



LAKSHYA

2021-2022



Tesla's mission is to accelerate the world's transition to sustainable energy.

Tesla was founded in 2003 by a group of engineers who wanted to prove that people didn't need to compromise to drive electric – that electric vehicles can be better, quicker and more fun to drive than gasoline cars. Today, Tesla builds not only all-electric vehicles but also infinitely scalable clean energy generation and storage products. Tesla believes the faster the world stops relying on fossil fuels and moves towards a zero-emission future, the better.



Rare Air

The drive to establish commercial uses for the technology is proceeding at a rapid pace. John Ivey experienced this surge firsthand. This piece examines how he turned his drone hobby into a lucrative business by marketing his services for a much more efficient way to inspect countless PV arrays by air instead of by ground.



Hydroelectric:

A hydroelectric power station uses water flow to power a turbine. The turbines are connected to generators that produce energy through the use of water currents. The amount of energy generated is determined by the speed the water flows. Therefore, a swiftly flowing river will generate more electricity than a slower moving current.



Wind:

Wind energy is produced by wind turbines, which have rotating blades that harness the wind's kinetic energy. Wind turbines contain generators that harness the mechanical energy from the spinning blades to generate electricity. The U.S. currently generates enough electricity through wind to power 23.5 million homes.



Landfill Gas :

The waste we generate ends up in landfills, where it decomposes and produces landfill gas made of approximately 50 percent methane. This gas can be captured and used to fuel electric generators. Since large landfills must burn off this gas to reduce the hazards arising from gas buildup, this method of renewable energy is one of the most successful.



THERMAL POWER PLANT:



Vindhyachal Thermal Power Station in the Singrauli district of Madhya Pradesh, with an installed capacity of 4,760MW, is currently the biggest thermal power plant in India. It is a coal-based power plant owned and operated by NTPC. Construction of the plant, which comprised 12 generating units (six 210MW units and six 500MW units), had begun in 1982. The first unit was commissioned in 1987, while the sixth 500MW was commissioned in April 2013. An additional 500MW unit was commissioned in August 2015, increasing the plant's gross capacity from 4,260MW to 4,760MW.

HYDRO POWER PLANT:



The TEHRI DAM is the highest dam in India and one of the highest in the world. It is a multi-purpose rock and earth-fill embankment dam on the Bhagirathi River near Tehri in Uttarakhand, India. It is the primary dam of the THDC India Ltd. and the Tehri hydroelectric. Phase 1 was completed in 2006. The Tehri Dam withholds a reservoir for irrigation, municipal water supply and the generation of 1,000 megawatts (1,300,000 hp) of hydroelectricity. The dam's 1,000 MW variable-speed pumped-storage scheme is currently under construction with expected commissioning in May 2018.

NUCLEAR POWER PLANT :

Nuclear power is the fifth - largest source of electricity in India after thermal, hydroelectric and renewable sources of electricity. As of 2016, India has 22 nuclear reactors in operation at seven sites, having an installed capacity of 6780 MW. And producing a total of 30,292.91 GWh of electricity 11 more reactors are under construction to generate an additional 8,100 MW.

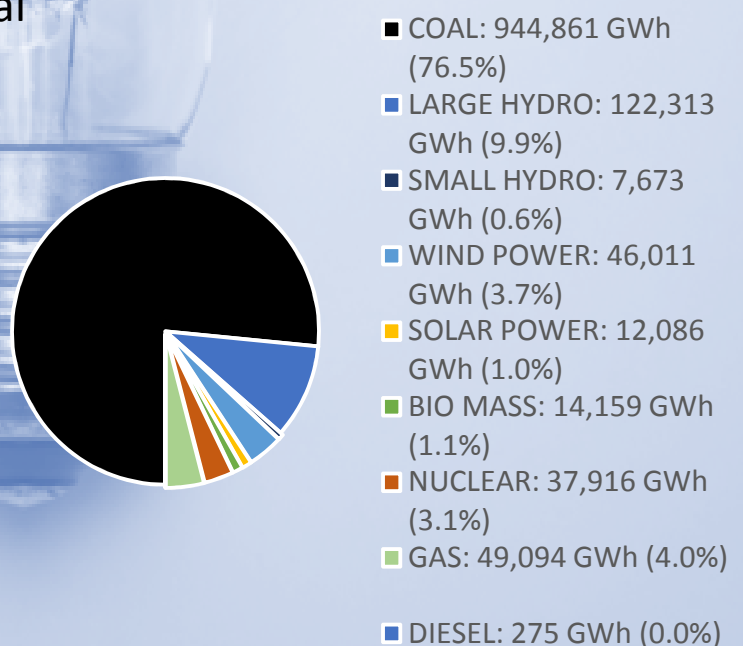
All the twenty two nuclear power reactors with an installed capacity of 6,780 MW equal to 2.2% of total installed utility capacity, are operated by the Nuclear Power Corporation of India. India ranked seventh in number of operated reactors (22) and fourteenth in total installed capacity.



