

# Ust-Luga integrated gas processing, petrochemical cluster is inaugurated by Gazprom

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## Abstract

PJSC Gazprom and its affiliates have started construction on a previously announced combined gas processing, liquefaction, and chemical complex at the Gulf of Finland near the seaport of Ust-Luga, Leningrad Oblast, Russia (OGJ Online, June 10, 2020).

Construction activities on the proposed complex for processing ethane-containing gas (CPECG) began on May 21 and will cover works on the CPECG's two major enterprises, including RusKhimAlyans—a 50-50 special-purpose venture of Gazprom and RusGazDobycha—integrated natural gas processing and liquefaction complex (GPC of the CPECG), as well as RusGazDobycha subsidiary Baltic Chemical Complex LLC's (BCC) planned ethane-cracking complex, or gas chemical complex (GCC of the CPECG), Gazprom said.

RusKhimAlyans GPC, which will have 13 million-tonnes/year liquefaction capacity, initially will receive 45 billion cu m/year (bcm/y) of wet natural gas feedstock from Gazprom's Achimov and Valanginian deposits in the Nadym-Pur-Taz region of the Yamal Peninsula, and later, from specially allocated ethane gas pipelines delivering production from the region's yet-to-be-developed Tambeyskoye field, the peninsula's richest, according to Gazprom.

The GPC will produce as much as 4 million tpy of ethane, and more than 2.2 million tpy of LPG, with ethane from the complex to feed nearby BCC's proposed \$13-billion ethane cracking project that—once in operation—will produce more than 3 million tpy of polymers (OGJ Online, Nov. 9, 2020). About 18 bcm/y of gas remaining after processing at GPC—including ethane extraction, LPG, and 13 million tpy of LNG—will be exported from the site via Gazprom's gas transmission lines (OGJ Online, Mar. 29, 2021).

## Field development plan

Alongside the CPECG May groundbreaking, Gazprom and RusGazDobycha also confirmed signing of a master agreement under which the companies plan to jointly develop Tambeyskoye field, which lies within three Gazprom-owned licensed blocks—Severo-Tambeysky, Zapadno-Tambeysky, and Tasiysky—in the Yamal Peninsula.

As part of the agreement, Gazprom subsidiary Gazprom Nedra and RusGazDobycha will form Tambey Gazdobycha, a 50-50 joint venture that will hold subsurface-use licenses for the area on which Tambeyskoye lies and will be responsible for the field's predevelopment and development, Gazprom said.

Containing gas reserves of more than 5.2 trillion cu m and 380 million tonnes of oil-gas condensate, Tambeyskoye is scheduled to begin producing gas in 2026, according to Gazprom.

## Linde technology deal

Gazprom also said GPC operator RusKhimAlyans and Linde PLC have entered an agreement under which the companies will cooperate on creating and implementing jointly developed technologies for advanced natural gas processing and liquefaction—including those involving synthetic hydrocarbons production—as well as technology for ethane cracking.

The strategic cooperation agreement also will develop measures for localizing manufacturing of equipment and materials used to build gas liquefaction and processing installations, Gazprom said.

RusKhimAlyans's latest agreement with Linde follows the operator's late-March 2021 preliminary contract award to Linde Engineering for delivery of engineering, procurement, and site services (EPSS)—including equipment supply and maintenance—on gas processing and off-site installations of the CPECG's GPC.

Royal Dutch Shell PLC reported fourth-quarter earnings on a current cost of supplies basis, excluding identified items, of \$2.9 billion, a decrease from the \$4.8 billion reported in the year's third quarter and 49% lower than the \$5.7 billion recorded in fourth-quarter 2018.

The decrease, excluding identified items at \$2.9 billion, reflected lower realized oil, gas, and LNG prices, weaker realized refining and chemicals margins, as well as negative movements in deferred tax positions compared with the fourth quarter 2018. This was partly offset by stronger contributions from LNG trading and optimization. Following its annual balance sheet review, identified items reflect the impact from impairments in the quarter of \$2.2 billion, mainly associated with US natural gas assets.

Integrated gas earnings were \$2 billion, down \$400 million, reflecting lower realized LNG, oil and gas prices, higher depreciation with several projects ramping-up, partly offset by stronger contributions from LNG, gas and power trading and optimization.

