Transformers and Substations: Power at the Right Voltage

How does electricity reach a data center at the right voltage?

In the news

A new AI data center is being built near Robstown, Texas. Before its computers can run, it needs a lot of electricity. In early November 2026, the company building it said work had started on a substation for the site. Following the electricity on its trip shows why that matters.

Start with the whole system

A data center is a building full of computers called servers. Servers run all day and night. They need a steady supply of electricity.

That electricity comes from power plants. A power plant makes electricity. Power lines carry it away. The grid is the large network of power plants, power lines and substations that connects power plants to the people and buildings that use electricity.

Voltage and current

Two words help explain the trip. Voltage is the electric push that moves charge through a wire. Current is how much electric charge flows through a wire each second.

Think of water in a hose. The water pressure is like voltage. The amount of water flowing out each second is like current. Like any model, this one is not perfect, but it helps.

Power is how fast energy is delivered. The same power can be sent in two ways. It can use high voltage with low current. Or it can use low voltage with high current.

Every wire pushes back a little on the current flowing through it. This makes the wire warm. Some energy leaks out of a warm wire as heat. More current makes much more heat. Less current means less energy is lost as heat.

So power lines that go a long way use very high voltage. Then the current can be low, and less energy is wasted along the way. High voltage does not add energy. It is a way to send the same power with less loss.

Transformers

A transformer is a machine that changes the voltage of AC electricity. A transformer does not make electricity. It only changes the voltage. AC means alternating current. In AC, the current flips direction back and forth many times each second. The grid uses AC.

Inside a transformer are two coils. A coil is wire wrapped around and around in loops. The two coils are wound on the same iron core, but they do not touch. AC in the first coil makes a magnetic field that keeps changing. That changing field causes a voltage in the second coil.

The number of loops sets the new voltage. If the second coil has more loops, the voltage goes up. This is called stepping up. If the second coil has fewer loops, the voltage goes down. This is called stepping down.

A step-up transformer near the power plant raises the voltage for the long trip. Step-down transformers lower it again near the places that use the electricity.

Substations

A substation is a fenced site that connects, controls and protects power lines. Many substations have transformers that change the voltage. Some substations do not change the voltage at all. They only connect and control lines.

A switch is a device workers open or close to connect or disconnect a line. Workers might open a switch so a line can be fixed safely.

A breaker is a safety device that opens by itself to stop current when there is a problem. For example, a tree branch might fall on a line. The breaker opens fast. This helps protect people and equipment.

The trip to a data center

Now follow the electricity. First, a power plant makes it. Second, a step-up transformer raises the voltage. Third, high-voltage transmission lines carry it a long way. Transmission lines are the tall power lines that carry electricity long distances.

Fourth, a substation lowers the voltage. A big data center often has its own substation on or near the site. Fifth, power equipment inside the data center gets the electricity ready for the servers.

The voltage is lowered in stages. A stage is one step in a process that has several steps. Each stage lowers the voltage a step closer to what the equipment can use.

Servers cannot use power-line electricity just as it arrives. Power equipment in the data center lowers the voltage and keeps it steady. It also changes AC into DC for

the servers. DC means direct current. In DC, the current flows in only one direction. Some power equipment also keeps the servers running for a short time if the grid power stops.

Staying safe

The voltage in transmission lines and substations is high enough to kill. Electricity at that voltage can even jump through the air to a person who gets too close. That is why substations have a fence and warning signs. The fence keeps people a safe distance from the equipment.

Never climb a substation fence or a power pole, even to get a ball. Tell an adult. They can call the power company. Stay far away from any fallen power line. Never try to experiment with wall outlets or power lines.

Key ideas

- A transformer changes the voltage of AC electricity. It does not make electricity.
- High voltage lets power lines use low current, so less energy is lost as heat.
- Substations connect, control and protect power lines. Many also change the voltage.
- The voltage is lowered in stages before the data center equipment uses it.
- Stay away from substations and power lines.

Words to know

AC (alternating current): Current that flips direction back and forth many times each second.

DC (direct current): Current that flows in only one direction.

Breaker: A safety device that opens by itself to stop current when there is a problem.

Coil: Wire wrapped around and around in loops.

Current: How much electric charge flows through a wire each second.

Grid: The large network of power plants, power lines and substations.

Stage: One step in a process that has several steps.

Substation: A fenced site that connects, controls and protects power lines.

Switch: A device workers open or close to connect or disconnect a line.