ELECTRIC SECTOR IN INDIA (2016-17) :

During the fiscal year 2016-17, the gross electricity generated by utilities in India was 1,236.39 TWh and the total electricity generation (utilities and non utilities) in the country was 1,433.4 TWh. The gross electricity consumption was 1,122 kWh per capita in the year 2016-17. India is the world's third largest producer and third largest consumer of electricity. New installations of renewable energy in India surpassed installations of fossil fuel for the first time in 2016-17.

ELECTRICAL GENERATION BY SOURCES IN INDIA FY(2016-17)



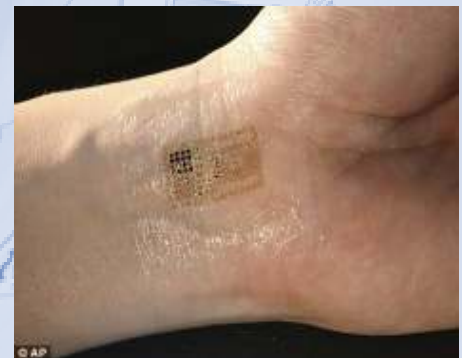
SUPER CAPACITOR:

The super-capacitor, also known as ultra-capacitor or double-layer capacitor, differs from a regular capacitor in that it has very high capacitance. A capacitor stores energy by means of a static charge as opposed to an electrochemical reaction. Applying a voltage differential on the positive and negative plates charges the capacitor. This is similar to the buildup of electrical charge when walking on a carpet. Touching an object releases the energy through the finger.



ELECTRONIC TATTOO:

Electrical engineer Yael Hanein, professor at Tel Aviv University, Israel, developed a flexible electrode which can be applied like a tattoo. The technology was designed so that persons needing long term recordings of muscle activity could wear the thin electrode without inconvenience. Hanein noted that the researchers were tasked with the key innovation of making very thin electrodes. Their successful result can do anything regular electrodes can do.



HIGH EFFICIENCY SOLAR PANNELS:

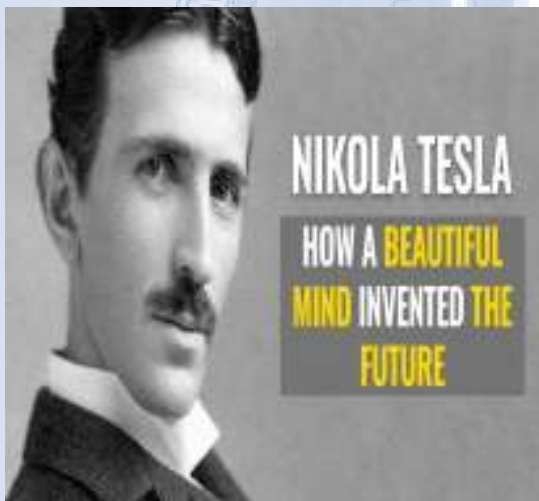
Buffalo, New York is the site of the new Solar-City factory where the company will be able to produce 10,000 solar panels each day. It will be one of the biggest in the world, and will transform the way solar panels are currently made. It is a risky move for the company because China currently produces conventional silicon-based solar panels very cheaply.



NIKOLA TESLA

(10 July 1856 – 7 Jan 1943) :

Born and raised in the Austrian Empire, Tesla received an advanced education in engineering and physics in the 1870s and gained practical experience in the early 1880s working in telephony and at Continental Edison in the new electric power industry. He emigrated to the United States in 1884, where he would become a naturalized citizen. He worked for a short time at the Edison Machine Works in New York City before he struck out on his own. With the help of partners to finance and market his ideas, Tesla set up laboratories and companies in New York to develop a range of electrical and mechanical devices.



TESLA COIL:

The **Tesla coil** is an electrical resonant transformer circuit designed by inventor Nikola Tesla in 1891. It is used to produce high-voltage, low-current, high frequency alternating-current electricity.

Tesla used these circuits to conduct innovative experiments in electrical lighting, phosphorescence, X-ray generation, high frequency alternating current phenomena, electrotherapy, and the transmission of electrical energy without wires. Tesla coil circuits were used commercially in spark gap radio transmitters for wireless telegraphy until the 1920s, and in medical equipment such as electrotherapy and violet ray devices.

