirmed that the adjustment of contract terms with customers accounting for to around 35 Bcm of its 150 Bcm European sales portfolio will drop the price realised for the affected volumes by 7-10% on average, although the company expects to offset some of the negative impact to the top line via higher sales volumes. The gas price for European customers will average \$415/1,000 cu m in 2012, up 8.1% from \$384/1,000 cu m in 2011, the company said.

Gazprom, meanwhile, forecasts that gas sales to markets in the former Soviet Union will rise to 75 Bcm from 71 Bcm last year, with an average price of \$320 per 1,000 cu m. This, market analysts said, implies that Ukraine is buying the minimal take-or-pay contract volume of 42 Bcm at the current price of \$415 per 1,000 cu m.

**platts**



## COMMODITY PULSE

### Russia: the oil & gas superpower looks east

Amidst upcoming presidential elections, and questions being raised over its ability to supply Europe with gas, Richard Swann, Stuart Elliott and William Powell discuss how energy giant Russia is turning its focus on key Asian oil and gas markets. They also assess the impact of Russia's domestic consumption of energy; the potential for more global competition for Russia's energy; and the huge implications of major energy infrastructure developments planned by Gazprom and others.

<http://plts.co/PCPrussia>

# Bulgarian renewables: Green power blues

**Rob Whitford, Sofia**

The Bulgarian government's anti-renewables crusade appears to be gathering pace judging by planned amendments to last April's Law on Energy from Renewable Sources (LERS). Bulgaria's parliamentarians are at present gearing up for the second reading of these amendments, which passed first reading by an extremely comfortable majority late last month. If LERS was, as a whole, bad news for green investors, the amendments would appear to be worse.

The amendments appear, in at least one respect, to be addressing a problem whose seriousness has been much exaggerated: the problem of too many projects chasing too little grid capacity.

Before last year's law, preliminary grid contracts had significantly exceeded the assumed capacity of the grid to deal with the relevant projects since, under the previous law, grid companies were legally obliged to sign them regardless of grid capacity. LERS attempted to address this by requiring preliminary grid contracts to be confirmed via bank guarantees of over €25,000/MW.

This, seemingly, proved a less effective a filter than the authorities apparently hoped. According to recent figures from the energy ministry disclosed by the Bulgarian Wind Energy Association (BGWEA), as of end-2011 around 650 MW wind projects have final grid connection contracts and 1,710 MW have guaranteed preliminary contracts. With perhaps 600 MW of wind capacity already on line, this would suggest eventual total wind capacity will far exceed the government's target of 1,440 MW by 2020, and could threaten the stability of the grid according to Bulgaria's TSO, which insists that the grid cannot handle more than 1,800 MW.

## Gridlock

To tackle this issue, one of the proposed amendments envisages that projects will be connected in accordance with a timetable compiled by the relevant grid operators,

the energy ministry and the TSO, in accordance with strategic ten-year grid development plans. Once presented with this timetable, investors will be given the choice between accepting the date contained in it and keeping their guarantees posted or walking away with their guarantees released.

"It's an arrangement that's wrong for all sorts of reasons," argues BGWEA's executive director Sebastian Noethlichs. "It's untransparent, unfair, and it's also probably unnecessary," he told Platts.

For a start, the amendments don't provide for transparency in preparing these timetables, as the process won't be public or subject to independent scrutiny. Nor is there provision for sanctions against – or compensation by – grid companies that fail to implement grid development plans or to adhere to the timetable for connecting a project for some other reason.

Furthermore, it is entirely possible that these timetables will schedule some projects to come on stream after end-2015. That is important, since, as the law stands, it means that they won't receive the benefit of a full contract term at preferential prices: contracts for projects so timed expire at end-2027 (wind) and end-2035 (PV). Again, there's no provision for compensation if this happens. Besides this, long timetabled delays could also affect construction permissions and re-designations of land use, which expire after three to five years. Since equipment models are often specified in licensing documents, delays could also mean that, by the time a project is connected, it might be outdated or simply unavailable.

BGWEA's investigations have uncovered another reason. Under LERS, preliminary contracts could be confirmed by posting guarantees only if certain conditions had been satisfied by last July's deadline. These included ownership or lease of the land on which the project is to be built as well as an approved Detailed Zoning Plan (PUP in Bulgarian) and, if applicable, a PUP-based design visa. A PUP, moreover, presupposed either a favourable EIA or a Regional Environmental Inspectorate decision that no EIA was needed.

According to BGWEA, it seems that numerous projects have not satisfied one or more of these conditions. "We've looked in detail into around 1,000 MW worth of wind capacity for which guarantees have been posted," said Noethlichs. "And roughly 700 MW of it was in some way not eligible." That 70% can't be generalized to the 1,700 MW currently secured with guarantees: "We looked first and foremost at projects we suspected." But he thinks it's a plausible assumption that the authorities shouldn't have allowed guarantees to be posted in the first place for around half of that 1,700 MW.

## Bulgaria: Wind projects under development at end-2011 (MW installed capacity)

	Grid connection contracts		
	Final	Preliminary	Total
Distribution grids:			
E.On/EnergoPro	153.89	106.60	260.49
-EVN	25.77	19.60	45.37
-CEZ	9.50	—	9.50
Distribution grid total	189.16	126.20	315.36
HV grid (NEK)	460.00	1,583.75	2,043.75
Grand total	649.16	1,709.95	2,359.11

Source: BGWEA, citing data supplied by Ministry of Economy, Energy and Tourism - projects with preliminary and final grid-connection contracts that have fulfilled requirements of paragraph 6 of the Transitional and Final Provisions of the Law on Energy from Renewable Sources.

That is unfair to investors who didn't post guarantees because they took the rules at face value, said Noethlichs. It's also worrying, he suggested, since those who posted guarantees improperly may also find improper ways to get ahead in those untransparent grid timetables. It also casts doubt on how far those timetables are necessary. "It's possible that strict application of LERS might render this amendment unnecessary," he argued, especially as he insists the grid could take at least 2,500 MW of wind, not 1,800 MW. "At the very least its consideration ought to be delayed till the question of guarantees' validity has been fully sorted out." BGWEA has proposed a special parliamentary working group on the subject.

### Acting up

Another concern is "Act 16". LERS provided that the feed-in tariff (FIT) applicable to a given renewables-based electricity project for the duration of its power purchase contract – 12 years for windpower, 20 for photovoltaic – should be the one in force when the project receives its "Act 15" (a document from the project's construction supervisor certifying that construction has been completed). With the state regulator revising tariffs annually – and likely to do so in a consistently downward direction – that was already too late a stage for green investors' taste as it made tariffs unpredictable when project financing was being arranged.

The proposed amendments make things even worse. Apparently on the grounds that construction supervisors – private contractors beholden to the investor – can make dubious decisions, they move point of reference to "Act 16", certification that the project is ready for operation. That's a step backwards, insists Noethlichs. Not only is Act 16 sometimes in practice issued several months later than Act 15 – which might mean a lower tariff, if the mid-year pricing round happens to occur in the meantime. Its timing also depends on factors largely beyond the investor's control. Notable among these is the fact that Act 16 requires a 72-hour test to be performed, which presupposes that the grid operator has connected the project to its grid.

BGWEA suggests an alternative: apply the tariff in force at the moment when the investor can present either notary certification or a customs document attesting that the equipment to be installed for a given project has been delivered. "Such delivery is a proof of serious and advanced investment intent," Noethlichs argues. "And such documents are a lot less subject than Act 15 to the sort of manipulation the government is apparently worried about."

A third major change concerns projects implemented in stages. LERS's existing formulation is somewhat unclear but has been widely understood as implying that the tariff for the whole project is the one in force when its first stage is implemented. Under the amendments, each stage would be subject to the FIT applicable at the time it receives Act 16. Many will see this as the justified closing of an undesirable loophole. But it will presumably entail additional costs in terms of separate

metering equipment for separate stages and will disappoint some large photovoltaic investors for whom staged development was part of the game plan.

### Where now?

One idea for which there seems to be wide consensus is that the revised draft should provide for drastically simplified procedures for small projects, such as small roof- or wall-mounted PV installations or thermal pumps. Delyan Dobrev, the deputy minister for energy matters, has said as much, as have several members of the relevant parliamentary committee.

"We'll have to wait and see if this corresponds to actual texts," Bulgarian Photovoltaic Association head Nikola Gazdov, told Platts. "I do hope so," he added, noting that in terms of the permissions needed there's at present not much difference between constructing a small PV installation and building a house.

It remains to be seen what happens to the bill in parliament's Economy, Energy and Tourism Committee (EETC). Whether EETC or parliament's subsequent plenary session will take into account the industry's arguments is unclear. Ken Lefkowitz, an investment adviser and BGWEA board member, is not optimistic. "There's a clear political will not to promote any renewables apart from biomass and rooftop solar," he told Platts.

He points to repeated public tirades against "expensive renewables" by Prime Minister Boiko Borisov. Last month, Borisov treated the American Chamber of Commerce to extended variations on the theme that Bulgaria should not be rushing to meet EU-mandated renewables targets for 2020, since renewables investment costs will be much lower nearer the time. Lefkowitz also points to frequent praise of biomass from Borisov and his ministers and says it is "blatantly obvious" from parliamentary proceedings that "interests involving forestry and agriculture" are very powerful and very active within Borisov's ruling party, Citizens for the European Development of Bulgaria.

The arguments against green power aren't sound, said Lefkowitz. "The debate is too often conducted in terms of investment costs per megawatt rather than lifetime levelized costs per MWh or, even worse, in terms of facile comparisons of current PV tariffs with the price of power from the fully amortized Kozlodui nuclear power plant. If you factor in fuel, carbon, financing, and (in the case of nuclear) decommissioning costs, then renewable energy – or at least wind power – is competitive right now," he explained.

But it's not logic that will win the day. "Borisov has no trouble getting the measures he wants through parliament," said Lefkowitz, who discounts the possibility of the sort of turn-around that occurred last month in respect of shale gas (*EiEE* 232/7). "This is a populist government that plays to voters' fears of rising electricity prices with simplistic arguments. The facts about levelized cost of energy are not going to mobilize any protest marches."

# Stuck on Gazprom's gas needle

**Ben Seeder, Riga**

Lietuvos Energija, Lithuania's state power producer, confirmed February 21 it has found a cheaper supplier of natural gas in Western Europe, but it will not be able to take advantage of the lower prices unless it secures agreement from its current supplier – Gazprom.

The company has agreed a deal with an unnamed supplier at the Polish-Belarusian border, and deliveries could begin from next year, chief executive officer, Dalius Misiunas, told Platts in an interview. "But we called the Belarusian transmission authorities and they said they are unable to reverse the flow direction of the pipeline. Physical delivery of the gas to Lithuania from Europe is impossible," he said.

In an effort to resolve the problem, he said the company approached Gazprom with a solution that involves entering into a swap agreement with the monopoly. Under this proposal, Lithuania would physically continue to receive gas from Russia, but would pay its alternative supplier in Europe. The gas bought in Europe would then be given to Gazprom on a European market as payment.

Lietuvos Energija consumes around 350 million cubic metres of gas per annum, and is the country's second-largest gas user, after fertilizer group Achema. Misiunas confirmed the company pays "between \$480 and \$490 per 1,000 cubic metres" for Russian gas – roughly a third higher than spot prices in Western Europe, and higher than the price paid in both other Baltic States.

The Lithuanian company's search for cheaper suppliers is part of the country's efforts to reduce its dependence on Russian gas supplier and strengthen its energy security. Around 75% of electricity generation in the country is from gas.

Lithuanian President Dalia Grybauskaitė told reporters February 20 that "Gazprom will not lower gas prices for Lithuania until we have an alternative source to Russian gas. Until there are alternatives, Lithuania will remain stuck on Gazprom's gas needle".

According to Denis Borisov, an analyst with Nomos Bank, Lietuvos Energija could save up to \$100/1,000 cu m if Gazprom agrees to the swap deal. But Pavel Sorokin, analyst at Alfa Bank, wrote in a note to clients that Gazprom was "unlikely to accept this proposition".

If Gazprom rejects the proposal, Misiunas said, the second option was to enter into a direct purchase agreement with the monopoly. "At the moment we are buying gas indirectly from Gazprom through third parties. I think a good option is to directly contract with Gazprom Export. We would be looking for a price similar to what we have achieved with alternative suppliers. If Gazprom

wants to go down this route, we will be looking for a lower level of take or pay, more flexibility and indexation to European spot prices". He said it would be a good option for Gazprom, because Gazprom receives a lower price from the intermediaries, from whom Lietuvos Energija buys its gas.