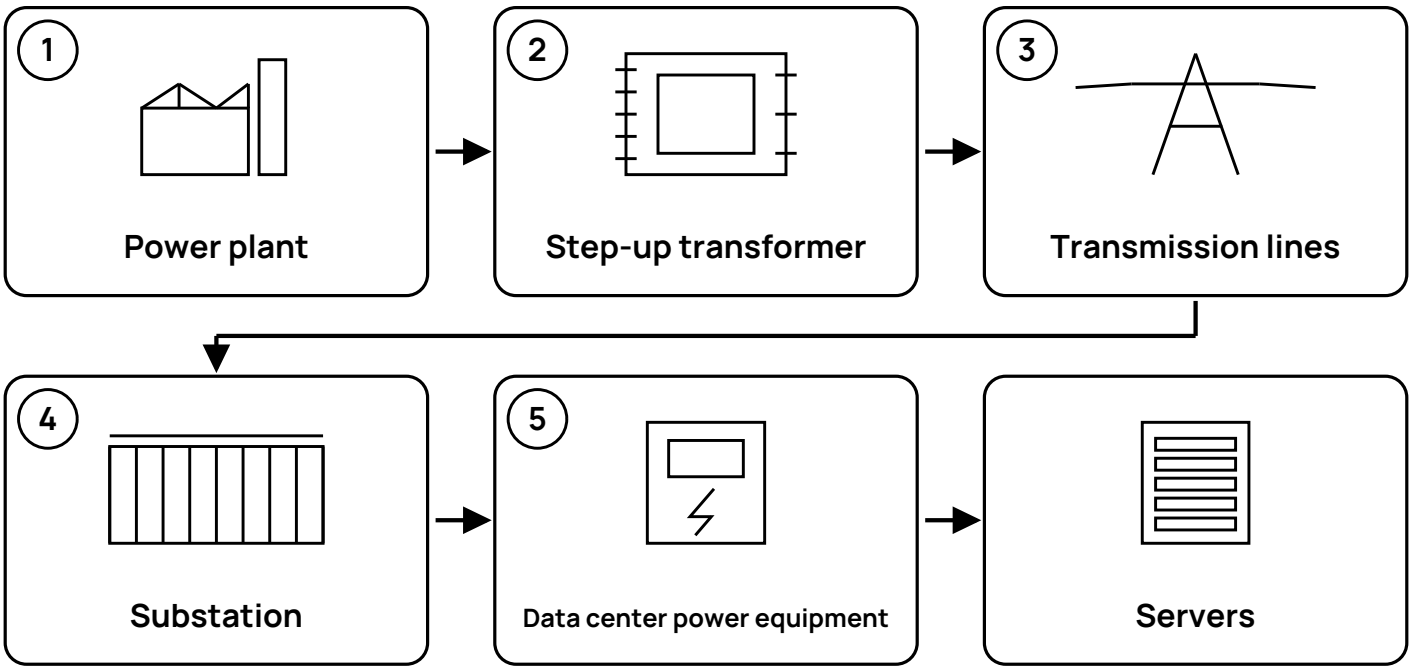
Transformer: A machine that changes the voltage of AC electricity.

Transmission lines: The tall power lines that carry electricity long distances.

Voltage: The electric push that moves charge through a wire.

The path to the servers

This diagram shows the trip described in 'The trip to a data center'.



From the step-up transformer to the substation, very high voltage lets the current stay low. From the substation on, the voltage is lowered in stages.

Not shown: switches, breakers and the safety fence at the substation (see 'Substations' and 'Staying safe'). Real systems have more steps than this simple diagram.

Original source

Hut 8 begins substation work at $399M Beacon Point data center near Robstown

Texas Construction Hub · November 5, 2026

https://www.texasconstructionhub.com/stories/hut8-beacon-point-substation-construction

For teachers and parents: scan the code to print the article or read it aloud. Students do not need the article to answer the questions.

About the news story

On November 5, 2026, Texas Construction Hub reported that the company Hut 8 has started building a substation at its Beacon Point AI data center campus near Robstown, Texas. The company shared the update with its business results on November 4. Workers are also building foundations and underground utilities for the first phase. The campus has an agreement with the utility AEP Texas for up to 1,000 megawatts of electricity. The first data hall is planned for the third quarter of 2027.

Transformers and Substations: Power at the Right Voltage

Initials _____ Date _____

Keep the explainer beside you. Look back for every answer. The explainer sections have headings to help you find things.

Warm-ups

Warm-up A: What does a transformer change?

Write or draw your answer.

Warm-up B: Why does a substation have a fence?

