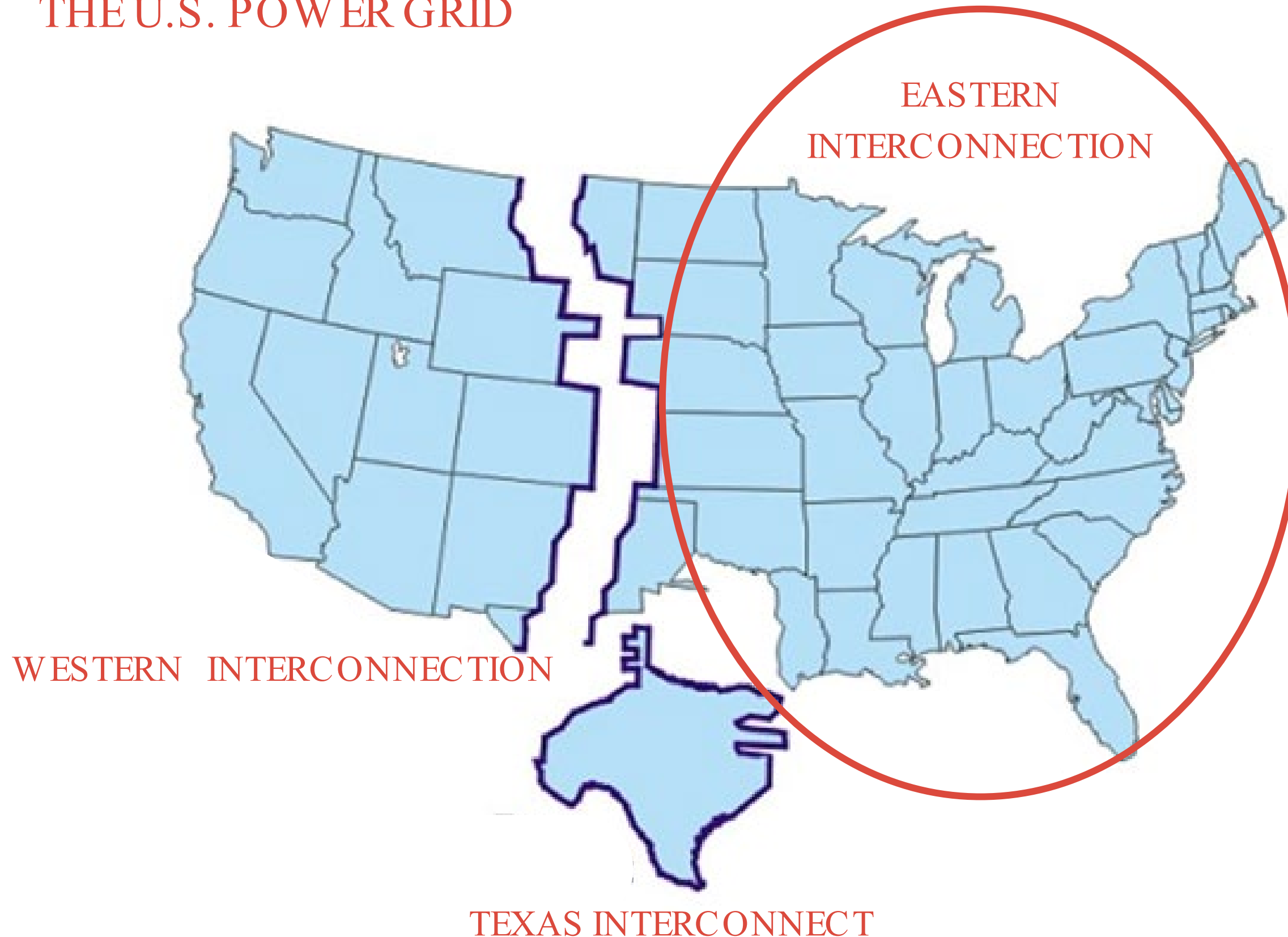


ELECTRICITY RELIABILITY: UNDERSTANDING WHY OHIO IS AT RISK OF ROLLING BLACKOUTS

September 25, 2024

The Electric Grid: How Power Gets to You

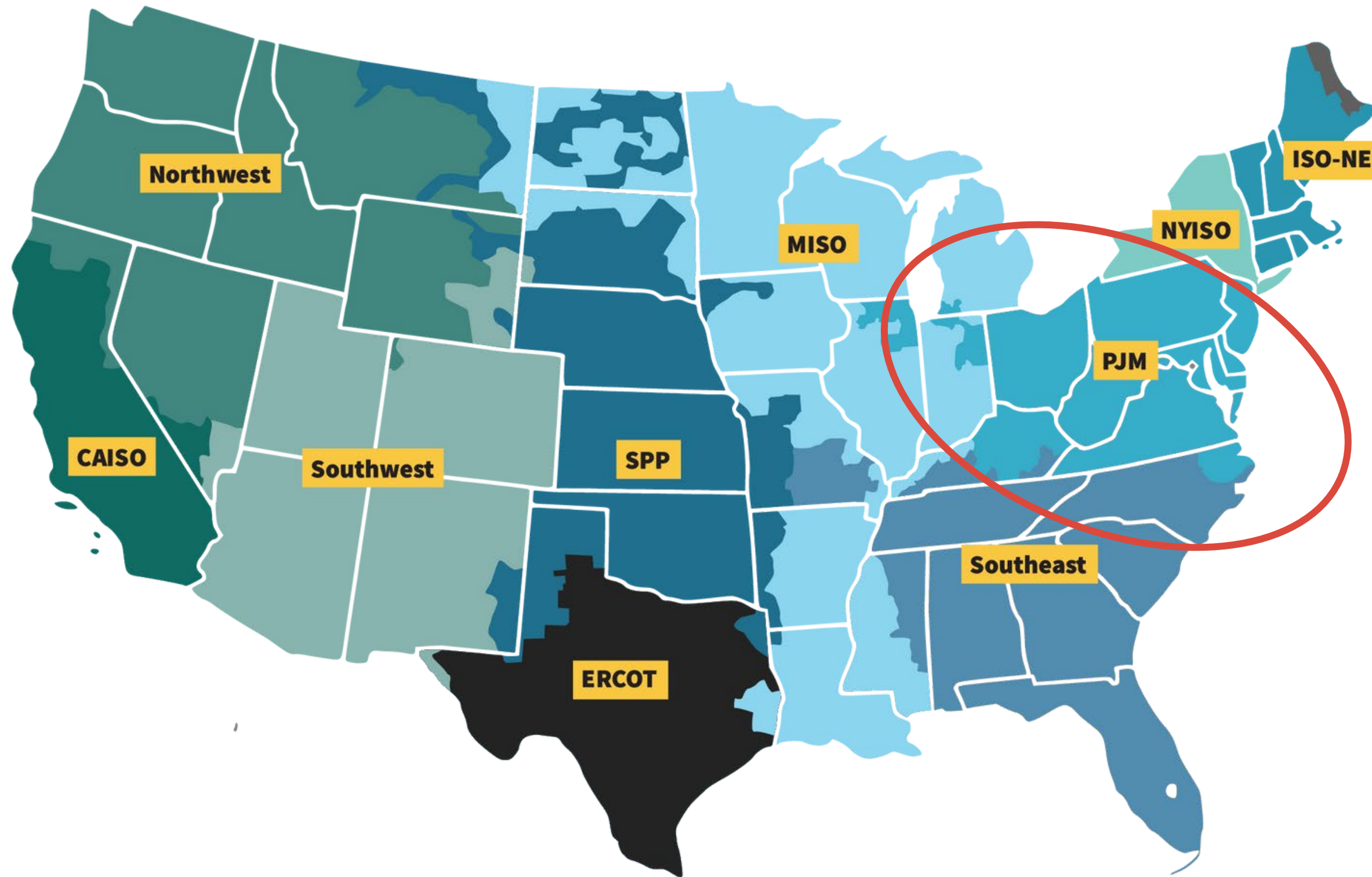
THE U.S. POWER GRID



The U.S. has 3 major electric grids which are independent of each other. Ohio is in the Eastern Interconnection.

- EASTERN INTERCONNECTION
- WESTERN INTERCONNECTION
- TEXAS INTERCONNECT

The Electric Grid: How Power Gets to You



Within the major grids, are 10 smaller regional grids.
Ohio is within PJM,
a regional transmission organization responsible for balancing supply and demand within the multi-state grid.

