

Omiye Adelanike Onome

CHE Assignment 3

Petroleum Eng

Monday,

$$P = \frac{1.4 \times 1300000 \times 0}{0.991}$$

$$= 18365287.59 \text{ W}$$

$$Q = P \times \Delta t$$

$$\Delta t = 6 \text{ hours} = 6 \times 3600 = 21600$$

$$Q = 18365287.59 \times 21600$$

$$= 396700 \text{ MJ}$$

Tuesday-

$$P = \frac{1.4 \times 1300000 \times 11}{0.991} = 20201816.35 \text{ W} \times 21600$$

$$= 436300 \text{ MJ}$$

wednesday

$$P = \frac{1.4 \times 1300000 \times 10}{0.991} = 18365287.59 \text{ W}$$

$$Q = 18365287.59 \times 21600 = 396700 \text{ MJ}$$

$$\text{Thursday} \cdot P = \frac{1.4 \times 1300000 \times 11}{0.991} = 20201816.35 \times 21600 = 436300 \text{ MJ}$$

i.e. Average thermal energy daily from sun radiation

$$= 420460 \text{ MJ}$$

$$\text{Friday} = P = \frac{1.4 \times 1300000 \times 12}{0.991} = 22038345.11 \text{ W} \times 21600 = 476600 \text{ MJ}$$

$$= \frac{396700 + 436300 + 396700 + 436300 + 476600}{5}$$

5

$$= 420460 \text{ MJ}$$

Avg Temp

Days	Day	Night
Monday 17-2-20	35°C	25°C
Tuesday 18-2-20	36°C	25°C
Wednesday 19-2-20	35°C	25°C
Thursday 20-2-20	36°C	25
Friday 21-2-20	37°C	25°C

$$P = \frac{Q}{At}$$

$$P = \frac{k \cdot A \cdot \Delta T}{L}$$

$$Q = P \times A \times t$$

where

P = rate of energy transfer

Q = e. transfer

Δt = Change in time

k = Conductivity

A = Area

L = thickness of material

ΔT = diff in temp

A = area of land in Abu Dhabi = $1.300.000 \text{ m}^2$

L = 0.991m

Monday = $\Delta T = 35 - 25 = 10^\circ \text{C}$

Tuesday $\Delta T = 36 - 25 = 11^\circ \text{C}$

wednesday $\Delta T = 35 - 25 = 10^\circ \text{C}$

Thursday $\Delta T = 36 - 25 = 11^\circ \text{C}$

Friday $\Delta T = 37 - 25 = 12^\circ \text{C}$

Omiya Adelanke Oname

CHE574 Assignment 1

16/ENG07/030

Explain the various forms of energy

- Gravitational energy - the potential energy of an obj with mass in relation to another massive object due to gravity

where $U = \text{Gravitational potential energy}$

$G = \text{universal constant}$

$m = \text{mass of the body}$

$r = \text{distance to the center of earth}$

- Sound energy - the form of energy heard by humans or animals it is also a form of energy that travels a medium is needed to produce sound

- where $I = \text{Sound intensity}$

$P = \text{Power in watts}$

$A = \text{Area in } m^2$

$f = \text{frequency, Hz}$

- Mechanical energy - This energy is the energy held by an object

$M = \text{mass in kilogram}$

$G = \text{Gravity due to acceleration}$

$H = \text{height in meters}$

5 Distinguish btwn the Sustainable energy and non-Sustainable energy resources -

- Sustainable! The form of energy that meets the everyday demands of energy and will be available for future generations, this form of energy causes no harm to the environment e.g of sustainable energy is solar, wind, hydropower.

Non-Sustainable - This refers to the energy that cannot be replaced at a quick pace to keep up its consumption. Examples are earth minerals, metal ores, fossil fuels.

Omize Adenika

16/Enyo7/30

CHE 574 Assignment

How much energy is being produced from dams in Nigeria
Compare with crude oil.

In the world we live in now, the national energy consumption mix is dominated by oil which is 53% or natural gas which is 39% while hydro power is 7%.

Hydro power -

We have a lot of rivers, and natural falls. The main hydro power resources are the Niger, and Benue rivers as well as Lake Chad basin. With an estimate 1,800 m³ per capita's per year of renewable water resource available Nigeria hydro power is high and currently accounts for 38% of total installed commercial electric power capacity.

Crude Oil - The petroleum industry is well grounded in successful exploration, starting with the first commercial viable discoveries at Oloibiri in Niger Delta in the year 1956 with production rate of 5,100 barrels per day. Reserve of crude oil stand at 28.2 billion barrel.

2 An anemometer is a device used for measuring the speed of air flow in the atmosphere, in wind tunnels and in other gas-flow applications. Most widely used for wind speed measurements is the revolving-cup electric anemometer.

