

# SINOPEC FLYWHEEL ENERGY STORAGE DRILLING RIG



The load frequently oscillates in large amplitude like pulses when the draw-works lift or lower in the oil well drilling rig, and that makes the diesel engine run uneconomically. A new solution for the pulse load problem is to add a motor/generator set and a flywheel energy storage (FES) unit to the diesel engine mechanical drive system to form a hybrid power system with energy storage.



206 MPa direct push storage logging instrument was applied in 574 wells with a one-time success rate of 98.6%. improved and renovated 21 drilling rigs with 10 for wells deeper than 7,000 meters and 11 for wells deeper than 5,000 meters, and upgraded other 54 sets of professional and key equipment. New breakthroughs were



an inverter, with the transferred energy accelerating the flywheel to its rated speed. Energy is stored in the flywheel in the form of kinetic energy. The energy flow is from the rig power system to flywheel with induction machine as energy converter. Once the flywheel reaches its charge speed, the storage system is in standby mode and



Permanent magnetic bearings with high load ability up to 50000 kN were developed both for a 1000 kW/16.7 kWh flywheel used for the drilling practice application in hybrid power of an oil rig



In this paper, state-of-the-art and future opportunities for flywheel energy storage systems are reviewed. The FESS technology is an interdisciplinary, complex subject that

# SINOPEC FLYWHEEL ENERGY STORAGE DRILLING RIG



DC motor. When the rig operates in a high load station, energy shortage for a peak power requirement could be supplied by the flywheel system. The flywheel energy storage system would discharge and supply power to the rig through the DC motor. A flywheel energy storage system (FESS) is one of options among available renewable energy resources.



Shelf Drilling Winner jack-up rig; Source: Shelf Drilling. The new 17-month contract for the Shelf Drilling Winner jack-up rig has a value of approximately \$68 million. This deal also comes with two seven-month options. Since the planned start-up of operations is set for March 2025, in direct continuation of the rig's current work in Denmark



The Middle East once again led the way with Saudi Aramco awarding rig contracts to 23 land rigs from Helmerich & Payne (H&P), Arabian Drilling and Sinopec as part of their unconventional gas programme. Outside of drilling activities, 1Q 2024 has seen a continuation in the trend of operator consolidation in the Lower 48.



Abstract. In this paper, we propose to increase the efficiency of drilling rigs DR, through measurement, modeling, adjustment of DR operation, and incorporating an energy storage flywheel system FW resulting in significant reductions in fuel consumption and pollutant emissions. In this regard, we propose to: a) Develop a full system model of all power ???



Siemens Energy signed an agreement with Maersk Drilling to upgrade two ultra-harsh environment CJ70 jack-up drilling rigs in the North Sea with hybrid power plants using lithium-ion energy storage. The rigs ??? the Maersk Intrepid and Maersk Integrator ??? were retrofitted with BlueVault??? batteries from Siemens Energy.

# SINOPEC FLYWHEEL ENERGY STORAGE DRILLING RIG

114KWh ESS



The majority of the new additional rigs will facilitate the ongoing development of Jafurah basin, with the remaining rigs earmarked for South Ghawar and North Arabia Exploration and Development plans. The contracts were awarded to the Arabian Drilling Company, Helmrigh & Payne, and Sinopec International.



On an offshore rig, the drilling drawworks places the heaviest burden on the rig's energy supply by causing a wide variation in energy consumption over large power peaks. Typically, six to 10 large diesel generators account for the rig's total energy supply. An energy storage system smooths the load, levels out the power peaks of the



China's largest oil refiner, Sinopec Corp, has agreed to build five oil and gas rigs in Kuwait after signing a US\$350 million contract with the Kuwait Oil Company (KOC). The five-year deal is the largest the state-run company that is based in Beijing has ever won according to a statement released recently.

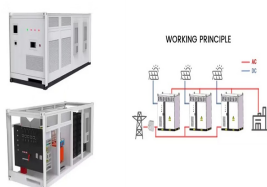


: , , , , Abstract: At present, in the petroleum industry, the design of the drive system for drilling rigs is largely conservative for safety reasons. A large redundant power capacity configuration is often adopted, and there is a lack of detection means to monitor the energy state during operation.



Download Citation | On Nov 25, 2022, Liu Shuguang and others published Design of Drilling Rig's Load-levelling System Using Flywheel Energy Storage | Find, read and cite all the research you

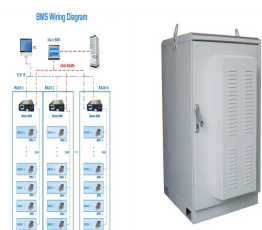
# SINOPEC FLYWHEEL ENERGY STORAGE DRILLING RIG



The oil and gas industry, particularly the offshore sector, is coming under increased pressure to lower emissions and decarbonize operations. The commercialization of an energy storage solution for marine environments and its installation on the West Mira drilling rig in the North Sea represents a step change on the way to achieving these goals.