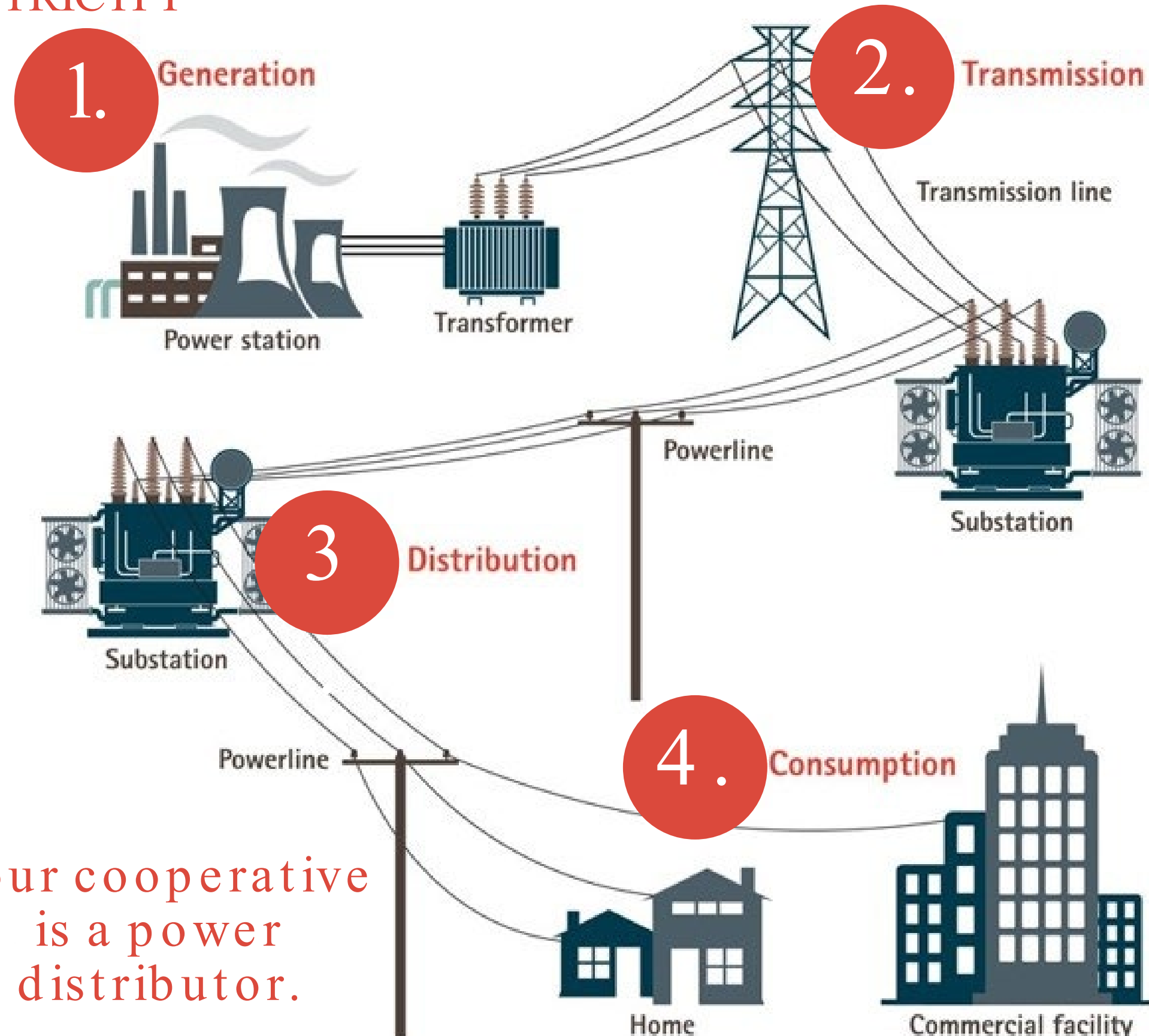
The Electric Grid - How Power Gets to You

THE FLOW OF ELECTRICITY

Buckeye Power generates and transmits power to all of Ohio's Electric Cooperatives, and it is owned by the cooperatives and their members who consume the electricity.

Your cooperative is a power distributor.

You are a member owner of the cooperative.