Write or draw your answer.

Part 1: Circle the best answer

1. A data center needs electricity. Where is the electricity made?

A. At a transformer

B. At a power plant

C. At a substation

2. What does a transformer do to AC electricity?

A. It changes the voltage

B. It makes new electricity

C. It turns it into light

3. Current flows through a long wire, and the wire gets warm. What happens to some energy?

A. It is stored in the wire

B. It becomes extra voltage

C. It leaks out as heat

4. Power lines that go a long way use very high voltage. Why?

A. The current can be low, so less energy is lost

B. High voltage adds more energy

C. Low current makes wires warmer

5. The second coil in a transformer has fewer loops than the first coil. What happens?

A. The voltage goes up

B. The voltage goes down

C. The current stops

6. A tree branch falls on a power line. Which device opens by itself to stop the current?

A. A coil

B. A switch

C. A breaker

7. Which sentence about substations is true?

A. Every substation changes the voltage

B. Substations connect, control and protect power lines

C. Substations make electricity

8. Why is the voltage lowered in stages?

A. Each stage adds energy for the servers

B. Each stage brings the voltage closer to what equipment can use

C. Each stage makes the current flip faster

9. What happens to the electricity inside the data center before servers use it?

A. Power equipment changes it from AC to DC

B. Nothing, servers use it just as it arrives

C. It is sent back to the power plant

Part 2: Fill in the blanks

Word bank (use each word once): current · transformer · substation · stage

1. AC voltage is changed by a _____.

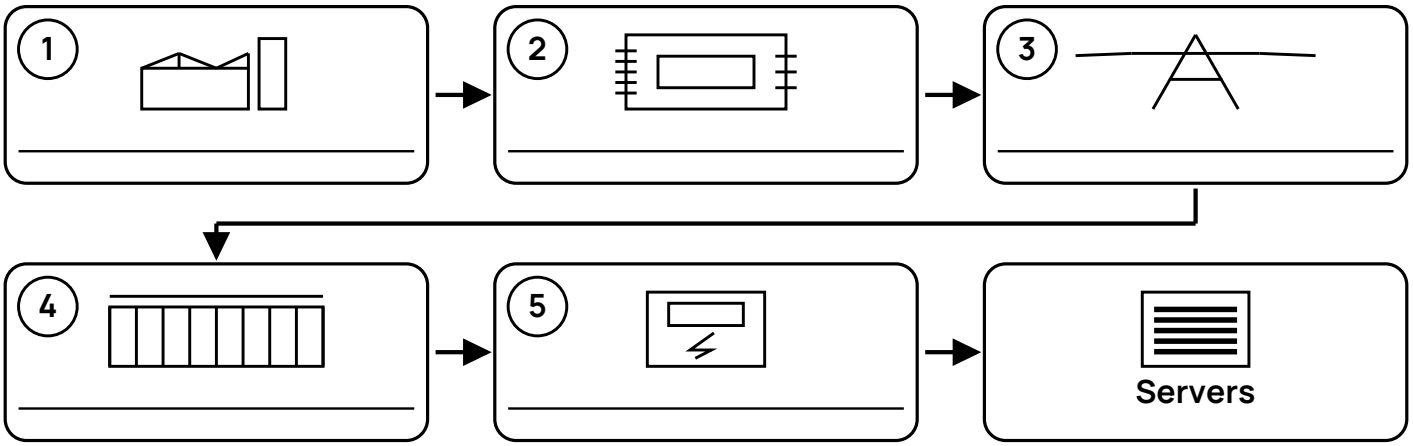
2. Less energy is lost as heat when there is less _____.

3. A fenced site that protects power lines is a _____.

4. Each step down in voltage is called a _____.

Part 3: Label the diagram

Follow the path to the servers. Write one word bank label on each numbered line.
Word bank: Power plant · Step-up transformer · Transmission lines · Substation · Data center power equipment



Part 4: Think about it

1. Why do long power lines use high voltage? Use the words current and heat.
Start: High voltage lets the current be ... On the last line, write the section name you used.

_____

_____

_____

2. A ball lands inside a substation fence. A friend wants to climb in. What should they do? Why?
Start: My friend should ... because ...

_____

_____

_____

Vocabulary Word Search

Find the words across, down or diagonally down and right, reading forward.