He admitted that if Gazprom rejects both the swap proposal and the direct contract with Lietuvos Energija, there is no third option for his company. "We have limited options; this is a country with one pipeline and one supplier. It is not a good situation for the buyer," he said. If both proposals are rejected, he said "our only action will be to call the European Commission and use this example as a reason why the GIPL (Gas Interconnection Poland-Lithuania) project must be given the highest priority".

Misiunas said he believes Gazprom's desire to participate in the unbundling of the Lithuanian gas distribution system may encourage the monopoly to take one of the two options.

Lithuanian is in the process of unbundling gas supply from transmission. Under the policy, signed into legislation last year, Gazprom must give up its 37% share of gas transmission company, Lietuvos Dujos, by 2014. The pipeline company will be restructured, and, according to the new regulations, Gazprom, as the main supplier, will not be able to participate in the new transmission company.

Yet, according to Misiunas, the Lithuanian government is considering moving away from this policy. "From what I understand, Gazprom is requesting participation in the new unbundled entity. The Ministry may be considering options there," Misiunas said.

According to Russian media reports, the Lithuanians are considering allowing Gazprom to take a non-voting stake of the reorganized distribution company, in exchange for lower prices on gas delivery.

Asked if there was a link between the Russian-Lithuanian discussions on the distribution unbundling, and Lietuvos Energija's swap proposal, he said: "That is something that is being discussed".

Gazprom has previously threatened to take legal action against the unbundling process, and has skipped attendance at major shareholders' meetings of Lietuvos Dujos. The other major shareholder is Germany's E.ON Ruhrgas, with 38%. The Ministry of Energy holds 18%. Kestutis Jauniskis, a ministerial advisor at the Lithuanian Ministry of Energy, said he was unable to provide comment on by deadline, while calls to the press service at Gazprom went unanswered.

## ELECTRICITY NEWS

### Bulgaria

## Energy law amendments pass first reading

Bulgaria's parliament passed amendments February 15 to the country's Law on Energy on first reading. The changes are designed to update the existing 2003 law but already much amended and in particular to bring it into line with the EU's Third Energy Liberalization Package.

One key provision is the choice of the Independent Transmission Operator model, involving ownership of transmission assets by electricity and gas transmission operators. The separation that this entails of Bulgaria's Electricity System Operator (ESO) from national power company NEK is already underway, with four would-be consultants applying for the job of unbundling earlier this month.

However, it seems that ESO – along with gas transmission operator Bulgartransgaz, which already owns the grid it operates – will remain within the framework of the controversial Bulgarian Energy Holding, which includes all 100% state-owned assets in the sector. An increased role is envisaged for the sector watchdog, the State Energy and Water Regulation Commission (SEWRC), in ensuring the independence of the transmission operators.

Another of SEWRC's responsibilities will be to ensure open and transparent consultation with network users about the 10-year grid development plans required by the amended law. Grid operators are required to develop these plans and update them every year. SEWRC is also given powers to monitor the operation of the free electricity market and penalize those who violate this rule.

The amendments remove medium-voltage business users of electricity from the protective scope of the regulated market. For those who cannot or choose not to buy their power on the free market, the amendments create the Supplier of Last Instance (SLIs), which will provide electricity at a price that is unregulated but arrived at in accordance with a methodology laid down by SEWRC.

The amendments are now to undergo discussion in parliament's Economy, Energy and Tourism Committee prior to debate in plenary session. The debate will cover a number of questions raised by the Sofia-based Energy Management Institute, headed by former deputy minister Ivanka Dilovska, such as how exactly electricity is to be secured for SLIs. Other topics raised by EMI include whether BEH's present structure is an appropriate framework for supposedly independent transmission operators and whether SEWRC will require administrative, professional and financial strengthening if it is to fulfil its expanded role. Last but not least, the institute has raised the issue of why the amendments do not update the incentive framework for cogeneration in order to favour modern capacity instead of subsidising some very old and inefficient units, as at present.

## BGWEA elects new chairman

The Bulgarian Wind Energy Association (BGWEA) announced February 21 the appointment of Nikolay Nikolov as the new chairman of its supervisory board.

Nikolov was elected by the members of the association's supervisory board to replace Ken Lefkowitz, who stood down earlier this month, BGWEA said in a statement.

Nikolov, a former Deputy Minister of Transport and Communications, is the director for South East Europe for Dublin-based renewable energy developer Island Renewable Energy. He was formerly executive director of Mobilitel, Bulgaria's leading mobile telecommunications company.

Ken Lefkowitz, managing partner of New Europe Corporate Advisory, a Sofia-based corporate finance and consulting boutique, will remain on the association's supervisory board, BGWEA said.

### Croatia

## New grid rules for wind projects

HEP-OPS, Croatia's electricity system operator, has adopted and published a new set of criteria for the connection of wind power projects to the grid designed to speed up project development.

The state-controlled grid operator said February 7 that the new rules, which took effect February 20 and were agreed following consultations with developers and the renewable energy association, will contribute to increased transparency and non-discriminatory practices during the process of connecting new wind farms.

Under the new rules, future wind farms will be able to qualify for connection if they have been included on the list of projects that are in accordance with the national quota for wind energy development which is fixed by HEP-OPS. In order for projects to be considered for inclusion on the list, wind developers must submit a request that is accompanied with proof of legal registration, an energy permit for the wind park, a preliminary electricity permit (PEES), a valid construction license and a signed agreement for the connection of the wind park to the transmission grid. HEP-OPS has 15 days to accept or reject the request for inclusion on the list.

After a project is officially entered into the quota for wind energy development, developers will be required to submit four more documents to HEP-OPS in the following six months, including a valid preliminary decision granting the status of eligible producer, a signed PPA, a signed contract for the purchase of wind turbines with confirmation of advance payment or payment of first instalment.

The indicative quota for connection of wind plants in Croatia has been set at 400 MW, of which 208.95 MW has been filled as of February 6. Croatia had 129.7 MW of wind capacity in operation as of that date, with connection agreements in place for a further 79.2 MW.

## Special supply rights for Aluminij

The Croatian government ruled February 9 that it would be in the country's economic interest to renew privileged electricity consumer status in 2012 to Bosnia-Herzegovina's aluminium smelter Aluminij.

Aluminij was awarded the special status, based on a joint request submitted by Croatia's aluminium rolled products factory TLM-TVP and aluminium extrusions plant TLM-TPP from Sibenik, as it produces aluminium products that are deemed indispensable for the production process of TLM-TVP and TLM-TPP. The two aluminium processors import their raw material from Mostar-based Aluminij across the border.

As a result, Aluminij will receive 100 MWh/hr of electricity this year from state power producer HEP at a preferential price to be determined by the Croatian energy regulator HERA in return for the supply of 60,579 tonnes of aluminium billets and blocks per year.

The Croatian government's decision is seen as critical to the continued operation of both Aluminij and its own aluminium processors since if Aluminij was forced to buy its electricity in the open market, the high cost of importing power could force the Bosnian company to cease production, which would in turn spell trouble for TLM-TVP and TLM-TPP that are dependent on Aluminij for raw material.

Last year, Aluminij secured its annual supply needs of 225 MW from HEP and the Bosnian Croat utility EPHZHB. HEP supplied 100 MW in band to Aluminij at a price of just €42.75/MWh with the local Bosnian Croat utility EPHZHB supplying an additional 125 MW for €48/MWh.

### Europe

## Inter RAO eyes European plants

Russia's state-controlled power producer and exporter Inter RAO UES revealed February 15 that it may acquire generation assets in Europe this year, and is looking into the possibility of setting up a consortium with Gazprom to share risks on the international market.

Ilnar Mirsiyapov, a member of the management board and head of the strategy and investment division at Inter RAO UES, told reporters after an extraordinary shareholders' meeting in Moscow that the company expects to conclude "one or two" deals this year. Inter RAO is mostly interested in gas-fired assets in Western Europe, the Balkans and Turkey, he said. Renewable energy is "also interesting".

The possibilities include "more than one" power plant from RWE, Germany's second-biggest utility. "We know that Gazprom terminated (talks) with RWE. We continue our talks with this company. There are assets that today provoke, if not excitement, then vivid interest. We are looking at the best assets," Mirsiyapov was quoted as saying.

RWE is looking at ways to cut debt and fund new projects after Germany decided to close all its nuclear reactors by 2022. The company has pledged to sell €11

billion of assets. "There has been a first meeting," Annett Urbaczka, a spokeswoman for RWE, confirmed when asked about possible cooperation with Inter RAO.

Gazprom ended exclusive discussions in December with the Essen-based company about a joint power venture but may return in a joint partnership with Inter RAO, according to Mirsiyapov. While Inter RAO is now studying expansion in Europe on its own, it may team up with Gazprom, Mirsiyapov said. "The possibility of a consortium with Gazprom, provided it is based on favorable terms for Inter RAO UES, has not been ruled out," and the company is looking for a partner to spread the risks, the spokesman quoted Mirsiyapov as saying.

Gazprom may supply fuel, while Inter RAO would guarantee purchases and help the gas exporter maintain and increase its share of the European market, he said. The utility may also seek other partners to reduce risks as it expands in Europe and Turkey, Mirsiyapov said.

"The European market is one of our priorities" for being stable and understandable, Mirsiyapov said. "It's a buyer's market, not a seller's." European power plants don't have to be "super profitable" as long as the offered price is attractive, Mirsiyapov said.

At the meeting, Inter RAO UES shareholders approved possible borrowings of up to €1.65 billion (\$2.2 billion) from Russian and foreign banks to finance and refinance its current credit portfolio, the spokesman said. Part of the loan could be used to help fund European acquisitions, he said, citing Mirsiyapov.

### Georgia

## EPC contractor sought for Namakhvani Cascade

Georgia's JSC Namakhvani HPP Cascade invites expressions of interest by April 2 to develop the three-plant 450-MW Namakhvani hydropower cascade on an engineering-procurement-construction (EPC) basis.

The project development company, JSC Namakhvani HPP Cascade, was formed in January by Georgian Oil and Gas Corporation to develop the Namakhvani Cascade on the Rioni River in western Georgia. Georgia's Ministry of Energy and Natural Resources invited bids in January to develop the three-plant cascade on a build-own-operate basis.

Construction of the 250-MW Namakhvani, 100-MW Zhoneti and 100-MW Tvishi plants and dams are expected to take five years to build at an estimated cost of \$800 million. The Namakhvani project will comprise three Francis turbines and a 111 meter-tall concrete arch. The Zhoneti project has been designed to incorporate two 50-MW Kaplan turbines and will also entail a 31 meter-tall rockfill dam, while the Tvishi plant will also entail two Kaplan turbines as well as a 56 meter-tall gravity dam with conventional vibrated concrete. The cascade is expected to produce average annual output of 1,681 GWh.

A feasibility study as well as the invitation notice and a form to request bidding documents are available on

the website of the Ministry of Energy and Natural Resources: [www.menr.gov.ge](http://www.menr.gov.ge)

Interested bidders may obtain further information, and inspect and acquire the prequalification documents at the following office: JSC Namakhvani HPP Cascade, Kakheti Highway 21, Tbilisi 0190 Georgia; Tel.: 00 995 32 224 4040; E-mail: [dcc@namakhvani.ge](mailto:dcc@namakhvani.ge)

## Greece

### Greece approves energy reforms

Greece's parliament approved February 12 a number of energy reform measures, including unbundling and privatization, which form part of a series of actions the cash-strapped country must take to secure a new European bailout of €130 billion (\$170 billion).

Athens must ensure that all electricity and gas network activities "are effectively unbundled from supply activities" by the end of this month, according to a memorandum of understanding published February 9 by the European Financial Stability Facility.

In the electricity sector, it must complete all necessary transfers of staff and assets of the transmission system operator (TSO), and make sure all necessary transfers of staff and assets are carried out to the unbundled distribution system operator. In the gas sector, Athens must implement unbundling "as provided for in Article 9 of Directive 2009/73/EC on common rules for the internal market in natural gas" within the first quarter and ensure the unbundled TSO is certified by the Greek regulator by the third quarter of this year.

Meanwhile, Athens is required to commit by the end of March to launch the privatization of the dominant power supplier PPC and natural gas supplier DEPA, following the unbundling of the TSOs, monitor the process to ensure competition in the market, and take measures to increase competition in the generation of electricity, the MOU said.

Greece must also finalize "remedies to ensure the access of third parties to lignite-fired electricity generation" by the end of Q1 2012, it added. Competitors to PCC must be able to "effectively use lignite-fired generation in the Greek market" by November 2013.

According to the MOU, Athens must in addition give the opportunity to investors to buy hydro capacity and other generation assets jointly with lignite capacity. But, it warned, the sale of these other assets must "not delay the sale of lignite assets" or "prevent the sale of lignite assets without a minimum price."