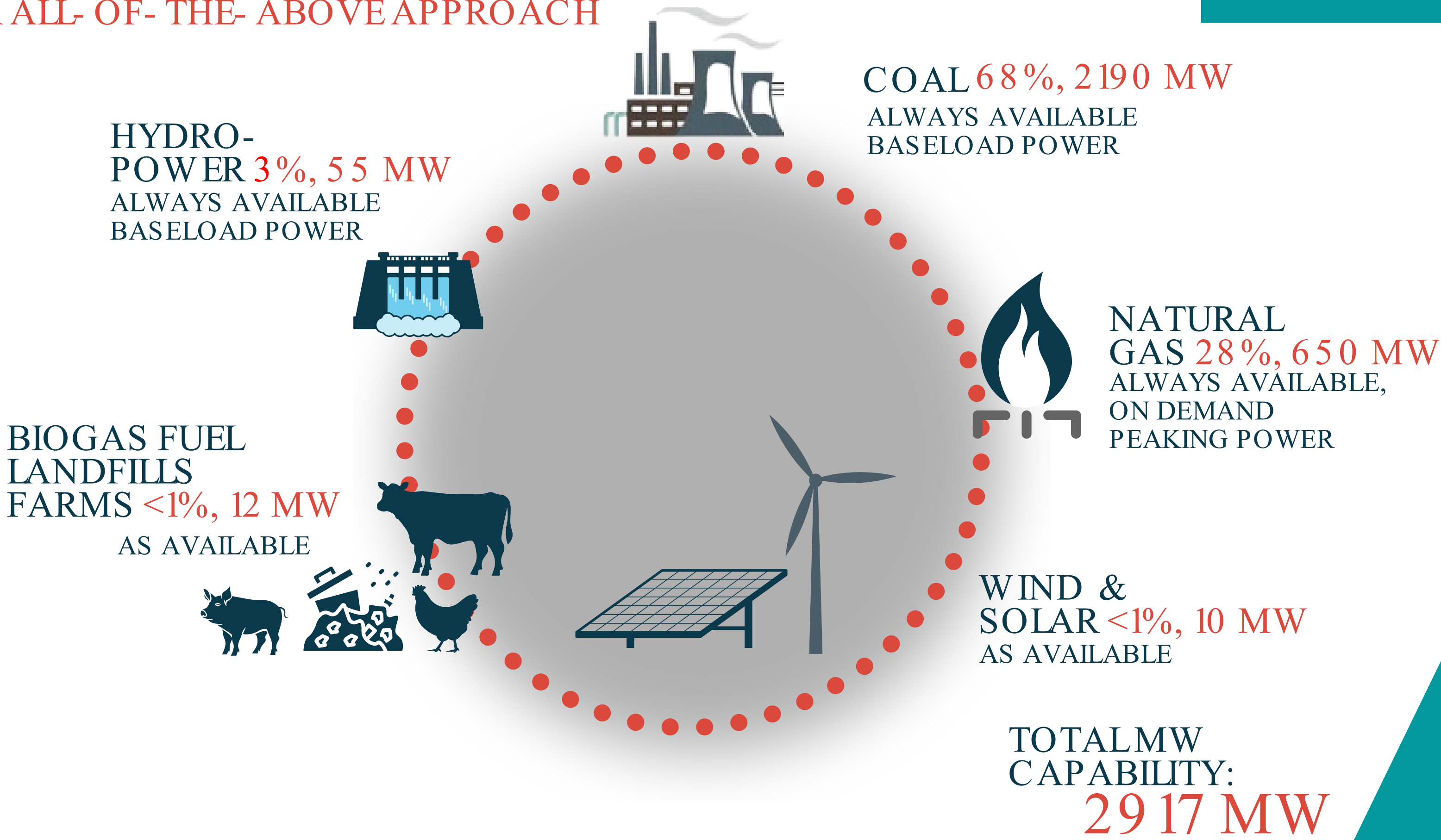


Transformers lower the voltage of electricity coming from the plant. Transmission lines and substations help to deliver the electricity to consumers.

Some transmission lines are shared by electric utilities and co-ops.

The Electric Grid: How Power Gets to You

OUR ALL-OF-THE-ABOVE APPROACH



The Electric Grid - Why Coal Plants are Closing

EPA REGULATIONS FORCING COAL PLANTS TO CLOSE

OHIO HAD **21**
COAL POWER
PLANTS IN 2009.

TODAY THERE ARE
4 INCLUDING
CO-OP-OWNED
CARDINAL PLANT.



EPA regulations caused many coal plants to close due to high costs to continue operation and comply with regulations.

Buckeye Power spent over a billion \$ to reduce emissions and comply with regulations.

Cardinal Power Plant is one of the cleanest coal plants in the world.