In upstream, earnings were some \$800 million, reflecting deferred tax charges, higher charges for provisions related to restoration and decommissioning obligations, lower oil and gas prices, and increased well write-offs.

Cash flow from operations, excluding working capital movements, was \$12.3 billion, some \$600 million lower than fourth-quarter 2018. In the integrated gas business, cash flow from operations in this year's fourth quarter was \$3.5 billion, some \$2.3 billion lower than the year-ago quarter. In the upstream segment, cash flow from operations was \$4.2 billion, around \$2.7 billion lower than in the same quarter a year ago. In the downstream business, cash flow from operations was \$2.3 billion, some \$6.5 billion lower than in fourth-quarter 2018.

### Valero Energy makes officer promotions

Lane Riggs has been promoted and elected president of Valero and will hold the title of president and chief operating officer, reflecting the expansion of his responsibilities to also include renewables and logistics operations.

Gary Simmons has been promoted and elected executive vice-president and chief commercial officer. Gary has lead Valero's commercial organization since 2014. He will continue in his new role with oversight of the company's crude supply and products trading, wholesale marketing, transportation, and international commercial operations groups.

Eric Fisher has been promoted and elected senior vice-president of wholesale marketing and international commercial operations.

Vitaly Markelov, deputy chairman of the Gazprom Management Committee, and Syed Ashfaquzzaman, corporate secretary and member of the board of Bangladesh's state oil firm Petrobangla, signed a 5-year Memorandum of Understanding Jan. 29 for strategic cooperation.

The MOU comes after a working meeting headed by Mrkelov Sheikh Hasina, Prime Minister of the People's Republic of Bangladesh. The parties discussed the prospects of cooperation in the energy sector.

Gazprom's interests in Bangladesh are represented by Gazprom EP International BV. The company's main partner in Bangladesh is Petrobangla.

In 2012 and 2015, Gazprom EP International and Petrobangla signed contracts to build exploratory and development wells at gas fields in Bangladesh. In 2017, a contract was signed to construct two prospecting and exploration wells on Bhola Island in the south of Bangladesh.

Since 2012, Gazprom EP International has designed and built 17 appraisal, exploration, and development wells at eight fields in Bangladesh. The total flow rate of these wells has reached 7 billion cu m/year of gas.

#### Exploration & Development—Quick Takes

Shell, Ecopetrol to develop gas province in Colombian Caribbean

Shell, through its subsidiary Shell EP Offshore Ventures Ltd., expects to drill an appraisal well in the deepwater Caribbean Sea offshore Colombia by the end of 2021 subject to government approval of an agreement to acquire a 50% stake in Fuerte Sur, Purple Angel,

and COL-5 blocks in Sinu basin from Ecopetrol SA. Shell will assume operatorship.

In 2017, Gorgon-1 and Purple Angel-1 confirmed the extension of the gas reservoir discovered with Kronos-1 in 2015 (OGJ Online, July 30, 2015) The Gorgon discovery proved gas presence on a structured located in the same geological trend of the Kronos field, in zones with depths of 3,675-4,415 m below average sea level. Gorgon-1 is part of the Purple Angel block, which borders Fuerte Sur blocks (where Kronos-1 was discovered).

The confirmation of gas fields in the area opens the possibility for Colombia to develop a gas production specialized "cluster," which would allow for sharing facilities and improving projects' profitability and efficiency, Ecopetrol said at the time.

An April 2019 regulatory filing showed that, by December 2018, Ecopetrol has increased its participation to 100% from 50% in Fuerte Sur and Purple Angel blocks after they were relinquished by Anadarko Petroleum Corp. Block Col-5, the National Hydrocarbon Agency (ANH) approved the conversion of a Technical Evaluation Agreement to an Exploration and Production Contract, where the company holds 100% interest.

Following the commercial agreement, which includes the financing of Ecopetrol's investments by Shell, the discoveries could be further developed if the activities provide positive results, expanding the country's gas supply in the medium term, potentially exceeding 3 tera cu ft, Ecopetrol said.

The agreement is subject to approval by the ANH and fulfillment of customary transaction conditions.