The MOU also directs that measures are adopted by June 2013 to ensure that the energy component of regulated tariffs for households and small enterprises reflects wholesale market prices, "except for vulnerable consumers."

As terms of renewables, Athens is required to prepare a plan for the reform of renewable energy support schemes by the end of Q1 2012, which will render the schemes "more compatible with market developments," while reducing pressures on public finances. The plan must include measures for the

development of wind and solar, and study current and expected trends in costs in relevant technologies.

The Greek government will also have to ensure its regulatory framework for energy guarantees transparency, congestion management and "non-discriminatory and efficient allocation of capacity on gas and electricity networks." The regulator will have to adopt a modified electricity market code and establish cross-border trading procedures with Bulgaria in line with EC regulations.

Finally, by Q4 2012 Athens must undertake to establish a one-stop shop for the licensing and permitting of LNG installations, natural gas storage, pipeline projects and electricity transmission lines, while by Q3 2012 it is required to establish an LNG code, approved by RAE, which will ensure transparency and access to the Revithoussa LNG plant, while efficiently allocating unused capacities.

## Hungary

### MVM to sell Q2 power

MVM Trade, the wholesale trading arm of state-owned Hungarian power group MVM, said February 15 it is planning to sell 514 GWh for delivery in the second quarter of 2012 at a March 7 capacity auction.

For April, MVM will auction 90 MW of baseload capacity for daily delivery, totaling 65 GWh; 170 MW on working days (0200-1900 hours), totaling 58 GWh; and 80 MW on working days at 0100-2000, or 30 GWh.

For May, MVM will offer 150 MW of baseload capacity for daily delivery between May 1-11, totaling 40 GWh, and 150 MW available daily at 0200-0600 throughout May, totaling 19 GWh. Also for May, it will auction 110 MW of baseload on working days, totaling 55 GWh; 90 MW available on working days at 0100-1900, totaling 34 GWh; and 80 MW available on working days between 0000-2000, totaling 34 GWh.

Products for June include 150 MW of baseload capacity daily between June 11-30, totaling 72 GWh; 130 MW available daily at 0200-0700, or 20 GWh; 50 MW of baseload capacity available on working days, or 25 GWh; and 150 MW on working days at 0000-2000, totaling 63 GWh.

As a significant market player and former monopoly, MVM Trade must sell almost half of its 20-TWh annual wholesale portfolio, either at auctions or via the physical futures market of the HUPX power exchange. It already sold 5.42 TWh of 2012 power at earlier auctions.

## Lithuania

### Lithuania to sell on Nord Pool

Lithuania is expected to begin offering electricity for sale on Nord Pool in the second half of this year, a BaltPool official told Platts February 20, following the adoption of a new electricity act, which paves the way for full market liberalization in 2013.

The Seimas, Lithuania's parliament, passed the law January 17 and it took effect after being officially published February 7.

Tadas Adomaitis, deputy director for development at BaltPool, the trading subsidiary of Lithuania's transmission system operator, Litgrid, said officials at Litgrid are discussing trading with Nord Pool and "there shouldn't be any obstacles". Adomaitis said the switch to trading on Nord Pool should be relatively simple, since BaltPool is organized according to Nord Pool's model.

Wholesale electricity is currently traded in Lithuania on the Lithuanian Power Exchange, operated by BaltPool. In 2011, total trading stood at 8 TWh. Under the new act, trading will be done on Nord Pool and Lithuania will be required to deliver power to the market.

The act also specifies that the National Control Commission for Prices and Energy will continue as the oversight authority for the electricity market.

Neighboring Estonia has already opened its market and trades on Nord Pool, but passage of market liberalization legislation in Lithuania and Latvia has been delayed.

## Poland

### PGE signs \$2.9bn Opole contract

PGE Elektrownia Opole, the owner-operator of the Opole power plant in southwest Poland, has signed a Zloty 9.4 billion (\$2.93 billion) net engineering, procurement and construction contract with a local consortium led by Rafako for two 900-MW units at the hard coal-fired plant despite having had its environmental permit revoked.

Under the contract, Rafako, Europe's largest boiler maker, and its partners, Polish civil engineering companies, Polimex-Mostostal and Mostostal Warszawa, will build unit 5 within 54 months and unit 6 within 62 months from the date they receive the order to start work, Elektrownia Opole said in a statement issued February 15.

Construction work is not likely to start until a legal challenge brought by, among others, the environmental legal group, ClientEarth, has been settled. Last month the Regional Administrative Court in Warsaw revoked the project's environmental permit on the basis of the Environmental Impact Assessment prepared by PGE, the country's largest power company, which owns the plant. PGE can appeal against the Regional Administrative Court's decision to the country's main administrative court or submit a new Environmental Impact Assessment.

Although the loss of the environmental permit does not automatically revoke the project's construction permit, it does increase the risk of starting construction because the ruling serves as a basis to start legal proceedings to revoke the building permit as well. The court ruled that PGE had not adequately prepared an analysis of the new units' carbon capture and storage readiness as required under an EU directive. The decision was also based on the project's impact on water and the climate and procedural irregularities.

Elektrownia Opole said the contract contained an annex limiting the risk to both sides related to the

court's decision and a separate appeal launched by Alstom, which failed to win the EPC contract despite submitting a slightly lower bid than the Rafako-led consortium. The contract is likely to contain a clause setting a deadline for the permitting dispute and appeal to be settled to enable construction to start, to reduce the risk for the contractors, a lawyer told Platts.

Market watchers anticipate the delay to the project could last between several months to a year. Construction of the units, which will have net efficiency of 45.5%, will more than double the plant's capacity to 3,332 MW. PGE has said it expects to commission unit 5 in Q4 2016 and unit 6 in 2017.

### Court upholds Polnoc permit ruling

A Polish court has upheld a decision to revoke the Integrated Pollution Prevention and Control (IPPC) permit for a new greenfield 780-1,050-MW coal-fired power plant in Pelplin in north Poland, the environmental legal group, ClientEarth, told Platts February 17.

The Voivodship Administrative Court in Warsaw ruled the Environment Ministry's decision to revoke the IPPC permit last September, was valid, Ewa Jakubowska-Lorenz, ClientEarth spokeswoman, said. She added that the investor, Kulczyk Investments, would have to apply for a new IPPC permit at the office of the Marshall of the Voivodship.

ClientEarth is party to two legal procedures against the project, including the IPPC permit and an appeal against a decision to award it a construction permit.

Kulczyk Investments, owned by Polish businessman, Jan Kulczyk, was awarded a permit to build the Elektrownia Polnoc plant by the authorities in Tczew in July. The company has set a deadline of the end of this month for bids in the EPC tendering process.

Kulczyk Investments plans to build up to 2,000 MW of capacity at the site in Rajkowy in the district of Pelplin. Construction of the first unit could start next year for commissioning in 2016-2017.

### Coal miners to build new capacity

Polish hard coal producers plan to invest around Zloty 5 billion (\$1.6 billion) to build more than 1.2 GW of new, mainly hard coal-fired capacity, the daily, *Rzeczpospolita*, reported February 20.

The daily said Europe's largest hard coal miner, Kompania Weglowa (KW) is planning the largest project, a Zloty 4 billion, 900-MW unit. KW plans to take a 50% stake in the project and is talking with two companies from China and South Korea about a partnership.

Europe's largest coking coal producer, Jastrzebska Spolka Weglowa (JSW), meanwhile, plans to invest more than Zloty 1 billion to build 300 MW of cogeneration capacity by 2015 to cut its power supply procurement costs. Among its plans are a 70-MW unit at its Elektrociepłowni Zofiowka CHP plant and increasing the capacity of the CHP plant at its Przyjazn colliery from 65 MW to 104 MW.

Poland's second largest hard coal miner, Katowicki Holding Weglowy, is mulling a Zloty 400 million project

to build two 40-60 MW units at its Murcki-Staszic and Myslowice-Wesola mines.

Privately-owned coal miner, Lubelski Wegiel Bogdanka, is also planning a 75-MWe and 68-MWth waste-burning unit at its energy subsidiary, Leczynska Energetyka, the daily said.

## Poland awaits PGE-Energa ruling

Poland will make a final decision regarding power group Energa after a ruling in May by the country's anti-monopoly court on its planned takeover by the country's major utility, Polska Grupa Energetyczna (PGE), Treasury Minister, Mikolaj Budzanowski, said February 21.

After he became minister last November Budzanowski said he was thinking of abandoning the merger because a ruling from the Court of Competition and Consumer Protection (SOKiK) was taking too long. Legal proceedings in the matter were launched in January 2010 and a ruling was not expected before the end of this year.

"We said we'd take a decision on the fate of the takeover of Energa by PGE by the end of this quarter but I've just received news the date of the hearing before SOKiK has been brought forward," Budzanowski told the daily, *Gazeta Wyborcza*. "It is scheduled to take place in mid-May and it's worth waiting till then, but no longer. Afterwards we'll take a decision on what to do," he added.

Poland's Office of Competition and Consumer Protection (UOKiK) blocked the Zloty 7.5 billion (\$2.38 billion) merger on the grounds it would enable an enlarged PGE to dictate the country's energy prices. PGE already controls 42% of the generation market and the merger would increase its share of the distribution market from 26% to 40%. Energa, based in Gdansk in northern Poland, lacks its own significant generation capacity but supplies power to 2.5 million households and 300,000 businesses. PGE filed an appeal with SOKiK against UOKiK's decision in January 2010.

The government has made the sale of its 85% stake in Energa a key element of its privatisation program. It has also so far failed in its attempts to sell off its 52% stake in another power company, Enea.

Earlier this month, deputy Treasury Minister, Pawel Tamborski, said a merger between Enea and Energa was one of several options under consideration if the court rules against PGE's takeover of Energa.

Robert Maj, an analyst at KBC Securities, commented February 21 that should the takeover be approved, PGE would likely review the price it offered in 2010. "In the case the merger block is maintained we expect Energa to be most likely listed on the WSE while PGE would be able to crank up its other investments," he added.

## Polish-US JV completes Darlowo wind parks

US wind power developer Invenergy, in a joint venture with Poland's Enerco, is set to commission three wind farms with a total capacity of 80 MW in Darlowo on the Baltic Sea coast in northwest Poland.

The Chicago-based developer confirmed mid-February that the last turbines at the 25-MW Wiekowice, 25.7-MW Dobieslaw and 27.5-MW Jezyce wind parks were installed at the beginning of February and that the wind parks were undergoing the final stages of commissioning. Full COD is expected by the end of Q1, the company said.

The three wind farms feature a total of 32, 2.5-MW turbines supplied by GE Wind Energy, each with a hub height of 100 metres. All three are connected to the 400-kV grid in Dunowo, southwest of Koszalin, through a 38 km-long 110-kV double-circuit line, which was built by Gdynia-based Elfeko. A 110/400-kV step-up substation and a 30/110-kV substation at the site of the wind farm were built by SAG Elbud Gdansk Holding. The civil works were carried out by local contractor MDI.

The joint venture previously collaborated on the 50-MW Tymien wind farm, which entered into service in 2006, and is operated jointly by the partners. Invenergy and Enerco also plan to commission between the end of 2012 and the end of the first quarter of 2013 a further four wind projects with a combined capacity of 95 MW near Darlowo.

The 30-MW Boryszewo, 17.5-MW Krupy, 25-MW Nowy Jaroslaw and 22.5-MW Stary Jaroslaw projects will also feature 2.5-MW GE turbines, as will two wind farms in the locality of Darlowo with a combined capacity of 75 MW that the Polish-American joint venture plans to bring on line in 2013.

## Demand in January down 0.33%

Polish gross power consumption in January slipped 0.33% year-on-year to 14,374 GWh, while gross production last month fell 0.1% to 14,826 GWh, according to figures published February 9 on the website of the country's state transmission system operator, PSE Operator.

Around 90% of the country's total production or 12,901 GWh, was produced in coal-fired plants: 8,056 GWh from hard coal-fired plants (down 6.7% year-on-year) and 4,845 GWh from lignite-fired plants (up 10.3%).

The remaining 1,925 GWh were produced in plants producing power solely for industrial purposes (down 1.9% to 876 GWh), gas-fired plants (up 5.6% to 463 GWh), hydro (down 30.7% to 196 GWh), wind power (up 92.2% to 385 GWh), and other renewable sources (6 GWh) the TSO said.

## Romania

## Eolica to cancel suit against TSO

Eolica Dobrogea (Schweiz), a Swiss-based developer of wind projects in Romania, has allayed fears of legal action over a grid connection permit it had secured last March for 600 MW of new wind capacity that it is developing for Spain's Iberdrola Renovables in the county of Constanta in the southeastern region of Dobrogea.