The Electric Grid - Reliability is at Risk

NERC AND WINTER RELIABILITY ASSESSMENTS

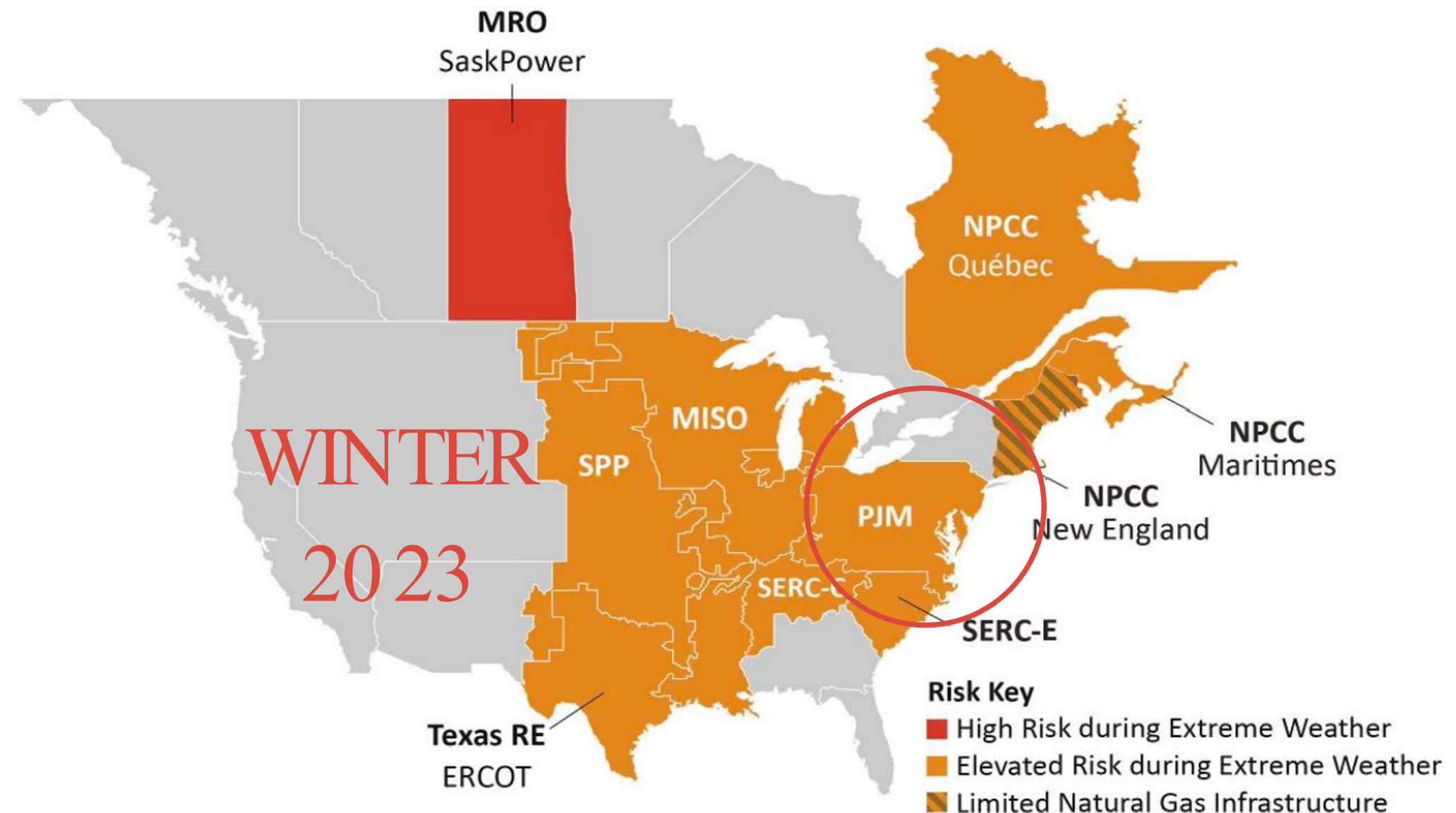
WHAT IS NERC?

The North American Electric Reliability Corporation (NERC) is a not-for-profit organization that aims to reduce risks to the security and reliability of the grid in the United States, Canada, and part of Mexico.

