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The inclusion into the Forties system of Buzzard, one of the few recent large scale North Sea oil fields, is rocking international pricing mechanisms. Dated Brent, the international physical benchmark used for pricing most crudes traded in the international spot market and a fair chunk of barrels sold on a term contract basis as well, has recently seen an erosion of its differential against screen or forward paper. This is directly attributable to a decline in the quality of UK Forties, a crude oil blend deliverable into the 21-Day Brent--Forties-Oseberg (BFO) forward contract. The cheapest of these three crudes is used by pricing services to determine the price of dated Brent. Throughout February, Forties for the first time has consistently been the grade used as a proxy for dated Brent. Because Forties previously traded at a premium to Brent for most of the time, and Oseberg only erratically has been priced below either of the two other BFO grades, this was quite a shock to the system -- even though the Forties-Buzzard link had been flagged well in advance. But there is a real possibility that dated Brent's already delicate pricing mechanism may be in for a few after-shocks.

The reason for dated Brent's nosedive is that Buzzard, one of the few recent large scale North Sea oil fields, came on stream earlier this year and was brought to market through the Forties Pipeline System (FPS). Buzzard, a 32-33° API and 1-1.4% Sulphur crude, was widely expected to lower the quality of the 44.6° - 0.20% sulfur Forties blend. However, neither Nexen, the operator of Buzzard, nor BP, the custodian of the Forties Pipeline System, have been able -- some unkind souls say they have been unwilling -- to profile just how the commingling of Buzzard would affect the future quality of Forties. A spokesman for Nexen, when queried on this matter, said that he wasn't sure that this would be the business of anybody else.

However, industry sources say that such information must be made available in order to allow the markets some security in predicting the quality and relative value of Forties Blend now and over a time horizon relevant not only to refiners' need for, say, two months worth of hand-to-mouth information, but also for the longer term needs of traders using Brent/BFO-related derivatives markets for hedging or speculative purposes. These markets rely on either physical Brent, forward BFO or Brent futures for settlement, and such derivative contracts based on Brent frequently have a longevity of five years or more.

A change in the Forties blend or even a more or less permanent switch to Forties as the principal underlying crude for dated Brent assessments would not in itself necessarily present a problem, provided the quality of the grade proved stable. However, fluctuations in quality and hence in value would result in a degree of uncertainty that ultimately could undermine the existing 21-day BFO contract.

According to a new study by energy consultancy Consilience Energy Advisory Group (CEAG) -- A User's Guide to the Future of the World Price Marker -- the uncertainties surrounding the quality of the Forties Blend has been compounded by the fact that early production experience of Buzzard has thrown up a quality surprise not evident in early assays: The Buzzard reservoir contains unexpectedly high levels of hydrogen sulphide (H₂S) in its deeper strata. H₂S is the most harmful of the sulphur compounds found in crude oil, more toxic and corrosive than mercaptans, thiols, sulphides and disulphides. Exposure to H₂S is usually fatal.

For that reason, the pipeline entry quality specifications typically place strict limits on the amount of H₂S that will be accepted. In the case of FPS this is a maximum of 0.1 ppm by weight. Accordingly, CEAG says, Nexen will have to remove H₂S offshore. If so, Forties Blend quality will obviously be protected against the direct impact from any increase in Buzzard's H₂S levels, but it may have an impact on the volume of Buzzard production and therefore on other Forties Blend quality attributes, such as API gravity and sulfur content.

Industry sources say that the Buzzard platform can't accommodate H₂S removal facilities and that the construction of a new platform is under consideration. Nexen did not wish to comment apart from reiterating a statement by President and CEO Charlie Fischer on the company website that Nexen has "experienced more well-to-well variability in the concentration of hydrogen sulphide than previously seen" but that the company is "confident that existing equipment and processes will allow us to manage this variability for at least the first two to three years of production." The statement goes on to say that preliminary analysis indicates that any additionally required equipment would cost a maximum of approximately \$250 million.

http://www.ceag.org/consilience/wp-content/uploads/2014/05/GCEM_Kyoto-pigeon-comes-home-to-roost-08_03_07.pdf the inclusion of Buzzard highlights other vulnerable areas of the Forties system. According to CEAG, Buzzard is the only field in the FPS that is downstream of the Unity Riser hub (see map). So if Unity Riser were to be closed down for maintenance or other reasons, the Forties Blend would predominantly consist of Buzzard crude. In the case of a short-term shut down, the quality issue could be managed by blending in tank from stored production. But if the shut down were to prove prolonged, the resulting Forties Blend quality would not sit easily as a deliverable grade in the BFO contract.

The Unity Riser is one key piece of offshore equipment which was installed in 1992. Forties Charlie is another crucial hub of the Forties infrastructure, east of Unity. It commenced production in 1975. A shut down of Forties Charlie would affect production from a large number of fields, including the Forties fields, the Brae area, Miller, Montrose, Arbroath and others.

The CEAG study looks at future production and cargo-by-cargo ownership of the key Brent, Forties and Oseberg blends under different scenarios and analyses the impact of including Ekofisk in the BFO contract.

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