Christoph Kapp, the sole board member of Eolica Dobrogea (Schweiz) told Platts February 21 that the Swiss holding company is to withdraw legal action launched independently by the administrator of its

Romanian subsidiary against Transelectrica, the country's power transmission system operator, and the sector regulator ANRE, over the TSO's alleged refusal to conclude the grid connection agreement.

Transelectrica issued February 20 a statement through the Bucharest stock exchange revealing that Eolica Dobrogea Srl had sued it, the regulatory authority and two former executives of the TSO, for rejecting the wind developer's claim to have fulfilled all preconditions for connection to the grid.

According to the statement, a first suit was filed by Eolica Dobrogea Srl against all parties on January 3, for which ANRE and Transelectrica filed their statements of defence on February 3 with a new hearing set for March 16. On February 13 there was a new citation only for Transelectrica with the hearing set for March 15, when the TSO said it plans to file its statement of defence and request combining the two law suits.

Kapp said that the Swiss holding company was in the process of removing Corneliu Dica, the administrator of Eolica Dobrogea Srl, for "acting not according to our business rules and in a completely unethical way", and would then withdraw the law suits filed by Dica. "This step of the administrator has been taken by himself without any legal basis, in complete breach of all ethic and business codes and rules and without any approval of our company and of our board of directors as the 95% shareholder of Eolica Dobrogea Srl," he said.

"We have initiated the legal procedure required to replace the actual administrator of Eolica Dobrogea Srl with a trustful and responsible new manager. This will, based on the legal system in Romania, require some time. Once this new management is in place, one of the first actions will be the immediate withdraw of the legal actions, litigations and court files initiated by the former administrator. This will then hopefully lead again to a well established and professional business relationship between ANRE, Transelectrica and Eolica Dobrogea Srl. This is our firm commitment," he added.

Kapp said it had been granted February 17 a three-month extension until May 18 to its grid connection contract "in order to fulfill the conditions precedent set forth in the grid connection contract for 600 MW at Tariverde". "This will be achieved in due time by our entities," he stated. "This engagement of Transelectrica shows that, despite the unacceptable legal steps taken by the actual administrator of Eolica Dobrogea Srl, the grid operator is strongly interested in the implementation of our task to connect 600 MW of wind power to Transelectrica's grid," he said.

The grid connection permit will allow for the connection of a series of planned wind parks in the communes of Baia, Istria, Sacele, Kogalniceanu and Cogealac. As part of the project Iberdrola Ingenieria y Construcction is to build a new 220/400-kV substation in Tariverde in the municipality of Cogealac. Eolica Dobrogea (Schweiz) agreed in February 2008 to sell its complete project pipeline of around 50 wind parks in the Dobrogea region with a combined installed capacity of 1,600 MW to Iberdrola Renovables for a price of between €200 and €300 million.

The Swiss holding company, which was established in May 2007, is 50% owned by Switzerland's NEK Group, 22% by the Romanian company Rokura, and 17% by Corneliu Dica. Eolica Dobrogea Srl., the company's subsidiary based in Constanta, is 95% owned by Eolica Dobrogea (Schweiz) and 5% by Corneliu Dica.

## TSO loses head over February freeze

Horia Hahaianu, the managing director of Transelectrica, Romania's state-controlled grid operator, became the first high-profile casualty of the February freeze, following his forced resignation on February 14.

Hahaianu, who took up his position as head of the TSO last May, was ordered to tender his resignation by the new Minister of Economy, Trade and Business Environment, Lucian Bode, for issuing a company statement earlier this month that was deemed by the government to overstate the gravity of the power supply situation in Romania as a result of the bad weather.

Transelectrica issued a statement February 13 that was subsequently withdrawn that it did not have the necessary reserves to keep the system operating properly. The TSO subsequently stated that it would be forced to limit or even cancel electricity exports between February 15 and March 16, as well as limit supply to domestic consumers due to the weather conditions. Transelectrica reported that average daily consumption in Romania reached its highest level for the last ten years in February, with maximum consumption recorded February 3 at 8,466 MW. Peak load averaged 8,106 MW during the first 14 days in February, compared to an average of 7,749 MW last February, it said. Electricity cuts of several hours were experienced across the country last week.

Transelectrica moved quickly to replace Hahaianu, with the announcement February 15 of the appointment with immediate effect of Octavian Lohan, the company's deputy general manager, as its new managing director. The economy minister told a press conference February 15 that Lohan would act as general manager of the TSO until a new "professional" manager is appointed. Bode said that he expected that Transelectrica would have private management "towards the end of the year". The government is currently tendering for new professional, private management of the country's state-controlled energy companies to improve sector efficiency.

## TSO net profit rises tenfold

Romania's state-owned power transmission grid operator Transelectrica posted a preliminary net profit in 2011 of RON 90.3 million (€21.2 million, \$27 million), according to unconsolidated financial results, audited under Romanian Accounting Standards, released February 15.

The net profit was nearly ten times higher than the RON 9.6 million posted in 2010 net profit but still disappointed the market, which had estimated net profit at RON 131.1 million.

The company registered a 14% year-on-year increase in net turnover to RON 2.9 billion (€685 million), and a

31% year-on-year rise in its operating profit before interest, taxes, depreciation and amortization (EBITDA) to RON 460.4 million (€108 million).

The TSO reported improved full-year financials despite a weak fourth quarter, in which it made a net loss of RON 63 million due, according to Raiffeisen Capital & Investment, to high provision costs and financial losses. "The company recorded provisions of RON 47 million, probably for doubtful receivables," noted analyst Iuliana Mocanu. "The additional costs erased the upside from higher than anticipated interconnection revenues and lower third parties expenses," she added. Lucian Albulescu of KBC Securities said that the Q4 results were impacted by increased maintenance expenses after the company received government approval for their expense program.

The TSO transported 14.1 TWh over the quarter, 8% lower year-on-year.

## Russia

### Ministry calls for 40 GW by 2017

Russia will need to commission over 40 GW of new generating capacity over the next five years to meet an expected rise in electricity demand, according to the latest forecast presented in early February by the Ministry of Energy.

The ministry said it foresees demand being 18.4% higher in 2017 than in 2010, which implies a Compound Annual Growth Rate (CAGR) of 2.4% for this period. Based on this forecast, the ministry believes that the power sector needs to commission 41.1 GW of new capacity, of which 26 GW will be in the form of thermal power generation.

The forecast and new build proposals are likely to face opposition from the power industry, who believe that such a large commissioning plan is unnecessary because they expect demand to grow at 1% annually, according to Alexander Kornilov, senior utilities analyst at Alfa Bank. "We think this demonstrates a continuing disagreement between power generators and government regulators regarding how much new capacity is needed for the economy," he commented.

"We agree that the Ministry of Energy's demand forecast might appear to have some downside risk given that in 2011 demand rose only 1.1% year-on-year. However, we continue to stick to our electricity demand forecast of 2.5% annual consumption growth," he added.

### OGK-2 considers new share issue

OGK-2, Russia's largest wholesale thermal power producer, will likely issue additional shares in 2013-2014 to finance its mandatory investment program, according to Gazprom, its controlling shareholder.

Representatives of Gazprom Energy Holding, the holding company which unites Gazprom's main power generation assets, revealed at Gazprom's Investor Day held February 10 that due to its high investment

commitments, the genco may have to resort to an additional share placement in 2013-2014.

Currently OGK-2 is financing its capex through debt, but from mid-2013 it will have to find other sources since further debt financing will be problematic, the company said. The other option would be to raise funds from Gazprom Energy Holding. A final decision will be made in the second half of this year.

Due to its planned consolidation of OGK-6, the united OGK-2 has the largest mandatory investment program in the OGK universe with some 3.6 GW of new capacity to be commissioned in the next three years.

### IES' debt weighs on merger plans

The planned merger of the generation assets of Gazprom and industrial group Renova could collapse as a result not of competition concerns but of the latter's debts, according to a report in *Vedomosti*.

The Russian business daily said January 20 that the high consolidated debt of Integrated Energy Systems (IES) Holding, the power sector arm of Viktor Vekselberg's Renova, has slowed negotiations between Gazprom and Renova over their respective shareholdings in the future merged entity. Renova is reportedly insisting on a 25%+1 share stake in the merged company as well as several billion rubles in cash but, according to *Vedomosti*, IES Holding has Rb 130 billion of consolidated debt, which significantly reduces its equity value.

For the merger, the assets of Gazpromenergoholding, comprising OGK-2, Moscow-based Mosenergo and TGK-1, the northwestern regional generator, were reportedly valued at Rb250 billion while IES Holding, including its controlling stakes in four regional gencos (TGKs) and some retailers, is valued at Rb120-162 billion, excluding its debt.

Analysts at Alfa Bank said that in addition to the unspecified concessions demanded by the Federal Anti-Monopoly Service, this additional issue may be the final nail in the merger's coffin. "The merger's viability sounds less and less likely by the day," the investment bank said in an equity research note on February 20.

Last July, the Russian gas giant and the privately-owned industrial group announced the signing of a memorandum of understanding to create an entity with a combined installed capacity of around 52 GW and a share of around 25% of the domestic electricity market (*EIEE 219/1*). However, concerns expressed by the antitrust agency that the tie-up would impede competition led Gazprom to first withdraw its approval request with the Federal Anti-Monopoly Service in December before announcing in January that it would make a new request for regulatory approval and expected to finalize the consolidation by the end of the first quarter of this year as previously agreed.

Gazpromenergoholding, a 100% subsidiary of Gazprom, comprises the wholesale power producers OGK-2 and OGK-6, Mosenergo and TGK-1, with a combined installed capacity of around 36 GW, producing 17% of Russia's electricity. IES Holding, the country's largest privately-owned power and gas supplier, controls four regional gencos – TGK-5, TGK-6, TGK-7, and TGK-9 – with a

combined capacity of about 16 GW and annual production of 68 TWh. It is also the country's largest heat producer, accounting for 12% of the centralized heat supply market.

## Regional support for RusHydro

RusHydro, Russia's state-owned wholesale hydropower producer, announced February 17 the signing of a memorandum of cooperation with the regional government of Krasnoyarsk for the development of the Nizhnye-Kureyskaya hydropower plant in northern central Russia.

The company said that the first units of the 150-MW project, planned in the Turukhanskiy area on the Kureyskaya River, downstream from the Kureyskaya hydro plant, are expected to enter operation in 2018.

RusHydro said it will seek project financing for the project, which will cost an estimated Rb29.8 billion (US\$ 994.7 million) (excluding VAT), including transmission infrastructure. The estimated capex for the project is high at \$6,600/kW compared to normal capex for hydropower capacity of \$2,000-3,000/kW, but is understood to be because of the region's permafrost. However, RusHydro stressed that its participation is conditional on "raising sufficient outside financing and support from the local administration".

The state-controlled company added that it already has a preliminary power purchase agreement signed in August 2011 with local supplier Turukhanskeno, according to which it will sell the scheme's output at a fixed price of Rb16/kWh (US\$ 0.53/kWh) (subject to yearly indexation). The offtake agreement is valid until December 31, 2042 and will ensure a 15-year payback period for the project, it added. The scheme is projected to produce average annual output of 890 GWh.

According to Alfa Bank, the net present value of the project looks positive, with a discounted payback period of 17 years versus the company's estimate of 15 years, and an internal rate of return of 15% at the 11% discount rate assumption. "Thus, overall the project looks economically feasible and value accretive, so RusHydro should easily find lenders for project financing," it commented February 20.

RusHydro said that the Nizhnye-Kureyskaya project is of "utmost importance for the Krasnoyarsk Region and its northern territories, which suffer from a lack of efficient generation". It will entail a significant decrease in budget subsidies from the substitution of expensive diesel-fired generation with more efficient hydropower.

Households in Turukhanskiy are not connected to the national grid and as a result are supplied by diesel-fired plants at tariffs subsidized by the regional budget. The cost for the regional government is underlined by the fact that the subsidized tariff for households is fixed at Rb1.06/kWh (including VAT), while in 2011, economically justified tariffs of the diesel-fired plants of Turukhanskeno amounted to Rb22.8/kWh (including VAT) for households and more than Rb37.245/kWh (excluding VAT) for all other consumers.

The project has already undergone a feasibility study and public hearings on its expected environmental impact, it concluded.

## Quadra raises 2012 capex budget

Quadra, the western Russian territorial heat and power producer, formerly known as TGK-4, is to increase its capital expenditure on new generation capacity this year by 24% year-on-year to Rb12 billion (\$403.6 million), under an investment program for this year approved in mid-February by the company's board of directors.

While the program envisages the commissioning of two new units with a combined capacity of 220 MWe this year, the company said February 16 that about 80% of its capex budget this year would be spent on capacity that will be commissioned between 2013 and 2015.

