

## Corrigé Type

### a. Read the text and answer the comprehensive questions

An electric power system is a network of electrical components used to supply, transmit and use electric power. An example of an electric power system is the network that supplies a region's homes and industry with power - for sizable regions, this power system is known as the grid and can be broadly divided into the generators that supply the power, the transmission system that carries the power from the generating centers to the load centers and the distribution system that feeds the power to nearby homes and industries. Smaller power systems are also found in industry, hospitals, commercial buildings and homes. The majority of these systems rely upon three-phase AC power - the standard for large-scale power transmission and distribution across the modern world. Specialized power systems that do not always rely upon three-phase AC power are found in aircraft, electric rail systems, ocean liners and automobiles.

### Comprehensive Questions:

1. Give a brief definition of the underlined words; 4 points

**The grid** : or Power Network: An electrical grid is an interconnected network for delivering electricity from producers to consumers. It consists of generating stations that produce electrical power, high voltage transmission lines that carry power from distant sources to demand centers, and distribution lines that connect individual customers.

**Generators** : In electricity generation, a generator is a device that converts motive power (mechanical energy) into electrical power for use in an external circuit.

**Transmission system**: Electric power transmission is the bulk movement of electrical energy from a generating site, such as a power plant, to an electrical substation. The interconnected lines which facilitate this movement are known as a transmission network.

**Distribution system**: Electric power distribution is the final stage in the delivery of electric power; it carries electricity from the transmission system to individual consumers.

**Three-phase AC power**: Three-phase electric power is a common method of alternating current electric power generation, transmission, and distribution. It is a type of polyphase system and is the most common method used by electrical grids worldwide to transfer power. It is also used to power large motors and other heavy loads.

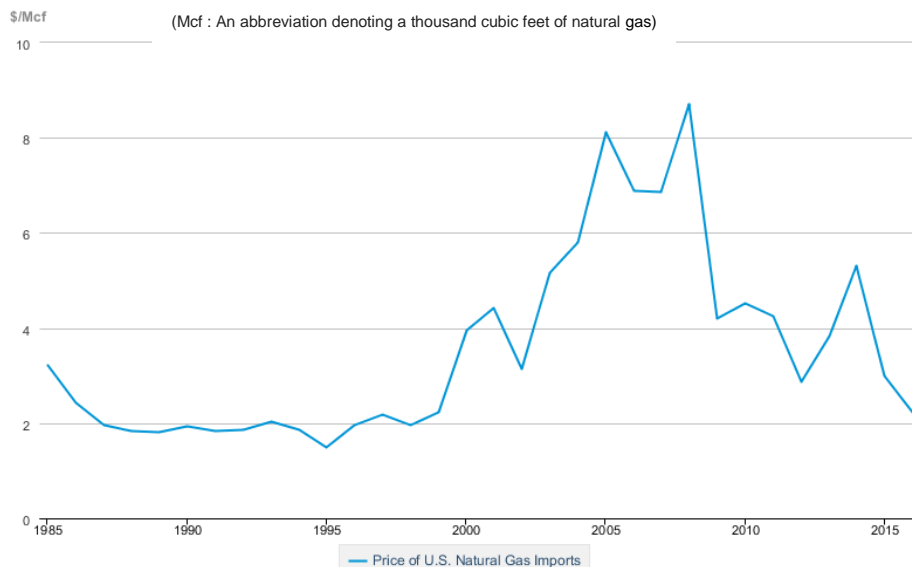
2. The majority of power systems are supplied with AC power, is it true? Why? 1 points

Yes, because is the standard for large-scale power transmission and distribution across the modern world.

3. Translate the meaning of the text to French language. 10 points

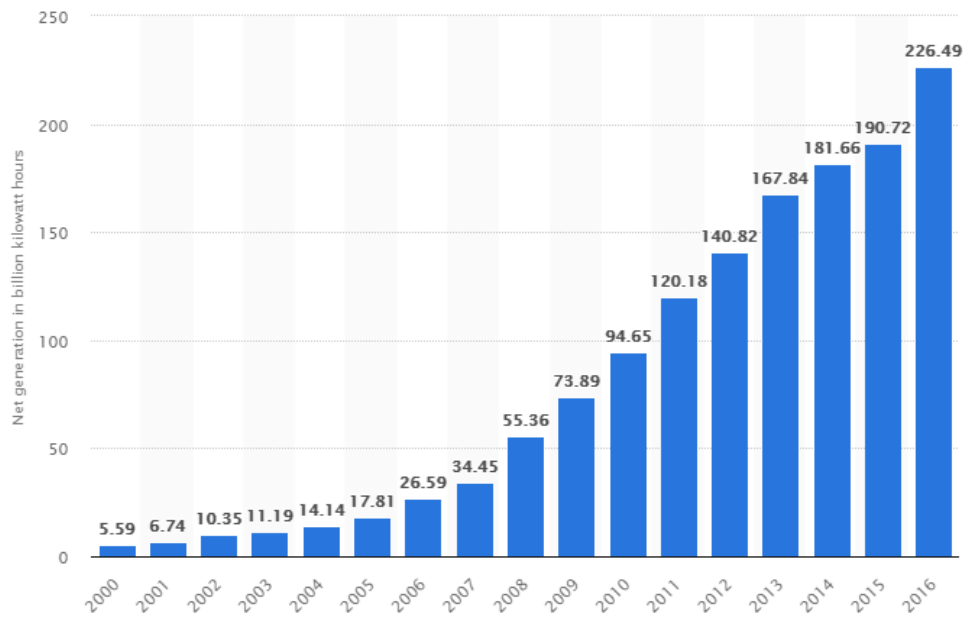
### b. Graph Reading Exercise

Study the two Graphs and then fill in the blanks.



**Figure 1.** U.S. Natural Gas import price from 1985 to 2017 (in \$/Mcf)

## Corrigé Type



**Figure 2.** U.S. wind electricity net generation from 2000 to 2016 (in billion kilowatt hours)

1. Since 2003, the price of natural gas is increasing (verb). The peak was registered in 2008 (year). 1 points
2. Currently, the price of natural gas is about 2 Dollar/Mcf (number). 1 points
3. From 2000 to 2016, wind electricity-generating capacity was increased. 1 points
4. The capacity of wind-generated electricity in U.S. was about 5.59 in 2010, and it's around 226,49 last year. 1 points
5. U.S. wind electricity net generation was increased from 2000 to 2013 from 5,59 to 167,84 1 points

**La consultation des notes aura lieu le  
01/02/2018 à 14 h dans la salle des enseignants**