

## **Refinery news roundup: Low Dec maintenance in Europe, some reduced runs**

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In Europe, refinery maintenance has been drawing to a close around the Amsterdam-Rotterdam-Antwerp hub apart from Pernis, where the end of maintenance has been slightly delayed, according to traders.

Separately, a strike has affected the two refineries in Portugal, and the UK's Grangemouth has reduced runs following the Forties pipeline halt.

The two Czech refineries -- Kralupy and Litvinov -- have also reduced runs following a chemical incident.

-- Work at Shell's Pernis refinery in the Netherlands has been extended slightly beyond the originally scheduled. The plant had originally been due to restart in November.

-- Galp's Sines is set to undergo two maintenance halts this quarter and next, including work on the fluid catalytic cracker in Q4 and the hydrocracker in Q1. Meanwhile, Portuguese union members at Petrogal, the operator of the country's two refineries, Porto and Sines, were due to end a week-long strike Monday, related to pay and working hours.

-- Spain's Castellon is fully operational after concluding its restart from maintenance during the week of December 4. The restart was on schedule following the planned maintenance that started on October 16, a company official said.

-- Saras said in its third-quarter results it did not expect any significant maintenance at its Sarroch plant in the last three months of the year. In Q4, Saras had scheduled works on its alkylation and TAME units and its catalytic reforming units.

-- Turkey's Izmit had been undergoing planned maintenance until beginning of December, according to traders. Works involve the hydrocracker, sources said. That has led to an increase in diesel imports.

-- Turkey's Izmir refinery at Aliaga is undergoing maintenance work on one of the crude oil units.

-- The Grangemouth refinery in Scotland, UK, which relies heavily on North Sea's Forties crude, was running at "reduced rates" due to the shutdown of the Forties pipeline system, a spokesman from Ineos said Friday. "The refinery remains in operation. Rates have been reduced slightly but it continues to process the crude oil necessary to meet inland demand for fuels, to meet the needs of Scotland and Northern England," the spokesman said. Due to the shutdown of the key 600,000 b/d oil pipeline, the refinery, which is operated by Petroineos, a subsidiary of Ineos, has had to start sourcing alternative crudes.

-- Following an explosion and fire at the partial oxidation unit (POX) at the Chempark Zaluzi petrochemical site at Litvinov, crude oil processing at the Kralupy and Litvinov refineries in the Czech Republic has been reduced.

-- Repsol was restarting the crude distillation unit at Plant 1 at the Bilbao refinery in northern Spain last week following an unplanned shutdown on December 11. The company halted the unit following a crude leak that also ignited. It did not report any damage from the incident. -- The EST unit at Italy's Sannazzaro refinery, which had been offline since a fire in December 2016, was expected to restart at the end of 2018.

| <b>Refinery</b> | <b>Capacity<br/>b/d</b> | <b>Country</b> | <b>Owner</b> | <b>Unit</b>     | <b>Duration</b> |
|-----------------|-------------------------|----------------|--------------|-----------------|-----------------|
| Pernis          | 404,000                 | Netherlands    | Shell        | partial         | Oct-Dec         |
| Sines           | 220,000                 | Portugal       | Galp         | partial, strike | Q4'17;Q1'18     |
| Porto           | 110,000                 | Portugal       | Galp         | strike          | Dec             |
| Castellon       | 110,000                 | Spain          | BP           | full            | Restarted       |
| Sarroch         | 300,000                 | Italy          | Saras        | partial         | Q3-Q4           |
| Izmit           | 220,000                 | Turkey         | Tupras       | partial         | Nov-Dec         |
| Izmir           | 220,000                 | Turkey         | Tupras       | CDU             | Dec             |
| Sannazzaro      | 190,000                 | Italy          | Eni          | EST             | Until Q4 2018   |
| Grangemouth     | 200,000                 | UK             | Petroineos   | run cuts        | Dec             |
| Kralupy         | 66,000                  | Czech          | Unipetrol    | run cuts        | Dec             |
| Litvinov        | 108,000                 | Czech          | Unipetrol    | run cuts        | Dec             |
| Bilbao          | 220,000                 | Spain          | Repsol       | CDU 1           | Dec 11-14       |

#### **Future**

|            |         |             |           |      |            |
|------------|---------|-------------|-----------|------|------------|
| Taranto    | 120,000 | Italy       | Eni       | full | May 2018   |
| Kralupy    | 66,000  | Czech       | Unipetrol | full | 2018       |
| Stanlow    | 186.300 | UK          | Essar     | full | H1 2018    |
| Holborn    | 105,000 | Germany     | Tamoil    | full | Q3 2018    |
| Kalundborg | 108,000 | Denmark     | Statoil   | part | Q2,Q3 2018 |
| Milazzo    | 302,000 | Italy       | KPI/Eni   | full | 2019       |
| Brofjorden | 220,000 | Sweden      | Preem     | full | Q3 2019    |
| Zeeland    | 180,000 | Netherlands | Joint     | full | 2020       |