I	J	M	E	C	E	L	J	O	D	B	J	C	D	I
D	E	N	C	D	G	V	E	Q	I	J	S	O	Q	T
T	G	H	T	A	D	G	N	X	J	C	I	T	X	Q
B	R	E	A	K	E	R	J	V	Y	J	C	R	M	B
N	I	A	F	B	Y	O	W	O	E	P	S	C	O	R
I	D	T	N	G	Q	J	V	L	V	I	W	Y	O	P
O	F	M	B	S	U	B	S	T	A	T	I	O	N	O
V	Q	S	J	J	F	Q	O	A	F	F	T	Z	W	W
E	N	Q	Y	Y	I	O	O	G	E	B	C	Z	W	Z
M	L	U	L	C	U	R	R	E	N	T	H	X	I	O
H	P	M	L	O	H	J	F	M	C	Z	T	M	F	Y
F	E	K	T	I	V	L	I	Y	E	X	G	Z	H	Q
X	K	D	C	L	E	U	Y	Q	H	R	H	P	E	K
N	I	A	B	M	J	Y	U	T	W	U	E	D	R	R
M	O	X	Z	B	B	S	E	E	M	G	Y	R	C	L

- ☐ CURRENT
- ☐ FENCE
- ☐ HEAT
- ☐ VOLTAGE
- ☐ TRANSFORMER
- ☐ SWITCH
- ☐ COIL
- ☐ SUBSTATION
- ☐ GRID
- ☐ BREAKER

Activity: Pass the Power to the Servers

Time: 10 minutes, alone or with a teacher or parent · You need: six slips of paper and a pencil.

A new AI data center near Robstown, Texas, is building a substation so its computers can run — walk the power from the power plant to its servers.

1. On five slips, write the stations: Power plant, Step-up transformer, Transmission lines, Substation, and Data center power equipment. Lay them out in that order.
2. Fold the last slip and write POWER on it. This paper card stands for electricity. It is only paper and cannot shock you.
3. Solo: Walk the card through the five stations yourself. Pair: The child and teacher or parent share the stages and pass the card between them.
4. Start at the power plant. At the step-up transformer, raise the card high above your head to show high voltage.
5. Walk slowly and steadily along the transmission lines with the card held high. In this model, slow and steady stands for low current, so less energy is lost as heat.
6. At the substation, lower the card to shoulder height. At the data center power equipment, lower it to waist height, then take it to the servers.
7. Replay the long trip with the card LOW and hurry back and forth three times. Fold one corner down on each trip. The folded corners stand for energy lost as heat. Which trip wasted more?

Safety: This game uses paper only — never real electricity. Never climb a substation fence or a power pole, even to get a ball. Stay far away from any fallen power line, and never experiment with wall outlets or power lines. If you see a problem with real power lines, tell an adult.

Discuss together

- Why did the card travel high on the long trip?
- What did the folded corners stand for on the fast, low trip?
- What three jobs does the substation do, and what would happen if a tree branch fell on the line?

Exit ticket

Cut or copy these three questions. One or two sentences each is enough.

1. What does a transformer change, and what does it not do?
2. Why do long power lines use very high voltage, and how is the voltage lowered before the servers can use it? Use the words current, heat and stages.
3. What three jobs does a substation do, and what is one safety rule for real power lines?

Support and stretch

Support: Offer extra time, a quiet space, and breaks. Accept spoken or pointed answers before writing. Let the learner look back at the five-stage diagram (“The path to the servers”) while answering.
Stretch: Draw the full trip from the power plant to the servers, labeling where the voltage goes up and where it goes down. Or explain the water-hose model aloud or to a partner: water pressure is like voltage, and the water flowing out each second is like current.

Transformers and Substations: Power at the Right Voltage

How does electricity reach a data center at the right voltage?

About 30–40 minutes · Main target grade 6 (works for grades 4–8) · Explainer written at about a grade 5 reading level

What students will learn

- Describe what a transformer does: it changes the voltage of AC electricity and does not make electricity.
- Explain, in plain words, why long power lines use high voltage: lower current means less energy lost as heat.
- Describe what a substation does: connect, control and protect power lines, and often change the voltage.
- Put the main steps of the path from a power plant to data center servers in order, using a diagram.
- Name ways to stay safe around substations and power lines.

Supplies

The explainer (4 pages), the student sheet (4 pages, two sheets printed on both sides), a pencil and an eraser. A highlighter is optional.

How to use it

- Read the explainer first, aloud or together. It is fine to read every word aloud to the student, including the questions and answer choices.
- Each question can be answered from the explainer. The section names below show where. You may point the student to the section name if they get stuck.
- Students may draw or write their answers in the warm-up boxes. Short or spoken answers are fine; an adult may write down what the student says.
- Break it up if needed: explainer one day, questions the next. The word search can be done last or on its own.
- Safety: this lesson has no hands-on electricity activity. Do not try experiments with wall outlets, power cords or power lines.
- Privacy: use initials only on the sheet.