Under its mandatory investment program, Quadra is to add 1,092 MW of new capacity through to 2015, increasing its installed capacity by 32%. The generator currently operates 25 mostly combined heat and power plants in the central Russian regions of Belgorod, Bryansk, Voronezh, Kaluga, Kursk, Lipetsk, Orel, Ryazan, Smolensk, Tambov and Tula with an aggregate capacity of 3,518 MWe and 15,260.1 Gcal/hr.

To date it has already completed about 30% of its committed investment program. In May 2009 it commissioned a 52-MWe combined cycle gas turbine unit at its Eletskaia CHP plant in the Lipetsk region, followed in October 2010 with a 115-MWe CCGT unit at its Voronezhskaya CHP-2 plant. Last year it brought on line in May a 30-MWe CCGT unit at the Kaluga plant, southwest of Moscow and in June launched into operation a new 115-MW CCGT unit at its Kursk CHP plant. The last three projects all feature GE gas turbines.

Later this year, it expects to commission a 190-MWe CCGT unit at its Novomoskovskaya thermal power plant in the Tula region and a 30-MWe CCGT unit at its Livenskaya power plant in the Orel region. The former will incorporate a 126-MWe PG9117E gas turbine supplied by GE, a 64-MW steam turbine supplied by Siemens and a heat recovery steam generator provided by ZIO Podolsk while the latter will feature a GE LM 2500 gas turbine.

In 2013 it expects to start operation of two 115-MWe CCGT units – one at its Diaghilev CHP plant in the Ryazan region and another at the Aleksinskaya CHP plant in the Tula region, followed in 2014 by a 223-MWe CCGT unit at its Voronezhskaya CHP-1 plant and culminating in 2015 with a 115-MWe CCGT unit at its Kursk-1 power plant.

Quadra is 49.99% owned by the private investment holding Onexim Group, owned by oligarch Mikhail Prokhorov.

## Lower output for IES gencos

Integrated Energy Systems Holding, Russia's largest privately-owned heat and power producer and supplier, reported February 7 lower electricity and heat production last year by its four regional gencos (TGKs), which it attributed chiefly to the warmer weather.

IES Holding, a unit of the industrial group Renova, owned by Viktor Vekselberg, holds controlling stakes in TGK-5, TGK-6, Volzhskaya TGK (TGK-7) and TGK-9, which

own and operate a series of combined heat and power and district heating plants in the Volga and Urals regions.

IES Holding, referred locally as KES Holding, reported a 0.6% year-on-year fall to 61.4 TWh in electricity output at the four gencos and a 0.6% decrease in heat production to 119 million Gcal.

"The reduction in heat production was experienced as a result of higher temperatures in the first and fourth quarters of 2011 than in 2010, which also caused a decrease in electricity generation in CHP plants operating in combined cycle mode, the company said.

Analysts at the Russian brokerage Finam said that while the decline in heat output was certainly a result of warmer weather conditions in 2011, the stagnation in electricity production was more likely rooted in the relatively low fuel efficiency of the holding's CHP plants in comparison with regional thermal power plants, which would therefore have received priority in terms of dispatch by the grid operator.

Production figures for the last four years would seem to suggest that the lower production last year is not purely weather-related as both heat and power output have declined steadily since 2008. Electricity production has slumped 10.5% in the last four years from 68.6 TWh in 2008 while heat output has dropped 1.2%.

Finam stressed that with no new generating capacity commissioned last year, the holding's TGKs had missed out on the growth in regional electricity consumption, which rose last year in the Volga and Urals pricing zones by 2.9% and 2.4% year-on-year, respectively.

The future of the four gencos remains up in the air with the market waiting to hear whether IES-Holding is to proceed with the planned consolidation of TGK-5, TGK-6 and TGK-7 into TGK-9, and most notably about the planned merger of the assets with the electricity generation assets of Gazprom. A decision on the latter merger is expected by the end of the first quarter and could require IES-Holding being forced to divest of some of its assets.

## KTZ tests Kolpino steam turbine

Russia's Power Machines said February 9 that its subsidiary Kaluga Turbine Works (KTZ) has manufactured and successfully tested a steam turbine to be supplied for a new gas-fired power unit being built in the Kolpino district of St. Petersburg in northwestern Russia.

KTZ is to supply and supervise installation of the steam turbine with a capacity of 33 MW under a contract signed with the project EPC contractor Soyuz Power Development Corporation in February 2011.

Soyuz Power Development Corporation is building a 110-MWe, 89-MWth combined cycle power unit in an industrial park in Kolpino for GSR Energo, a local electricity and heat supplier. The new CCGT unit will also comprise a 77-MW Frame 6FA gas turbine and generator being supplied by GE, as well as a heat recovery steam generator supplied by ZIO Podolsk. The new unit is scheduled to be put into operation in Q1 2013.

The Kolpino plant will comprise two identical units to meet rising demand for both heat and power from local

industry and households. The second unit is currently slated to start operating in March 2014.

GSR Energo currently owns and operates a 25-MWe, 944 Gcal/hr gas-fired CHP plant, which was commissioned in 1952, and which supplies heat and power to over 100 companies in the Kolpino industrial centre as well as to some 144,000 residents in the district.

## Serbia

### Srbijagas to hold talks with GE

Serbia's natural gas supplier Srbijagas announced that it would soon hold talks with major equipment suppliers for the possible construction of several new gas-fired power plants in the country.

"Representatives of General Electric are coming to visit us before the end of this month. We will hold talks with them about the possibility of building large new natural gas-fired thermal power plants in Serbia," Srbijagas director general, Dusan Bajatovic, said February 15 during a press conference reported by Serbia's state news agency *Tanjug*.

He explained that the first such project could be built in Belgrade with Gazprom, Naftna Industrija Srbije and the city of Belgrade. "The remaining three or four plants would probably be a partnership with Russian capital and natural gas deliveries and we will probably hold talks with the Germans and certainly with the Americans," he added.

## Turkey

### Hattat to build 1.3-GW coal plant

Turkey's Hattat Holding has signed a \$1 billion agreement with China's Avic for the construction of a 1.32-GW hard coal-fired power plant, Hattat chairman Mehmet Hattat told Platts February 22.

"We have a generation license and are working on the environmental impact study," he said, adding that he is hoping that construction of the plant can begin by the end of this year or early in 2013.

Construction of the Amasra plant in the Black Sea province of Bartın is expected to take 42 months after which the plant will be operated by Avic and supplied with coal from the adjacent Bartın-Amasra coal field to which Hattat holds rights, he said.

According to the website of Hattat's energy subsidiary, Hema Enerji, the Bartın-Amasra coal field holds reserves of 573 million mt of hard coal. Extraction is to be conducted by China's Datong with whom Hattat has a long-term agreement, beginning at 5 million mt per year and rising eventually to 10 million mt.

In addition to the Amasra project, Hattat has also applied for generating licenses for four more coal-fired plants of 66 MW each, which Hattat also plans to supply from the Amasra field. "We plan to build as many plants as we can supply with coal," Hattat told Platts.

In addition to coal production, Hattat also said the company has been looking at coal bed methane production. "We've done some test drilling but the volume produced wasn't sufficient so we plan to continue with horizontal drilling and fracking," he said. The drilling has been conducted in the Zonguldag-Amasra-Azdavay region of Turkey's west Black Sea coast where official studies have indicated possible reserves of as much as 600 billion cubic meters of gas.

## Socar to add 600 MW of capacity

Socar plans to add around 600 MW of new power generating capacity to the existing 220 MW plant it operates at its majority-owned Petkim petrochemical plant on Turkey's Aegean coast, Rovnag Abdullayev, president of the Azeri state oil company, said February 13.

Abdullayev told reporters that the new thermal plant will burn waste products from the Petkim plant and from the adjacent 10 million mt/yr STAR refinery that Socar is building adjacent to the Petkim plant.

Petkim is also to build a 25-MW wind farm on a site close to the petrochemicals complex in Aliaga to supply its electricity supply needs. Petkim was awarded a 49-year generating license last February.

Abdullayev also confirmed that Socar was interested in investing in coal-fired power plant in Turkey, specifically a plant burning locally produced coal or lignite. "We have no specific project or coal field in mind but we are interested in forming a partnership with a local company to look at possible projects," he said.

Abdullayev pointed out that the high cost of imported gas meant that it was no longer feasible for Turkey to meet its baseload power supply requirements by burning gas and that it was a good time to invest in new coal-fired generation projects.

Socar holds a 57.8% stake in Petkim, the country's sole petrochemical producer, and an 81.6% stake in the STAR refinery. It acquired a 51% stake in Petkim with Turcas Petrol in May 2008 for \$2.04 billion.

## Akfen 450-MW CCGT approved

Akfen Enerji has obtained approval from the Turkish energy market regulator, EPDK, to build a 450-MW combined cycle gas-fired power plant at Mersin on the East Mediterranean coast, its parent company, the Turkish industrial conglomerate Akfen Holding, said in a disclosure to the Istanbul bourse February 22.

The plant, which is expected to generate 3.26 TWh a year, has already had its environmental impact study approved, according to the stock market disclosure. Generating licenses are usually issued within a few months of the announcement of license approval.

According to Akfen Enerji's website, the plant will be built on the site of an existing fuel oil-fired plant, which will be dismantled. Although a license has been issued for an initial capacity of 450 MW the new plant could later be expanded to 800 MW, the company said.

Negotiations with EPC contractors and turbine manufacturers are at an advanced stage, according to

the website. Once construction is agreed, it is expected to take two years to complete.

Akfen Enerji is also developing three portfolios of 21 mostly small hydro plants totaling 354 MW, of which 128 MW is already operational and another 194.1 MW holds generating licenses. In addition, it is building the Laleli 99-MW storage hydropower scheme near Bayburt in northeastern Turkey for which it has a 49-year generating license.

## GE wins Erzin CCGT contract

GE has secured contracts to supply equipment and services for a 900-MW combined cycle gas turbine power plant being developed in Erzin in Turkey's southern Mediterranean province of Hatay.

The US engineering company said February 13 that it will supply two Frame 9FB gas turbines and three generators for the project and will also provide planned and unplanned maintenance services to help ensure the long-term operation of the equipment under a 12-year service agreement.

The Egemer-Erzin project is being built under an engineering, procurement and construction contract by a consortium of Turkey's Gama and GE on behalf of owner-operator, Egemer Elektrik, a wholly-owned subsidiary of Akenerji, a local power producer jointly majority owned by the Akkok Group and Czech power utility CEZ. The plant is expected to enter commercial service in the third quarter of 2014.

Skoda Power, a subsidiary of Doosan Power Systems, is supplying a 320-MW steam turbogenerator for the project under a contract announced last December (*EIEE* 229-230/19). Akenerji finalized a \$651 million credit last October with four Turkish banks for the project.

## Ukraine

## Summer sale of last two gencos

Investors are to be offered the opportunity to buy majority stakes in Ukraine's two remaining state-owned thermal power generators, Centrenergo and Donbassenergo, this summer.

Stakes of 53.3% in Centrenergo, the second largest of the state-controlled fossil fuel-fired power producer by installed capacity, and 60.8% in Donbassenergo, the smallest by installed capacity, have been included on a list of assets to be privatized in June 2012, which was published by the government February 9.

The sale of controlling stakes in both gencos may attract foreign investors, most likely from Russia, according to Dennis Sakva, utilities analyst at Kiev-based brokerage Dragon Capital. "Russian investors could particularly be interested in Centrenergo, as the company's gas-fired blocks are technically capable of supplying Russia's southern regions," he said in an equity research note published February 10.

Sakva suggested that it may be more expedient for interested bidders to acquire both Centrenergy and Donbassenergy and consolidate them into one entity in order to make it more competitive with DTEK, which controls the three remaining thermal gencos – Dniproenergy, Zakhidenergy and Vostokenergy.

Dragon Capital estimates starting prices may range from \$1.33-1.5/share for Centrenergy (21-36% above current market price) and \$6.25-6.60/share for Donbassenergy (60-69% above market), implying at least \$350-390 million of total privatization revenues.

Centrenergy, which is currently 78.3% owned by the state through the sector holding company, the Energy Company of Ukraine, operates three power plants – Vuglegirska, Zmiyivska and Trypilska – with a combined capacity of 7,550 MW, accounting for 15% of total domestic capacity. It operates three 800-MW gas-fired blocks at its Vuglegirska plant and two 300 MW gas-fired blocks at the Trypilska plant, implying a total gas-fired capacity of 3,000 MW. The rest of its units are coal-fired. All 23 units at the three plants in the industrialized regions of Kyiv, Kharkiv and Donetsk were commissioned in the 1960s and 70s.