### Parex, Frontera evaluate options post Colombia discovery

Parex Resources Inc., Calgary, and Frontera Energy Corp., Toronto, will evaluate options to drill one or two additional delineation wells in the VIM-1 block in the Lower Magdalena Valley in Colombia following a recent discovery.

The La Belleza-1 exploration well, drilled to 11,680 ft TD, encountered 179 ft total MD (155 ft total vertical depth) of potential hydrocarbon bearing reservoir in the Cienaga De Oro formation, Frontera said in a release Feb. 6.

The well was tested under natural flowing conditions over a 328-hr period and produced 32,728 bbl of 43° API oil, 147 MMcf of natural gas and 3,996 bbl water. The average flow rate during the test was 2,395 b/d and 10.7 MMcf/d (4,272 boe/d combined) at an average water cut of 12%. The flow rate during the final 24-hr of the test was 2,696 b/d and 11.8 MMcf/d (4,766 boe/d combined) at an average watercut of 10%.

The initial shut-in wellhead pressure was 4,700 psi. Wellhead pressure during the test remained relatively flat at 3,700 psi. The producing rate was limited by the test facilities on location. Bottom hole flowing pressures remained relatively stable at about 6,000 psi indicating an average drawdown of 14%. The initial bottom hole pressure was 7,031 psi and the final extrapolated pressure after the 174-hr buildup was 7,011 psi. The well will be flow tested for one additional week followed by an extended 30-day pressure buildup period which will provide additional information on the final reservoir pressure.

Additional wells, to be drilled from the existing La Belleza well pad, are expected in this year's second half. The partners are also evaluating different options for gas commercialization and infrastructure requirements.

Parex Resources is operator of the block with 50% interest. Frontera holds the other 50%.

Also in the Lower Magdalena Valley, Frontera spud the Asai-1 exploration well in the Guama block where it is operator with 100% interest. The company is targeting oil, natural gas condensate, and natural gas in the Porquero formation at 12,000 ft. The well is expected to take 75 days to drill with results expected in May.

### GeoPark makes gas discovery in Chile

GeoPark Ltd., Santiago, reported a gas field discovery in the Fell Block in Chile's Tierra del Fuego region. Part of the Dicky geological structure in the block, Jauke Oeste field opens the potential for multiple development drilling opportunities, the company said (OGJ Online, Aug. 20, 2018).

The Jauke Oeste 1 exploration well was drilled to 9,596 ft TD. A production test, through different choke sizes, in the Tobifera formation resulted in an average production rate of 4.4 MMscfd of gas (729 boe/d) and 52 bo/d of condensate with a wellhead pressure of 3,141 psi. Additional production history is required to determine stabilized flow rates of the well and the extent of the reservoir, the company said.

Surface facilities are in place, the well is in production, and the gas and condensate are being sold to offtakers.

Jauke Oeste lies about 1 km north of Jauke gas field, which is currently producing 8.4 MMscfd from two wells (1,400 boe/d). Jauke and Jauke Oeste gas fields are part of the Dicky geological structure in the block, opening the potential for multiple development drilling opportunities, GeoPark said.

Additional exploration activities with a focus on oil prospects will be carried out in Chile in this year's first quarter. The company will spud the Leun 1 exploration well in the Flamenco Block (GeoPark operated, 100%) in February, to be followed by the Huillin 1 exploration well in the Isla Norte Block (GeoPark operated, 60%), and the Koo 1 exploration well in the Campanario Block (GeoPark operated, 50%).

GeoPark is operator of the Fell block with 100% interest.

Drilling & Production—Quick Takes

Badin IV South Block begins commercial production

Jura Energy Corp., Calgary, said commercial production from the Ayesha, Aminah, and Ayesha North leases in the Badin IV South Block in the Sindh Province of Pakistan has begun following successful testing and commissioning of production facilities.

Badin IV South Block lies in the Lower Indus basin or Badin sub-basin. The discovery well, Ayesha-1 drilled in early 2014, found commercial accumulation of gas and condensate in the Lower Goru 'A' and 'B' sands. The exploratory efforts during 2015 and early 2016 resulted in gas and condensate discoveries in the Lower Goru Upper Sands at Aminah-1 and Ayesha North-1 wells (OGJ Online, Mar. 7, 2016).