

## UNIT 2. OFFSHORE DRILLING

### 1. Read the text and give Russian equivalents to the underlined expressions:

**Offshore drilling** refers to a mechanical process where a wellbore is drilled through the seabed. It is typically carried out in order to explore for and subsequently produce hydrocarbons which lie in rock formations beneath the seabed. Most commonly, the term is used to describe drilling activities on the continental shelf, though the term can also be applied to drilling in lakes, inshore waters and inland seas.

Offshore drilling presents environmental challenges, both from the produced hydrocarbons and the materials used during the drilling operation

### Types.

An offshore platform, also referred to as an oil platform or oil rig, is a large structure with facilities to drill wells, to extract and process oil and natural gas, and to temporarily store product until it can be brought to shore for refining and marketing. In many cases, the platform contains facilities to house the workforce as well.

Depending on the circumstances, the platform may be fixed to the ocean floor, may consist of an artificial island, or may float.

Remote subsea wells may also be connected to a platform by flow lines and by umbilical connections; these subsea solutions may consist of single wells or of a manifold centre for multiple wells.

Larger lake- and sea-based offshore platforms and drilling rigs are some of the largest moveable man-made structures in the world. There are several types of oil platforms and rigs:



## Figure 2. Offshore drilling platforms

### Fixed platforms

These platforms are built on concrete or steel legs, or both, anchored directly onto the seabed, supporting a deck with space for drilling rigs, production facilities and crew quarters. Such platforms are, by virtue of their immobility, designed for very long term use. Various types of structure are used, steel jacket, concrete caisson, floating steel and even floating concrete. Fixed platforms are economically feasible for installation in water depths up to about 1,700 ft (520 m).

### Compliant towers

These platforms consist of slender flexible towers and a pile foundation supporting a conventional deck for drilling and production operations. Compliant towers are designed to sustain significant lateral deflections and forces, and are typically used in water depths ranging from 1,500 to 3,000 feet (460 to 910 m).

### Semi-submersible platform

These platforms have hulls (columns and pontoons) of sufficient buoyancy to cause the structure to float, but of weight sufficient to keep the structure upright.

Semi-submersible platforms can be moved from place to place; can be ballasted up or down by altering the amount of flooding in buoyancy tanks; they are generally anchored by combinations of chain, wire rope or polyester rope, or both, during drilling



## VOCABULARY BOX

**to drill through the seabed** бурить сквозь морское дно

**to produce hydrocarbons** добывать углеводороды

**be brought to shore for refining** доставляться на сушу для очистки

**to house the workforce** обеспечивать местом для проживания персонал

**remote subsea wells** отдаленные морские скважины

**a manifold centre for multiple wells** пульт управления задвижками для кустового бурения скважин

**moveable man-made structures** передвижные системы, созданные человеком

**fixed platforms** стационарная морская платформа

**production facilities** производственные сооружения

**crew quarters** жилые отсеки на морской платформе

**virtue of immobility** преимущество неподвижности

**to be designed for very long term use** создан для долгосрочного использования

**steel jacket** стальной корпус

**concrete caisson** железобетонный кессон

**floating concrete** литой бетон

**to be economically feasible for installation** быть экономически возможным для установки

**compliant towers** стационарная платформа на ферменной несущей конструкции и с растяжками

**to sustain significant lateral deflections and forces** выдерживать значительные боковое смещение буровой колонны/ поперечное смещение и боковое усилие

**semi-submersible platform** буровая полупогружная платформа

**to alter the amount of flooding in buoyancy tanks** изменять объем заполнения цистерна плавучести (полупогружного основания или для укладки подводного трубопровода)

**to be ballasted up or down** откачивать и принимать балласт

**Jack-up Mobile Drilling Units (or jack-ups)** самоподъемная буровая установка (СПБУ)