Donbassenergy, which is currently 85.8% owned by the state through the sector holding company, the Energy Company of Ukraine, operates the Starobeshevskaya and Slovyanska plants – with installed capacity of 2,630 MW, accounting for 5% of domestic generating capacity.

## SPF sells stakes in discos

Ukraine's State Property Fund sold 50% stakes in two regional power distributors, Vinnytsiaoblenergo and Zakarpattiaoblenergo, to two of the country's main sector investors at auctions held February 13.

Lugansk Energy Union, a subsidiary of the Energy Standard Group, owned by Russian businessman Konstantin Grigorishin, submitted the winning bid of Hryvna 176.2 million (\$22 million) for Vinnytsiaoblenergo, which serves the western central region of Vinnytsia, while VS Energy International won the bidding for the stake in Zakarpattiaoblenergo, which supplies the western region of Zakarpattia, with a bid of Hryvna 140.7 million (\$17.6 million).

Both investors paid slightly above the starting prices fixed by the SPF and significantly above the market price. Energy Standard Group's offer for Vinnytsiaoblenergo valued the company at \$44 million, or 5.5 times the market cap suggested by current stock market quotes, Dennis Sakva, utilities analyst at Dragon Capital, said. The sale implies a 2010 EV/EBITDA of 4.9, P/E of 8.4, EV per customer of \$92, it said. The auction price paid by VS Energy, 4% above the starting price, implied a market cap of \$35.2 million, or 278% above current stock market quotes, valuing Zakarpattiaoblenergo at a 2011 EV/EBITDA of 4.1x and P/E 62.9 and EV/Customer of \$73.

As a result of the auctions, the two investors have secured control of the two distributors. Grigorishin already held a 20.3% stake in Vinnytsiaoblenergo,

through Garenisia Enterprises, giving him a 70% stake in the oblenergo, while VS Energy, now controls 60.5% of Zakarpattiaoblenergo, having earlier acquired 10.5% in the oblenergo.

Following the auctions, VS Energy holds controlling stakes in six of Ukraine's 27 regional distributors (Odesaoblenergo, Khersonoblenergo, Kirovohradoblenergo, Sevastopolenergo and Zhytomyroblenergo) while Energy Standard (together with Privat Group) now has control of five.

The results of the auctions were as expected. Alexander Paraschiy, an analyst at brokerage Concorde Capital, said that the disqualification of Lvivoblenergo, part of Grigoriy Surkis' group, from the sale of Vinnytsiaoblenergo by the General Prosecutor's Office was in line with its belief that minority shareholders – VS Energy, Energy Standard and DTEK – have already distributed the oblenergo stakes to be privatized between themselves.

Vinnytsiaoblenergo owns a 46,366 km low-voltage grid, with 3,722 MVA of transformer capacity and supplies electricity to 676,260 customers. Zakarpattiaoblenergo supplies electricity to 424,000 customers through an 18,000 km low-voltage grid. It also owns three small hydro plants with combined capacity of 32 MW. Operating in a mountainous region, Zakarpattiaoblenergo has the highest distribution losses in the sector (24.7% in 2010).

## EBRD considers wind park loan

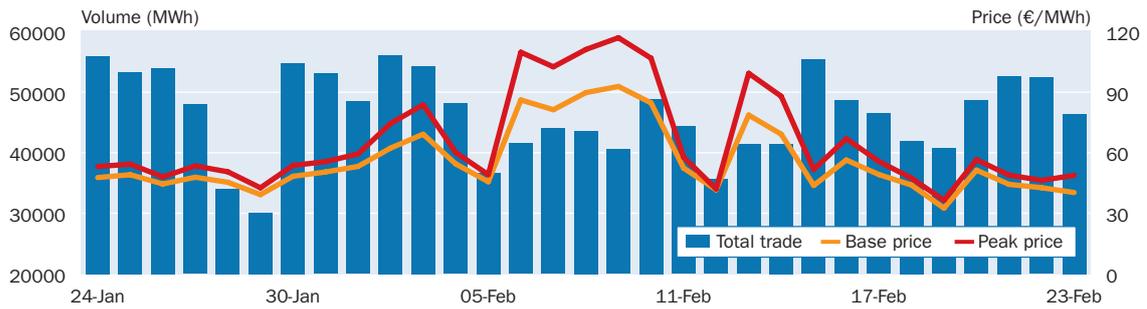
The European Bank of Reconstruction and Development is considering providing a senior loan to LLC Novoazovskiy Wind Park to help complete construction and commissioning of an additional 32.5 MW of capacity at an existing wind farm in the Donetsk region in Ukraine.

The London-based multilateral lender said in a project summary document issued February 8 that it could lend up to €33.3 million to LLC Novoazovskiy Wind Park, a special purpose company incorporated in Ukraine, towards the cost of the project, which is estimated at up to €95.2 million.

The loan, it said, would be supplemented by a loan of up to €15.5 million from the Clean Technology Fund (CTF). The EBRD said it intends to utilize Clean Technology Fund support for the project in the form of a senior loan with possible concessional elements, depending on further financial analysis, to support the development of a market for large-scale wind technology in Ukraine. The project features wind turbines supplied by Germany's Fuhrlander.

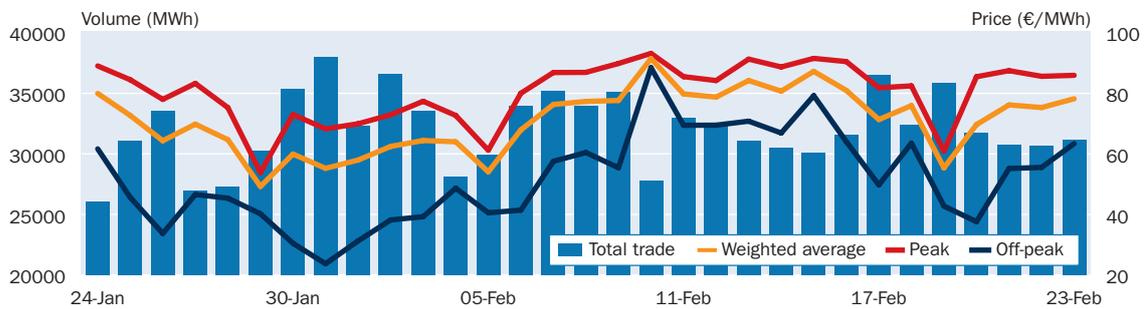
The wind farm, which partially replaces existing small turbines, is under construction following permitting under national regulations, the bank said, but added that funding would depend on the results of Environmental and Social Due Diligence, which is being undertaken by an independent consultant. An initial review undertaken by the bank has confirmed that the project is located away from residential areas as well as sensitive habitats, it added.

Day-ahead trade on the Czech Power Exchange, January 24 – February 23, 2012



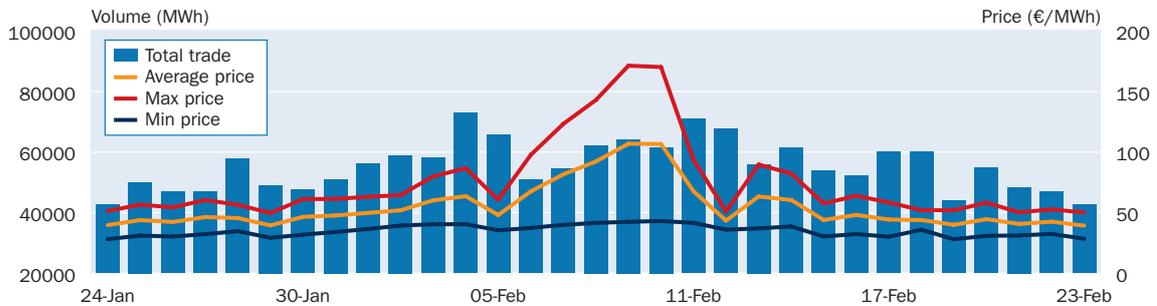
Source: OTE

Romanian day-ahead market, January 24 – February 23, 2012



Source: OPCOM

Day-ahead trade on the Polish Power Exchange, January 24 – February 23, 2012



Source: PolPX

Western Russian wholesale power market, January 24 – February 23, 2012



Source: Trading System Administrator

## OIL & GAS NEWS

### Albania

## Shell buys into Petromanias blocks

Royal Dutch Shell has agreed to take a 50% stake in two onshore oil exploration blocks in Albania held by Canada's Petromanias Energy. The farm-in agreement announced February 9 by the Canadian explorer highlights the growing interest in Albania's hydrocarbon resources.

Shell will farm into blocks 2 and 3, which cover some 852,000 acres, in exchange for payments and carried costs up to \$50.3 million. Petromanias will continue to act as operator of the blocks.

Under the agreement, Shell will carry Petromanias on a work program of up to \$22.5 million in the first exploration period and subject to entering into the second exploration period, a second exploration well. In addition, Shell will pay a cash consideration for a total amount of \$16.3 million, of which \$11 million is refundable to Shell should Petromanias secure a partner for the other Petromanias blocks during the current exploration period.

"[Shell] brings exceptional technical capabilities and substantial resources to our new relationship," Petromanias CEO Glenn McNamara said in a statement. "We believe that partnering with a global leader like Shell provides a validation of the potential of our Albanian assets and the exploration work we have completed to date," he said.

The company said its 2012 drilling program in Albania remains unchanged and is moving ahead as planned. "We expect the addition of a further seismic program to accelerate the exploration and development of the blocks," he said. Last March, Petromanias announced the completion of 2D seismic operations on blocks 2 and 3.

Petromanias holds three Production Sharing Contracts with the Albanian government. Under these contracts, it has a 100% working interest in blocks A, B, D, and E and a 50% interest in blocks 2 and 3 that comprise more than 1.4 million gross acres across Albania's Berati thrust belt. In November, Petromanias said its blocks hold "significant oil resource potential". It acquired the assets from DWM Petroleum, a wholly-owned subsidiary of Manas Petroleum Corporation, in February 2010. Shell previously operated Block B.

In January, San Leon Energy revealed that it had received significant interest from "large E&P companies" to buy into its 100%-owned Durresi exploration license offshore Albania (*EIEE 232/23*).

### Baltics

## Study supports Baltics gas link

A natural gas interconnector between Poland and Lithuania, which would integrate Baltic States into the EU gas market and provide access to Poland's future LNG terminal in Swinoujscie, would have significant

benefits for the regional gas markets in terms of security of supply and market opportunities, according to a Business Case Analysis (BCA) of the project published February 10.

According to the BCA, carried out by Ernst & Young Business Advisory on behalf of Lietuvos Dujos and Gaz-System, the gas transmission operators in Lithuania and Poland, respectively, the Gas Interconnection Poland-Lithuania (GIPL), would cost an estimated €471 million (\$624 million), 73% of which would be borne by Poland due to the longer length of the pipeline on the Polish side of the border.

The proposed 562 km-long, 700 mm diameter pipeline would in a first stage would the capacity to transport 2.3 Billion cubic metres of gas per annum to the Baltic States, with the possibility of raising capacity to 4.5 Bcm/year at an additional cost of €66 million, Gaz-System and Lietuvos Dujos said in statements. The recommended route would be from the Rembelszczynza gas compressor station north of the Polish capital, Warsaw, to the Jauniunai gas compressor station near the Lithuanian capital, Vilnius.

Viktoras Valentukevicius, the general manager of Lietuvos Dujos, said in a statement that the gas interconnection between Poland and Lithuania is not just about bilateral infrastructure but is of "regional importance" and that he hoped that "other stakeholders in the Baltic countries will take in this part as well". Jan Chadam, president of Gaz-System, added that he believed the EU would support this joint project to integrate the gas network in this part of Europe. "For the Baltic countries the Poland-Lithuania pipeline is a strategic element of the gas infrastructure and provides access to the global gas market, among others, by the LNG terminal in Swinoujscie," he said.

The companies said that their respect management boards had approved the preparation of a feasibility study, and that a tender would be announced "in the coming weeks". The feasibility study should be completed in the fourth quarter of 2012, after which comprehensive market screening should be performed followed by preparatory works for applying for necessary EU support for the construction of the interconnector project, they said. The Business Case Analysis and feasibility study are being co-financed by the European Commission providing financial aid within the scope of the Trans-European Networks-Energy (TEN-E) program.

### Europe

## South Stream FID in November

Gazprom said February 15 it expects to take a final investment decision on the construction of the South Stream gas pipeline to carry natural gas across the Black Sea to Europe in November.

Construction work is to start in December, Gazprom reiterated following a company meeting on the pace of work on the project. "We have entered into the stage of actual construction of South Stream. I can say without

exaggeration that Gazprom is working on the project 24 hours a day," CEO Alexei Miller said in a statement.

"The abnormally cold winter that sparked a sharp increase in demand for Russian gas in Europe is further confirmation that South Stream needs to be built," he said, adding that Europe needs new corridors for direct supply of Russian gas that would avoid transit countries.