#### **Upgrades**

|           |         |             |            |              |            |
|-----------|---------|-------------|------------|--------------|------------|
| Antwerp   | 320,000 | Belgium     | ExxonMobil | coker        | Early 2018 |
| Rotterdam | 190,000 | Netherlands | ExxonMobil | hydrocracker | 2018       |
| Pernis    | 404,000 | Netherlands | Shell      | SDA          | 2018       |
| Gdansk    | 210,000 | Poland      | Lotos      | complex      | H1 2018    |
| Pancevo   | 98,000  | Serbia      | NIS        | coker        | 2019       |
| Castellon | 110,000 | Spain       | BP         | VDU          | 2018       |
| Rhineland | 340,000 | Germany     | Shell      | SDA          | NA         |
| Rijeka    | 90,000  | Croatia     | INA        | coker        | 2021       |
| Donges    | 219,000 | France      | Total      | upgrade      | NA         |

## Launches

|      |         |        |       |        |          |
|------|---------|--------|-------|--------|----------|
| Star | 214,000 | Turkey | STEAS | launch | Sep 2018 |
|------|---------|--------|-------|--------|----------|

### FUTURE

-- Italy's Taranto refinery is scheduled to go offline in May to allow for works to permit the plant to refine crude from the Tempa Rossa oil field in southern Basilicata, which is set to start production in 2018, a trade union source said.

-- The next major shutdown at Kralupy in the Czech Republic is planned for 2018.

-- The UK's Stanlow will increase capacity during maintenance earmarked for the first half of 2018. As part of an upgrade, the refinery will change the feedstock for its FCC to heavy residue from VGO and also increase the petrochemical yield by 10%.

-- Germany's Holborn refinery, near Hamburg, is planning its next major turnaround in the autumn of 2018. It carries out major works every five years.

-- Norway's Kalundborg plans partial maintenance in May and September 2018.

-- The next large-scale maintenance at Italy's Milazzo facility is planned for 2019.

-- The next major turnaround at Sweden's Lysekil will be in the autumn 2019.

-- The next major maintenance at the Netherlands' Zeeland will be in 2020.

### UPGRADES

-- ExxonMobil said it aimed to complete construction of the new delayed coker at Antwerp in early 2018 "and will subsequently commence with the start-up process". The unit was expected to be fully operational in the first half of 2018 as "the new coker unit will need to be connected to other units at the refinery and this can take several months". It previously aimed for a start-up towards the end of 2017.

-- Two refineries in Rotterdam -- ExxonMobil's and Shell's Pernis -- are working on upgrades.

-- Poland's Gdansk expects to complete its EFRA, a deep processing project including delayed coking/coker naphtha hydrotreating units, hydrogen generation unit and hydrowax vacuum distillation unit, in the first half of 2018. It commissioned a modernized HDS unit in the third quarter.

-- Gazprom Neft has started construction of a delayed coker at its Pancevo refinery, with a target date for completion of 2019. The delayed coker will have 2,000 mt/day capacity and will help increase the depth of processing to 99.2% and diesel production by more than 38%. The refinery will start producing coke, currently not produced in Serbia.

-- The Netherlands' Zeeland is starting works on an expansion of the hydrocracker, due for completion in 2020. The unit, which processes heavy vacuum gasoil into diesel and jet fuel, already has two reactors, and the addition of a third will increase its efficiency.

-- Shell is looking into building a solvent de-asphalter plant at Wesseling, at the Rhineland refinery, which will enable it to desulfurize and further process heavy residues into lighter products such as heating oil.

-- Spain's Castellon aims to launch the upgraded vacuum distillation unit around the middle of next year. The company has been using recent maintenance to upgrade the existing VDU.

-- Croatia's INA is building a delayed coker at Rijeka, due for completion in 2021.

-- Total is considering building intermediate feedstock desulfurization units and a hydrogen unit at France's Donges, but the investment depends upon rerouting the railroad track that currently crosses the refinery.

#### LAUNCHES

-- Turkey's Star will sign its first crude purchase contracts in January ahead of the first tanker delivery in June, general manager Mesut Ilter said. The first cargo will be a symbolic delivery of Azerbaijani crude, but the refinery will mainly process heavier crudes from other sources. The new refinery is configured to process crudes of specific gravity 28-36, which means the bulk of crude processed will be heavy crudes from Middle Eastern producers or Russia.