Answer key

Warm-ups

Warm-up A: What does a transformer change?

Answer: The voltage of AC electricity. Drawings that show this idea are fine.

Explainer — Transformers: "A transformer is a machine that changes the voltage of AC electricity."

Warm-up B: Why does a substation have a fence?

Answer: To keep people a safe distance from dangerous high-voltage equipment. Drawings that show this idea are fine.

Explainer — Staying safe: "The fence keeps people a safe distance from the equipment."

Part 1: Multiple choice

1. A data center needs electricity. Where is the electricity made?

Answer: **B**. At a power plant

Explainer — Start with the whole system: "A power plant makes electricity."

2. What does a transformer do to AC electricity?

Answer: **A**. It changes the voltage

Explainer — Transformers: "A transformer does not make electricity. It only changes the voltage."

3. Current flows through a long wire, and the wire gets warm. What happens to some energy?

Answer: **C**. It leaks out as heat

Explainer — Voltage and current: "Some energy leaks out of a warm wire as heat."

4. Power lines that go a long way use very high voltage. Why?

Answer: **A**. The current can be low, so less energy is lost

Explainer — Voltage and current: "Then the current can be low, and less energy is wasted along the way."

5. The second coil in a transformer has fewer loops than the first coil. What happens?

Answer: **B**. The voltage goes down

Explainer — Transformers: "If the second coil has fewer loops, the voltage goes down."

6. A tree branch falls on a power line. Which device opens by itself to stop the current?

Answer: **C**. A breaker

Explainer — Substations: "A breaker is a safety device that opens by itself to stop current when there is a problem."

7. Which sentence about substations is true?

Answer: **B**. Substations connect, control and protect power lines

Explainer — Substations: "A substation is a fenced site that connects, controls and protects power lines."

8. Why is the voltage lowered in stages?

Answer: **B**. Each stage brings the voltage closer to what equipment can use

Explainer — The trip to a data center: "Each stage lowers the voltage a step closer to what the equipment can use."

9. What happens to the electricity inside the data center before servers use it?

Answer: **A**. Power equipment changes it from AC to DC

Explainer — The trip to a data center: "It also changes AC into DC for the servers."

Part 2: Fill in the blanks

1. AC voltage is changed by a **transformer** .

Explainer — Transformers: "A transformer is a machine that changes the voltage of AC electricity."

2. Less energy is lost as heat when there is less **current** .

Explainer — Voltage and current: "Less current means less energy is lost as heat."

3. A fenced site that protects power lines is a **substation** .

Explainer — Substations: "A substation is a fenced site that connects, controls and protects power lines."

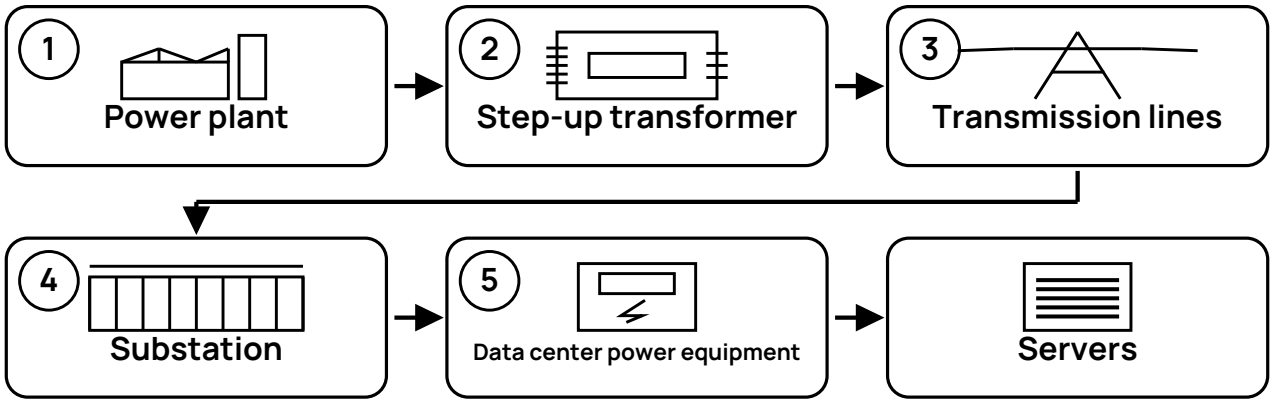
4. Each step down in voltage is called a **stage** .