Last December Prime Minister Vladimir Putin instructed Gazprom to start construction work in 2012, ahead of the previously set target of 2013. Commercial shipments are scheduled to start in late 2015.

The South Stream gas pipeline is to be built across the Black Sea from Russia to Bulgaria with a capacity of up to 63 billion cu m/year. The initial subsea section would consist of just two lines, each capable of carrying some 16 Bcm/year, an official with South Stream, the operating company for the subsea section, said.

Gazprom owns a 50% stake in the subsea section of the pipeline, while Italy's Eni holds 20%, and France's EDF and Germany's Wintershall each own 15%. Gazprom has also set up national joint ventures with companies from Austria, Bulgaria, Croatia, Greece, Hungary, Serbia and Slovenia to manage the onshore section of the project. In early February, Gazprom said Montenegro is also considering linking up to South Stream.

## Hungary

### Firtash regains control of Emfesz

Cyprus-based Mabofi, a Group DF company controlled by Ukraine's Dmytro Firtash, has regained control of Hungarian gas trader Emfesz after Hungary's Supreme Court ruled February 13 that the company is the sole legal owner of what was once the country's major independent gas distributor.

The decision, announced by Firtash's Group DF, upheld the decision of the Court of Appeal confirming that former Emfesz director Istvan Goczi did not have the authorization to sell Mabofi's 100% share in Emfesz to Swiss-registered Rosgas. Goczi purported to sell Emfesz to Rosgas in May 2009 for \$1 and as a result triggered a long legal battle during which Emfesz lost its gas licenses. The latter's ownership still remains unclear to this day.

"The Supreme Court judgment is the highest and final confirmation that Emfesz was in effect stolen from us," commented Robert Shetler-Jones, CEO of Group DF. "This is not the end of the matter. We will now start the process to recover the assets of Emfesz that have been stripped out of the company over the past three years and to hold to account all those responsible for what must be one of the largest frauds in Hungarian corporate history," he said in a company statement issued February 14.

In the years leading to 2009, Firtash established himself as a major player in the supply of Central Asian gas to Ukraine and onwards to Central Europe. On the back of this he set up Emfesz, which gained a large share of Hungary's gas market, including hundreds of

thousands of households. However his gas business collapsed in early 2009, when Swiss-registered RosUkrEnergo, which he jointly owned with Gazprom, lost its role as an intermediary gas supplier to Ukraine, after the then Prime Minister of Ukraine Yulia Tymoshenko insisted on direct supply agreements between Gazprom and Ukraine's state gas company Naftogaz.

## Poland

### PGNiG files suit against Gazprom

Poland's dominant natural gas supplier, PGNiG, said February 21 it had filed a suit against Gazprom and Gazprom Export at the Arbitration Court in Stockholm in its bid to index at least part of its supply from Russia under its long-term contract to spot prices.

"The subject of the suit is an amendment of the price terms of the long-term gas supply contract of September 25, 1996, executed by PGNiG and Gazprom and Gazprom Export," PGNiG said in a brief statement without giving further details. A Gazprom spokesman would only say that PGNiG was within its right to ask for arbitration.

In November PGNiG said it was initiating proceedings at the court after price negotiations failed. PGNiG deputy chief executive, Radoslaw Dudzinski, told Platts in December that the company was seeking to index more than half of its contracted volumes to spot prices, which would result in a double digit reduction in the amount it pays for Russian gas.

Like most European gas companies, PGNiG buys supplies from Gazprom under a long-term contract with prices indexed to oil. While European gas prices have remained relatively flat over the last two years, oil prices are now at eight-month highs causing huge losses on oil-linked contracts for gas importers. The only upside for PGNiG has been the 10% strengthening of the zloty against the dollar this year.

Poland consumes between 13.5 and 14 billion cubic meters annually, of which 9.77 Bcm were contracted by PGNiG from Gazprom in 2011. The remainder comes from domestic production and Germany.

Dudzinski said he expected a ruling within five-six months in the best case scenario and by the end of 2012 in the worst case.

### Hydrocarbons tax due in 2015

Poland plans to introduce a new tax on hydrocarbon production in 2015 when commercial extraction of its shale gas reserves is expected to start, Minister of Finance, Jacek Rostowski, said February 22.

"It's about creating a mechanism which, on one side secures for Poles the proper revenues from deposits which belong to the Polish nation, but on the other hand, does not discourage investors from investing in production in these deposits," Rostowski said during a news conference. The minister said it was too early to say what level of income the tax would yield as it

depends on the geological conditions which are still unknown. He said the ministry was working on the tax parameters but they would be corrected by the environment ministry.

At the same conference, deputy finance minister, Maciej Grabowski, said the government's aim in drafting a hydrocarbons tax law was to create a "stable and predictable environment" for investors. "We're not looking at this law taking effect in six months or a year. We're saying rather it will encompass commercial production from 2015," he said.

Grabowski said earlier this month that Poland would present its proposals for a new draft hydrocarbons tax law in the second quarter of this year. "The first assumptions of the draft hydrocarbons tax law will appear at the beginning of the second quarter of this year," Grabowski told the state news agency, PAP, on February 14.

In the Polish legislative process, the government outlines the main concepts of a draft law, known as the assumptions, before it writes a detailed version of the draft legislation. Draft legislation then goes through public consultation before being sent to parliament.

The new law will set the level of tax on all hydrocarbon production in the country, including shale gas, of which Poland has the largest estimated recoverable reserves in Europe at 5.3 trillion cubic meters, according to the US Energy Information Agency.

In January Grabowski said that the combined rate of a new hydrocarbons production tax plus corporate tax would be comparable to the current mining tax, which stands at around 50% of profits. Currently hydrocarbons producers in Poland enjoy a benign fiscal regime and pay charges of Zloty 5.5 (\$1.74) per million cubic meters for high methane gas and Zloty 35 (\$11.06) per mt of crude oil.

## PKN plays down shale gas talk

Poland's shale gas reserves could be much lower than current estimates, the head of PKN Orlen's upstream business said February 15.

Wieslaw Prugar, the CEO of Orlen Upstream, told Polish radio he believed a new estimate of the country's recoverable shale gas reserves would show they were "several times less" than the 5.3 trillion cubic meters estimated by the US Energy Information Administration (EIA). The Polish Geological Institute, in cooperation with the US Geological Survey, will complete a new estimate based on the test drilling results so far this month.

The EIA estimate was based on data before any test wells were drilled in Poland, and since then companies have reported the results of exploration work with varying degrees of success. Most of the test shale gas wells have so far been drilled in Poland's onshore Baltic Basin in Pomerania, northern Poland.

But Prugar said PKN was happy with the results of its own first test drills and planned to drill and hydraulically fracture at least one horizontal well this summer. PKN has a total of six shale gas exploration concessions in the Lublin Basin in the southeast of the country, which contain Silurian and

Ordovician shales. It also has two unconventional gas concessions in Lodz province in central Poland.

PKN has been in discussions with Canada's Encana about teaming up to share costs in its shale gas exploration program, but PKN's largest shareholder, the state Treasury, has reportedly asked Polish state-controlled companies to refrain from making partnership deals with foreign companies for now. Prugar said PKN was not considering exploration in new concessions by itself and a partnership was possible.

Prugar also said shale gas production of between 1 and 3 billion cubic meters per year could happen by 2018-2020. "In the narrow area where exploration is very advanced, production and the first sales will be possible in 2014. But on a wider scale, production will be possible in 2018, maybe in 2020, on a scale of 1, maybe 3 billion cubic meters," he said. Poland's gas monopoly, PGNiG, has said test production could start in 2014.

Poland has issued more than 70 shale gas exploration licenses in the last four years to companies including ExxonMobil, Chevron and ConocoPhillips. Production could more than cover the country's current annual consumption of 14 Bcm and transform Poland from a country that now relies on Russian supplies for two-thirds of its consumption into a gas exporter.

## San Leon finds shale gas zones

UK-listed explorer San Leon Energy said February 14 it has identified four potential zones for shale gas production on its Gora license area in Poland following the completion of its Siciny-2 well.

"We are encouraged by the initial results of the Siciny-2 well showing four potential zones for unconventional gas production, including a newly identified interval," San Leon chairman Oisin Fanning said. "In total we encountered more than 500 meters of potential reservoir for further analysis and possible testing. The complex nature of the Carboniferous source rock, including natural fracturing, shows real promise for gas production," Fanning added.

"The successful drilling and completion of the Siciny-2 well is another milestone in proving our operating capabilities and the potential of our diverse exploration portfolio," he said.

San Leon said more than 265 meters of continuous core were collected across three prospective intervals identified in the previously drilled Siciny-1 well. "A previously unseen fourth potential Carboniferous shale section and a fractured tight gas sandstone were also encountered below 3,200 meters in the well," it said. Tight rock analysis will now be performed on the core to evaluate the potential for commercial shale gas and tight gas.

## TSO receives pipeline permit

Polish natural gas transmission system operator, Gaz-System, has received a construction permit for an 80.4 km stretch of pipeline between Szczecin and Gorzow Wielkopolski in northwest Poland.

The permit, which also covers a gas compressor station in Goleniow, northwest of the city of Szczecin, was awarded by Western Pomerania's provincial leader, Marcin Zydorowicz, the TSO said February 15.

The investment is the first stage of a two-part Zloty 647 million (\$202 million) project to build an 188 km-long pipeline between Szczecin and Lwowek in Lower Silesia, southwest Poland. The pipeline is scheduled to be completed in February 2014.

Gaz-System intends to build more than 1,000 km of new pipeline by 2014, chiefly in northwest Poland, to allow it to distribute gas from the new LNG terminal. The 5 billion cubic meter/year terminal in the port of Swinoujscie, near Szczecin, is scheduled to be complete in time to take the first shipments of LNG from Qatar in July 2014.

## TSO signs pipe supply deal

Polish natural gas transmission system operator, Gaz-System, said February 17 it had signed agreements worth €22.2 million (\$29.2 million) with Turkey's Borusan Mannesmann for the supply of 700mm steel pipe for its pipeline between Szczecin and Gdansk in north Poland.

Gaz-System said in a statement the pipe would be used in three stretches of the pipeline between Karlino-Koszalin (stage II), Koszalin-Slupsk (stage III) and Slupsk-Wiczlino (stage IV).

## Romania

### Transgaz posts 2011 net profit

Romania's state-owned gas pipeline operator Transgaz reported a preliminary net profit in 2011 of RON 392 million (€92.4 million, \$118 million), up 4.2% year-on-year, and above market consensus, according to unconsolidated financial results released February 15.

Turnover rose 2.7% to RON 1.3 billion (€306 million), while total revenues rose 6.51% year-on-year to RON 1.4 billion (€330 million), mainly due to a 4% increase to 136 TWh in gas transport volumes. However, total expenses also rose 7.19% to some €233 million.

For the fourth quarter, Transgaz reported a net profit of RON 108.1 million, up 29.3% year-on-year, while turnover rose 2.6% to RON 408.7 million. The volume of gas transported by Transgaz rose by just 1% in the quarter to 42 TWh, with the mild winter to December 2011 offsetting the rise in gas consumption from last year's severe drought, which forced a switch in electricity production from hydropower to coal and gas-fired generation.

The main shareholders in Transgaz are the Ministry of Economy, which holds 73.5%, and Fondul Proprietatea, which owns 14.98%. The government is to sell a 15% stake in Transgaz in a secondary public offering on the Bucharest Stock Exchange later this year. Raiffeisen Capital & Investment is the lead manager for the SPO.

## Russia

### Bashneft, Lukoil win Nenets blocks

Lukoil and Bashneft, respectively Russia's second and eight largest oil producers, won auctions held February 21 by Rosnedra for three blocks in Russia's Nenets Autonomous Okrug.

Bashneft acquired two licence areas – Yangareisky and Sabrigansky – in the northern Nenets region, the regional Department of Natural Resources said in a statement. The Yangareisky field, which is the largest of the three fields sold, has a D1+D2 resource base of up to 26.2 million mt. Total reserves from both fields are estimated to reach 28.2 million mt, about 200 million barrels of oil representing around 6% of Bashneft's total reserves.

The acquired blocks are located adjacent to Bashneft's Treb and Titov fields, thus providing room for potential synergies through joint use of infrastructure, according to analysts at Alfa Bank.

Lukoil won the bid for the Verkhneyangareisky block, which has D1+D2 resources in place that are estimated at 11.3 million mt, representing only 0.3% of the company's total reserves in place.

Analysts at Renaissance Capital said it considered that the prices paid by the two oil companies were "too high".