The oil rig is an important part of the oil production equipment. In the production, the mutation load which oil rig bears will increase the energy consumption of the power unit, even damage its



The Middle Eastern gas and oil giant signed two deals for gas drilling rigs and two for oil drillers, SIPS's direct parent, Sinopec Oilfield Service, said in a statement yesterday. The agreements cement the supplier's status as Saudi Aramco's largest onshore drilling rig contractor, it added.



By implementing flywheel energy storage, it is expected that the operation WattsUp Power: Suspension, Flywheel design, Flywheel housing, Test rig, Test Flywheels, Business Plan. Aalborg University: Simulation of dimensioning, Lab. test of simulation model with made for Maersk Drilling and this project. The first flywheel is designed and



[Sinopec newly signed Kuwait Drilling Rig Project] Recently, Sinopec International Petroleum Engineering Co., Ltd., a wholly-owned subsidiary of Sinopec Petroleum Engineering Services Co., Ltd., won the bid for 14 development well drilling and workover rigs and 1 deep well drilling rig projects of Kuwait Petroleum Corporation (KOC). The contract period is 5+1 years, and the ???

# SINOPEC FLYWHEEL ENERGY STORAGE DRILLING RIG



Downloadable! The load frequently oscillates in large amplitude like pulses when the draw-works lift or lower in the oil well drilling rig, and that makes the diesel engine run uneconomically. A new solution for the pulse load problem is to add a motor/generator set and a flywheel energy storage (FES) unit to the diesel engine mechanical drive system to form a hybrid power system with ???



the energy efficiency of individual DPS-powered rigs by introducing energy storage systems (Fig. 1). The use of energy storage systems in well drilling will reduce the costs of powering self-contained facilities due to the following benefits: 1. Capital costs of powering drilling rigs are reduced with removal of one or two 1 MW DPS (of 4??5 typically



Innovation Process in Maersk Drilling Energy storage/ Flywheel: Deep Water Drilling Energy storage Project Description Questions page 2. Maersk Drilling - part of the A.P.Moller ??? Maersk Group page 3 not just the cost of the drilling rig page 13 Admin; 7% Equipment and materials; 10% Logistics; 12% Fuel cost; 5% Drilling Rig; 34% Services



A land drilling rig at Sinopec's Shengli unconventional field was recently visited by representatives of Indonesia's state-owned Pertamina energy company. Source: Dreamstime Indonesia's Pertamina and Sinopec inked a memorandum of understanding (MOU) to expand their business collaboration from upstream to downstream in traditional fossil



Strike Energy also received approval for the drilling application submitted for the South Erregulla-3 (SE-3) well in EP-503 and will proceed with drilling the SE-3 and SE-4 wells utilising Ensign's 970 rig, for which it holds a rig-sharing agreement with Mineral Resources" until at least October-November 2023.

# SINOPEC FLYWHEEL ENERGY STORAGE DRILLING RIG



This paper describes a study of conventional electrical rig and simulated application of Flywheel Energy Storage system on the power system of the offshore plants with dynamic positioning system



The load frequently oscillates in large amplitude like pulses when the draw-works lift or lower in the oil well drilling rig, and that makes the diesel engine run uneconomically. A new solution for the pulse load problem is to add a motor/generator set and a flywheel energy storage (FES) unit to the diesel engine mechanical drive system to form a hybrid power ???



In this paper, the principle of flywheel energy storage and drilling rig's load-levelling technology based on flywheel energy storage technology are studied deeply, the conditions of peak ???



In order to achieve the function of stabilizing the load fluctuation, the optimized control methods of FESS are designed and applied for oil rig, in which the flywheel stores the excess energy in ???



Topic last reviewed: June 2023 ??? Sectors: Upstream ??? Download as PDF ??? Introduction ??? Energy, primarily power with some minor heat requirement, is critical to carrying out drilling activities. Energy demands vary between drilling rigs depending on the operations, the type of rig, and the location/environment. For offshore rigs, the energy is normally supplied by diesel ???

# SINOPEC FLYWHEEL ENERGY STORAGE DRILLING RIG



The literature written in Chinese mainly and in English with a small amount is reviewed to obtain the overall status of flywheel energy storage technologies in China. The theoretical exploration of flywheel energy storage (FES) started in the 1980s in China. The experimental FES system and its components, such as the flywheel, motor/generator, bearing, ???



DRILLING RIG SPECIFICATIONS (ZJ50DB RIG) 1- SECTION A:

SUBSTRUCTURE, MAST AND ACCESORIES A.1 SUBSTRUCTURE

Fabricator: SJ Petroleum Machinery Type: DZ315/9.2 Substructure

Height: 9.2m Substructure Width: 13.4mx11.66m Maximum Setback Load:

1600 KN Maximum Rotary Load: 3150 KN A.2 MAST ???