Explainer — The trip to a data center: "Each stage lowers the voltage a step closer to what the equipment can use."

Part 3: Label the diagram

Answers: 1. Power plant; 2. Step-up transformer; 3. Transmission lines; 4. Substation; 5. Data center power equipment. The last box, Servers, is already labeled.

The section 'The trip to a data center' describes the steps in this order.



Part 4: Think about it

1. Why do long power lines use high voltage? Use the words current and heat.

Sample answer: High voltage lets the same power travel with low current. Low current makes less heat in the wire, so less energy is lost on the long trip. Section: Voltage and current.

> Explainer — Voltage and current: "So power lines that go a long way use very high voltage. Then the current can be low, and less energy is wasted along the way."

2. A ball lands inside a substation fence. A friend wants to climb in. What should they do? Why?

Sample answer: Do not climb. Tell an adult, who can call the power company. The voltage inside is high enough to kill, and it can jump through the air to a person who gets too close.

> Explainer — Staying safe: "Never climb a substation fence or a power pole, even to get a ball. Tell an adult. They can call the power company."

Accept reasonable answers in the student's own words. Scoring idea (2 points each): 1 point for the main idea, 1 point for a reason that matches the explainer. For question 1, the key link is low current → less heat lost; also check the section name ('Voltage and current', or another section that truly supports the answer). For question 2, any answer that keeps the friend out of the substation and gets an adult earns the main-idea point.

Vocabulary Word Search — Answer Key

Every word search answer is defined in the explainer (Words to know and the sections 'Start with the whole system', 'Voltage and current', 'Transformers', 'Substations' and 'Staying safe').

I	J	M	E	C	E	L	J	O	D	B	J	C	D	I
D	E	N	C	D	G	V	E	Q	I	J	S	O	Q	T
T	G	H	T	A	D	G	N	X	J	C	I	T	X	Q
B	R	E	A	K	E	R	J	V	Y	J	C	R	M	B
N	I	A	F	B	Y	O	W	O	E	P	S	C	O	R
I	D	T	N	G	Q	J	V	L	V	I	W	Y	O	P
O	F	M	B	S	U	B	S	T	A	T	I	O	N	O
V	Q	S	J	J	F	Q	O	A	F	F	T	Z	W	W
E	N	Q	Y	Y	I	O	O	G	E	B	C	Z	W	Z
M	L	U	L	C	U	R	R	E	N	T	H	X	I	O
H	P	M	L	O	H	J	F	M	C	Z	T	M	F	Y
F	E	K	T	I	V	L	I	Y	E	X	G	Z	H	Q
X	K	D	C	L	E	U	Y	Q	H	R	H	P	E	K
N	I	A	B	M	J	Y	U	T	W	U	E	D	R	R
M	O	X	Z	B	B	S	E	E	M	G	Y	R	C	L

- ☐ CURRENT
- ☐ FENCE
- ☐ HEAT
- ☐ VOLTAGE
- ☐ TRANSFORMER
- ☐ SWITCH
- ☐ COIL
- ☐ SUBSTATION
- ☐ GRID
- ☐ BREAKER

Locations (row, column, direction):

CURRENT: 10, 5, across
SUBSTATION: 7, 5, across
SWITCH: 5, 12, down
HEAT: 3, 3, down
BREAKER: 4, 1, across
TRANSFORMER: 3, 1, diagonal
FENCE: 8, 10, down
GRID: 3, 2, down
COIL: 10, 5, down
VOLTAGE: 4, 9, down

Standards

This is a short reading lesson. It supports parts of the standards below. It does not by itself meet a full NGSS performance expectation, because students do not develop their own model, collect data or design a solution.

Common Core, grade 6 and grades 6–8 science literacy (practiced here; RI.6.1 only partly assessed)

CCSS.ELA-LITERACY.RI.6.1: Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

Where: Partly assessed: Think about it 1 asks students to write the section name that supports their answer. Other items support use of text evidence; formal quotation and inference are not assessed.

CCSS.ELA-LITERACY.RST.6-8.4: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.

Where: Word search, Part 2.

CCSS.ELA-LITERACY.RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

Where: Part 3 diagram labeling.

CCSS.ELA-LITERACY.L.6.6: Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Where: Word search.

NGSS middle school (supports only; not a full performance expectation)

Crosscutting concept: Systems and System Models (as listed with MS-PS3-2): Models can be used to represent systems and their interactions – such as inputs, processes, and outputs – and energy and matter flows within systems.