WORD PUZZLES:

SaveOnEnergy
Crossword Puzzle Answers

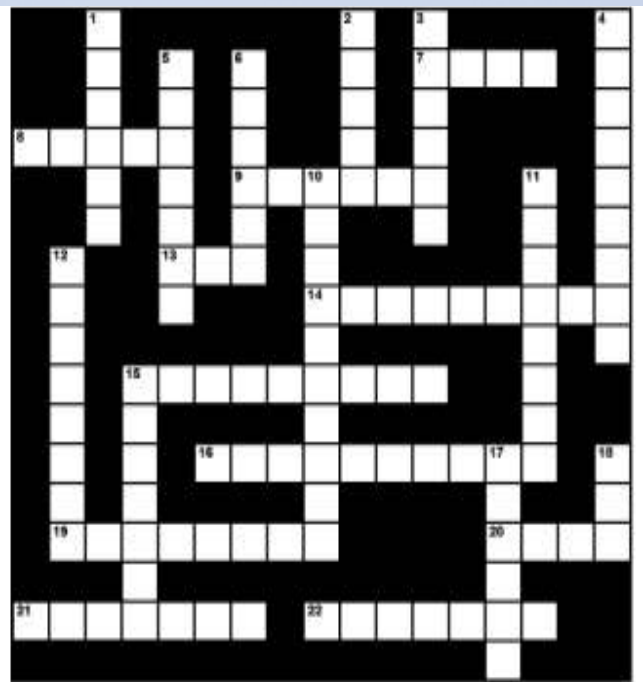
Prove you're an energy expert!

Down

1. What does kW stand for?
2. A supply plan that is "pay-as-you-go."
3. Type of energy generated when air moves through turbines.
4. Type of light bulb that saves energy.
5. Electricity generated by burning organic matter such as plants.
6. A country supplied by 100% renewable energy.
7. Our home planet.

Across

8. Type of supply plan that can change each month.
9. Type of supply rate that's the same each month.
10. The entity responsible for transmission and delivery of electricity.
11. Type of energy generated by photovoltaic cells.
12. State that generates the most wind energy in the US.



- Across**
7. Unit of electrical power, named after the Scottish inventor of the steam engine
 8. a rotating machine that transforms electrical energy into mechanical energy
 9. The kind of electricity you create by rubbing a balloon on your head
 13. Atom or group of atoms that carries a positive or negative electric charge as a result of having lost or gained one or more electrons
 14. Emission of radiant energy in the form of waves or particles
 15. It transmits electricity, like copper
 16. Opposition to the passage of an electric current
 19. Elementary particle consisting of a charge of negative electricity
- Down**
1. Elementary particle that carries a positive charge
 2. Electromagnetic radiation in the wavelength range including infrared, visible, ultraviolet, and X rays
 3. Device for making, breaking, or changing the connections in an electrical circuit
 4. Flash produced by a discharge of atmospheric electricity
 5. Complete path of an electric current including the source of electric energy
 6. Inventor of the electric light bulb
 10. Force acting on particles of

SUDOKU

		1	5					
8					3	1	4	
4			8					3
7			5					8
		6	9		8	3		
3				2				5
5				7				1
	2	7	1					9
					4	5		

HUMOR:

WHO SAID ENGLISH IS EASY?

Fill this blank with "Yes" or "No"

1. I don't have a brain.
2. I don't have sense.
3. I am stupid.

What's winning attitude?
3 ants saw an elephant coming.

Ant1: We will kill him
Ant2: We will break his legs.
Ant3: Forgive him guys, he is alone and we are 3



DO YOU KNOW FACTS

- Did you know...Hydro generation accounts for 35% of total renewable electricity in the U.S.
- Did you know...Wood solids – which come from mostly logging and mill residues; wood, paper, and furniture manufacturing; or discarded large timber projects, such as railway ties, utility poles, and marine pilings – account for nearly one-third of the electricity generated from biomass and waste.
- Did you know...There are over 600 operational landfill gas projects throughout the U.S.
- Did you know...The average wind turbine stands 20 stories tall with 3 blades that span 200 feet across.
- Did you know...If the typical household consumption of 10.7 mWh per year was generated by solar energy, it would eliminate the burning of 10,766 pounds of coal.

D Vamsi Krishna-IV EEE
I Sudheer - III EEE
Ch Naveen-II EEE

A .Arjun Rao (H.O.D - EEE)
K Praveena (ASST.PROF)
B Madhusudhana Rao (ASST.PROF)



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