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Bohai Bay PL19-3 Field Growth – A Mega Project with a Phased Development Strategy and Successful Appraisal Program

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The Peng-Lai (PL) 19-3 oil field located offshore of Bohai Bay Basin, was discovered in May 1999 through a joint effort of the China National Offshore Oil Corporation (CNOOC) and ConocoPhillips. It is the largest offshore oil field and second largest oil field discovered in China.

The initial phased development approach began in 2002 with a single Well-Head Platform (WHP) to test the reservoir performance and commerciality. Phase II development began in 2006 with the installation of a mooring tower, a Riser Utility Platform (RUP), a Floating Production Storage and Offloading (FPSO) vessel, and six additional platforms to develop numerous fault blocks within the core area of the large structural wrench anticline. Project implementation has been challenging due to the complexity of the reservoir and oil system, but the employment of a number of new technologies has helped the field production exceed 150 MBOPD in 2011.

An appraisal drilling program has been utilized during the Phase II development, and has successfully proved hydrocarbon presence in undrilled blocks and downdip structures, resulting in a significant increase in OOIP. This result has led to the initiation of successive field development expansion projects including wellhead platform expansion, a new wellhead platform development, and a large Phase III growth project consisting of additional three wellhead platforms and a Central Processing Facility (CPF), all of which are underway.

Field production is expected to reach another peak in the next few years with the addition of these growth projects to the existing base field development. Given the low risk and large potential of the field, a further appraisal campaign has been executed from 2013 to 2016 to delineate further field upside covering all the three fields of PL 19-3, PL 19-9 and PL 25-6. With the additional resources proved and more than forty percent of the total resources in place outside of the current development projects, additional growth project phases are in various states of early planning. The future of the Bohai Bay PL 19-3 Field is very promising.