Where: Students use a simple diagram of the path from power plant to servers (Part 3).

Crosscutting concept: Energy and Matter (as listed with MS-PS3-3): The transfer of energy can be tracked as energy flows through a designed or natural system.

Where: Students track electrical energy through the grid and explain energy lost as heat (Q3, Q4, Think about it 1). Students do not design or test a device, so this lesson does not address the MS-PS3-3 performance expectation itself.

Note: How transformers work (electromagnetic induction) and power loss in wires go beyond the middle school NGSS performance expectations. Here they are background reading, not assessed science standards.

Sources

- Texas Construction Hub, “Hut 8 begins substation work at $399M Beacon Point data center near Robstown,” November 5, 2026. https://www.texasconstructionhub.com/stories/hut8-beacon-point-substation-construction
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- Common Core State Standards, Science and Technical Subjects, Grades 6–8. https://www.thecorestandards.org/ELA-Literacy/RST/6-8/
- Common Core State Standards, Language, Grade 6. https://www.thecorestandards.org/ELA-Literacy/L/6/

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That electricity comes from power plants. A power plant makes electricity. Power lines carry it away. The grid is the large network of power plants, power lines and substations that connects power plants to the people and buildings that use electricity.

Voltage and current

Two words help explain the trip. Voltage is the electric push that moves charge through a wire. Current is how much electric charge flows through a wire each second.

Think of water in a hose. The water pressure is like voltage. The amount of water flowing out each second is like current. Like any model, this one is not perfect, but it helps.

Power is how fast energy is delivered. The same power can be sent in two ways. It can use high voltage with low current. Or it can use low voltage with high current.

Every wire pushes back a little on the current flowing through it. This makes the wire warm. Some energy leaks out of a warm wire as heat. More current makes much more heat. Less current means less energy is lost as heat.

So power lines that go a long way use very high voltage. Then the current can be low, and less energy is wasted along the way. High voltage does not add energy. It is a way to send the same power with less loss.

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The number of loops sets the new voltage. If the second coil has more loops, the voltage goes up. This is called stepping up. If the second coil has fewer loops, the voltage goes down. This is called stepping down.

A step-up transformer near the power plant raises the voltage for the long trip. Step-down transformers lower it again near the places that use the electricity.

Substations

A substation is a fenced site that connects, controls and protects power lines. Many substations have transformers that change the voltage. Some substations do not change the voltage at all. They only connect and control lines.

A switch is a device workers open or close to connect or disconnect a line. Workers might open a switch so a line can be fixed safely.

A breaker is a safety device that opens by itself to stop current when there is a problem. For example, a tree branch might fall on a line. The breaker opens fast. This helps protect people and equipment.

The trip to a data center

Now follow the electricity. First, a power plant makes it. Second, a step-up transformer raises the voltage. Third, high-voltage transmission lines carry it a long way. Transmission lines are the tall power lines that carry electricity long distances.

Fourth, a substation lowers the voltage. A big data center often has its own substation on or near the site. Fifth, power equipment inside the data center gets the electricity ready for the servers.

The voltage is lowered in stages. A stage is one step in a process that has several steps. Each stage lowers the voltage a step closer to what the equipment can use.

Servers cannot use power-line electricity just as it arrives. Power equipment in the data center lowers the voltage and keeps it steady. It also changes AC into DC for

the servers. DC means direct current. In DC, the current flows in only one direction. Some power equipment also keeps the servers running for a short time if the grid power stops.

Staying safe

The voltage in transmission lines and substations is high enough to kill. Electricity at that voltage can even jump through the air to a person who gets too close. That is why substations have a fence and warning signs. The fence keeps people a safe distance from the equipment.

Never climb a substation fence or a power pole, even to get a ball. Tell an adult. They can call the power company. Stay far away from any fallen power line. Never try to experiment with wall outlets or power lines.

Key ideas

- A transformer changes the voltage of AC electricity. It does not make electricity.
- High voltage lets power lines use low current, so less energy is lost as heat.
- Substations connect, control and protect power lines. Many also change the voltage.
- The voltage is lowered in stages before the data center equipment uses it.
- Stay away from substations and power lines.

Words to know

AC (alternating current): Current that flips direction back and forth many times each second.

DC (direct current): Current that flows in only one direction.

Breaker: A safety device that opens by itself to stop current when there is a problem.

Coil: Wire wrapped around and around in loops.

Current: How much electric charge flows through a wire each second.