Bashneft paid Rb4.5 billion (\$151 million), – Rb2.7 billion and Rb1.8 billion for Yangareisky and Sabrigansky, respectively, – implying a price of \$0.73 per barrel of reserve and way above the starting prices set by Rosnedra of Rb29 million and Rb3 million. Lukoil will, meanwhile, make a one-time payment of Rb1.8 billion for the field, which was initially priced at Rb15 million by Rosnedra, implying a price of \$0.74 per bbl. "While there will undoubtedly be some synergies with the Trebs and Titov oil fields, the price of about \$1/bl of resources (not even reserves) seems too high to us," Mikhail Rotaev of Renaissance Capital commented February 22.

### Rising output and sales for Itera

Russian independent gas producer Itera reported February 16 a 3.7% year-on-year increase in its 2011 gas output to 12.6 billion cubic meters, while gas sales increased 13% on the year to 23.4 Bcm.

Of total production, the Purgaz joint venture between Itera (49%) and Russian gas giant Gazprom (51%) contributed 15.2 Bcm of gas. In 2011, Purgaz reached its production peak, the statement said.

Itera's other major producing asset Sibneftegaz, in which Itera owns 49% and Novatek controls the remaining 51%, increased its output to 10.6 Bcm, the statement said. The timeframe for Sibneftegaz reaching peak production will depend on demand for gas, it said.

In line with its development strategy, the gas supplies were mainly sold to consumers in Russia's Sverdlovsk region, the company said.

## Serbia

## Srbijagas upbeat on South Stream

Construction of the South Stream pipeline section in Serbia could begin later this year, Dusan Bajatovic, the director general of Serbia's natural gas supplier, Srbijagas, said February 15 during a press conference reported by Serbia's state news agency *Tanjug*.

"The route of the pipeline has been defined. You have seen Turkey giving its approval, Bulgaria proclaimed that South Stream is a project of national significance and Hungary is expected to do the same. Concretely, the South Stream project for Serbia will be completely ready by the end of June," said Bajatovic. He added that construction of the pipeline in Serbia could start after the tender procedure is completed in November or December 2012.

The head of Srbijagas said that he was confident that Hungary would soon join the project, while Slovenia has already approved its participation in the pipeline that will bring Russian gas to northern Italy. "This means that a new gas trading centre could also be opened, in addition to Baumgarten [natural gas hub]" he explained.

## Turkey

## Cutting gas usage to take years

Turkish plans to reduce the percentage of power generated from gas to 30% from the current 50% could take as long as 20 years, Mustafa Karahan, head of Turkey's Electricity Traders Association (ETA), told Platts February 15.

It follows an announcement earlier this month by the country's energy minister Taner Yildiz that as a result of gas shortages caused by a combination of Turkey's coldest winter in 42 years and unrelated cuts in supply from Iran and Azerbaijan, the government intended to promote indigenous resources for power generation in order to reduce the share of gas-fired electricity production from imported gas from 50% to 30% by 2023.

Karahan said the large number of gas-fired power plants already under development meant that any change in direction would take time to implement. "Acting now will help the situation in about 20 years, but the gas burn cannot be reduced in the short term because of the number of gas power plant projects already ongoing," he said.

In addition to prioritizing the development of new plant using fuels other than gas, Karahan also said older gas-fired power plant with low efficiency needed to be taken out of service. A lot of plants currently generating have an efficiency of only around 40%, he said.

Karahan also pointed to serious structural problems in the Turkish power sector as further worsening an already difficult situation, when gas and power demand peak during sudden cold snaps.

He underlined the slow pace of development of residential gas distribution in eastern provinces and the

region's dependence on electrical heating during cold spells. Normally, he said, demand would be tempered by the comparatively high cost of electricity, but in many parts of eastern and southeastern Turkey electricity theft is rife with some areas reporting the theft of as much as 80% of all power distributed. "This is essentially a political problem," he said.

Currently the cost of losses incurred by distribution companies in these areas is subsidized by a levy on the retail price of electricity in Turkey's more affluent western provinces under a formula devised prior to the start of the privatization of Turkey's 21 regional power distributors of which 12 are now in private hands.

## Trio apply for exploration permits

Three companies have applied to Turkey's General Directorate of Petroleum Affairs for licenses to explore for hydrocarbons in southeast Turkey, according to announcements published February 21 in the country's Official Gazette.

The three applicants are Aladdin Middle East and Transatlantic Exploration Mediterranean, which have applied to prospect block XI in Diyarbakir province, and Tiway Turkey, which has applied for block X in Siirt province.

US-owned Aladdin Middle East has been prospecting in Turkey since the early 1960s and is currently the country's largest foreign concession operator, holding over 1,800,000 acres of onshore exploration licenses in southeast Turkey and the European province of Thrace.

Transatlantic already holds licenses for eight blocks in Turkey totaling 3.5 million acres including the Selmo oil field, which has been producing since the 1960s and the rights to which Transatlantic purchased in 2009.

Tiway purchased Toreador's assets in Turkey in 2009, including a stake in the already producing Akcakoca offshore gas field and the Bakuk gas field in southeast Turkey, which began producing in 2011.

## Ukraine

## Ukraine accused of gas theft

Gazprom has accused Ukraine of illegally taking Russian transit gas destined for Europe earlier this month, and said its western neighbor would have "zero importance" as a transit state once its two bypass pipelines – Nord Stream and South Stream – are fully operational.

Gazprom CEO Alexei Miller said February 22 that during the February cold snap, Ukraine took gas from the transit system, resulting in shortages in a number of European countries. "European customers increased requests for Russian gas and Gazprom did everything needed [to satisfy the demand] but significant volumes of gas did not reach Europe," Miller said at a meeting with President Dmitry Medvedev, according to a transcript published on the presidential website.

The increased volumes remained in Ukraine, Miller said. "On some days, Ukraine took up to 40 million cubic

meters [per day]. This has resulted in financial and reputational damage to Gazprom," he said. Medvedev has instructed Gazprom to settle the issue "through corporate procedures and legal mechanisms," Miller said.

Ukraine's state-owned Naftogaz Ukrayiny denied Miller's allegations however. "Starting from the beginning of 2012, Naftogaz has not taken a single cubic meter of gas from the transit volumes Gazprom has been sending to Europe," the company said in a statement. The existing gas supply contract between Moscow and Kiev does not specify daily supplies of Russian gas to Ukraine but rather stipulates quarterly volumes, it said.

In February, when Gazprom's European clients increased their gas volume requests, Naftogaz notified the Russian company about the possibility of using gas from Ukraine's underground gas storage facilities to meet additional European demand, it said. "If Russia had turned to us, we could have helped European customers [to overcome] the critical fall in gas supplies," Naftogaz deputy chairman Vadim Chuprun said in the statement.

In early February, Ukraine said it was satisfying its demand for gas by using volumes from its underground gas storage facilities to allow Gazprom to send more to the rest of Europe during the cold weather.

But Gazprom suggested Ukraine had taken more Russian transit gas than stipulated by the contract between the two sides. At least eight EU countries, including Italy, France, Germany and Austria, said at the time they had experienced a cut in Russian gas supplies.

The ongoing standoff between Moscow and Kiev over gas also prompted Gazprom February 22 to declare Ukraine would not be needed as a transit country once the Nord Stream and South Stream pipelines were fully operational. "Once South Stream starts operations at full capacity and the additional new lines of Nord Stream are launched, and [given] Gazprom's ownership of Belarus' and Black Sea gas transit routes, Ukraine will have zero importance as a transit state for Russian gas exports," spokesman Sergei Kupriyanov said in a statement.

Russia currently moves about 110 billion cubic meters/year of its gas to Europe via Ukraine's gas

transit system. Nord Stream launched last year with a single line capacity of 27.5 Bcm/year though a second line to bring total capacity to 55 Bcm/year is under construction and set for launch in the fourth quarter of 2012. Gazprom has also talked of the possibility of a third and fourth Nord Stream parallel line, which would bring the capacity to the same as that in Ukraine. In addition, Gazprom plans to start building the 63 Bcm/year South Stream pipeline to southeast Europe in December this year.

## KOV secures production license

Kulczyk Oil Ventures, an international upstream oil and gas company, reported February 13 that its five-year Olgovskoye exploration license has been converted into a 20-year production license by Ukraine's Ministry of Fuel and Energy.

As a result, production from the Olgovskoye field is no longer limited, KOV said in a statement. Under the terms of an exploration license no field is allowed to produce more than 10% of volumes in place. The Olgovskoye license is operated by KUB-Gas LLC (KUB-Gas), in which KOV has a 70% interest.

The Olgovskoye license is presently the most productive of the five licenses held by KUB-Gas in the Lugansk Oblast of southeast Ukraine, with gross production at present of 12 million cubic feet per day (MMcf/d), (8.4 MMcf/d net to KOV), representing about 65% of total production from all of Kulczyk's licenses.

Since KOV acquired its ownership interest in KUB-Gas in June 2010 five new gas wells have been drilled on the Olgovskoye license and one additional well at Olgovskoye-6, which was drilled prior to June 2010, was fracture stimulated in the fourth quarter of 2011. The O-6 well was tied-in as a producing gas well in early February 2012 at a rate of 1.5 MMcf/d.

The main shareholder of Kulczyk Oil Ventures is Kulczyk Investments, an investment house founded by Polish businessman, Jan Kulczyk, which owns approximately 44% of the company's issued common shares. Warsaw-listed KOV also holds exploration licenses in Brunei and Syria.

### East European currencies, February 22, 2012

Country	Currency	£	\$	Eur	Country	Currency	£	\$	Eur
Albania	Lek	165.20	105.45	139.63	Macedonia	Denar	72.83	46.49	61.56
Belarus	Rouble	12799.50	8170.00	10817.90	Moldova	Leu	18.55	11.84	15.67
Bosnia Herzegovina	Marka	2.31	1.48	1.96	Poland	Zloty	4.96	3.17	4.19
Bulgaria	Lev	2.31	1.48	1.96	Romania	New Leu	5.16	3.29	4.36
Croatia	Kuna	8.98	5.73	7.59	Russia	Rouble	46.52	29.70	39.32
Czech Rep.	Koruna	29.79	19.01	25.18	Serbia	Dinar	129.22	82.48	109.21
Estonia	Kroon	1.18	0.76	1.00	Slovakia	Euro	1.18	0.76	1.00
Hungary	Forint	341.83	218.19	288.91	Slovenia	Euro	1.18	0.76	1.00
Latvia	Lats	0.83	0.53	0.70	Turkey	New Lira	2.75	1.76	2.33
Lithuania	Litas	4.09	2.61	3.45	Ukraine	Hryvna	12.55	8.01	10.61

Source: Financial Times

The background of the top section features a photograph of an industrial power plant with several tall smokestacks emitting white plumes of smoke. The sky is a pale, hazy blue. To the right of the main title, there is a blue waveform graphic, similar to an audio signal, with a central peak and smaller side peaks.

# UDI WORLD ELECTRIC POWER PLANTS DATABASE

## NEW 2012 EDITION

UDI World Electric Power Plants Database (WEPP) is a global inventory of electric power generating units. It contains design data for plants of all sizes and technologies operated by regulated utilities, private power companies, and industrial autoproducers (captive power).

## UNIQUE DATABASE IS THE LARGEST INFORMATION RESOURCE AVAILABLE

- Design information for more than 167,000 units at nearly 75,000 plant sites in 230+ countries — every country is represented
- Coverage of installed and projected steam and gas turbines, combined-cycle plants, IC engines, hydro units, wind turbines, and renewable energy units
- Details on plant operators, geographic location, capacity (MW), age, technology, fuels, and boiler, turbine, and generator manufacturers, emissions control equipment, and more

## PURCHASE OPTIONS

All files can be opened directly in Excel or imported into Access or other database management software. Purchase the entire **World Electric Power Plants Database** or just select regions.

- All Units (CD-ROM)
- Asia (CD-ROM) — 44,000+ units
- Europe (CD-ROM) — 48,000+ units
- North America (CD-ROM) — 38,000+ units
- All Other (CD-ROM) — 34,000+ units
- New Global Units (CD-ROM)
  - **new data subset** — this file pulls together all new and planned units of all technologies and fuels with in-service dates of 2010 and later at more than 4,000 plants worldwide

FOR MORE INFORMATION  
OR TO ORDER, VISIT  
[WWW.UDIDATA.COM](http://WWW.UDIDATA.COM)  
OR CALL YOUR NEAREST  
PLATTS OFFICE:

**North America**  
1-800-PLATTS8 (toll-free)

**Europe/Middle East/Africa**  
+44-20-7176-6111

**Latin America**  
+54-11-4804-1890

**Asia-Pacific**  
+65-6530-6430

For more information on Platts  
UDI databases and directories visit  
[WWW.UDIDATA.COM](http://WWW.UDIDATA.COM)