Grid: The large network of power plants, power lines and substations.

Stage: One step in a process that has several steps.

Substation: A fenced site that connects, controls and protects power lines.

Switch: A device workers open or close to connect or disconnect a line.

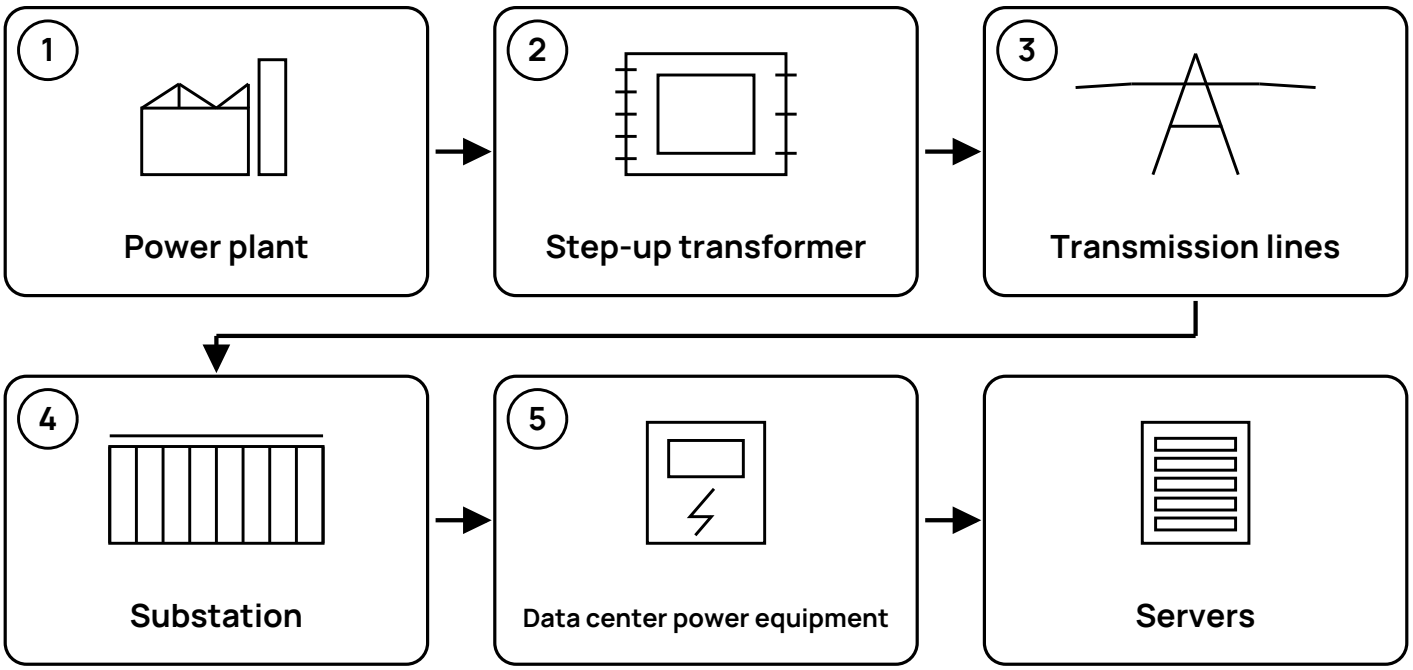
Transformer: A machine that changes the voltage of AC electricity.

Transmission lines: The tall power lines that carry electricity long distances.

Voltage: The electric push that moves charge through a wire.

The path to the servers

This diagram shows the trip described in 'The trip to a data center'.



From the step-up transformer to the substation, very high voltage lets the current stay low. From the substation on, the voltage is lowered in stages.

Not shown: switches, breakers and the safety fence at the substation (see 'Substations' and 'Staying safe'). Real systems have more steps than this simple diagram.

Original source

Hut 8 begins substation work at $399M Beacon Point data center near Robstown

Texas Construction Hub · November 5, 2026

https://www.texasconstructionhub.com/stories/hut8-beacon-point-substation-construction

For teachers and parents: scan the code to print the article or read it aloud. Students do not need the article to answer the questions.

About the news story

On November 5, 2026, Texas Construction Hub reported that the company Hut 8 has started building a substation at its Beacon Point AI data center campus near Robstown, Texas. The company shared the update with its business results on November 4. Workers are also building foundations and underground utilities for the first phase. The campus has an agreement with the utility AEP Texas for up to 1,000 megawatts of electricity. The first data hall is planned for the third quarter of 2027.