WINTER 2023-2024 RELIABILITY ASSESSMENT

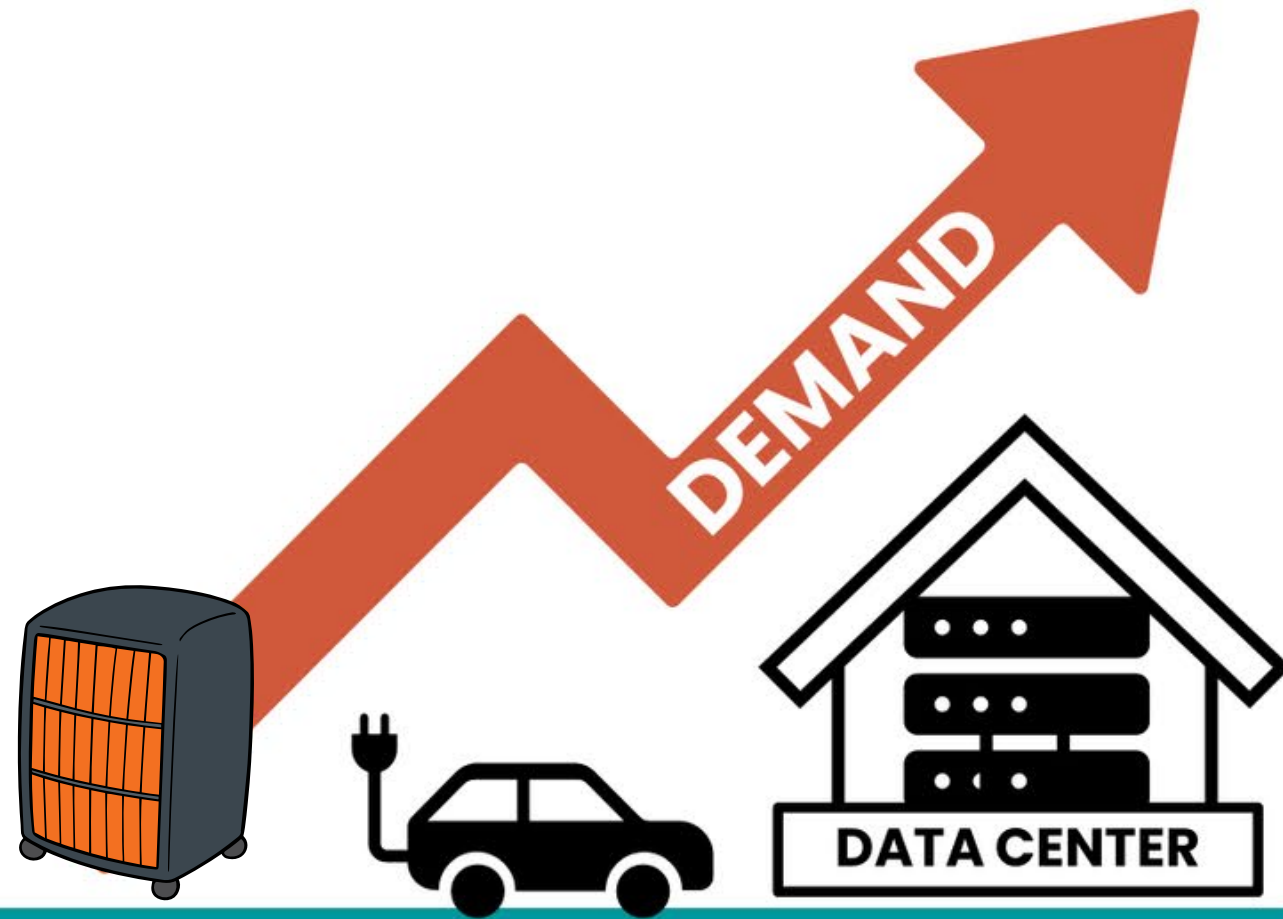
PJM:

- A severe cold weather event can lead to energy emergencies
- Forecasted peak demand has risen while resources have changed little
- PJM has adequate resources for normal winter conditions; however, their generators are vulnerable to derates and outages in extreme conditions



The Electric Grid—Risk is Rising

DEMAND FOR POWER IS INCREASING—SUPPLY DECREASING



Demand for electricity is increasing due to the electrification of transportation, increase in data centers in the state, and many other daily life uses of electricity.



The supply of reliable, baseload generation electricity in Ohio, and the rest of the country, is decreasing due to increasing regulations on coal, natural gas plants that produce power.

The Electric Grid—Risk is Rising

WHEN WE ARE AT GREATEST RISK OF FORCED OUTAGES



A/C TO STAY COOL...



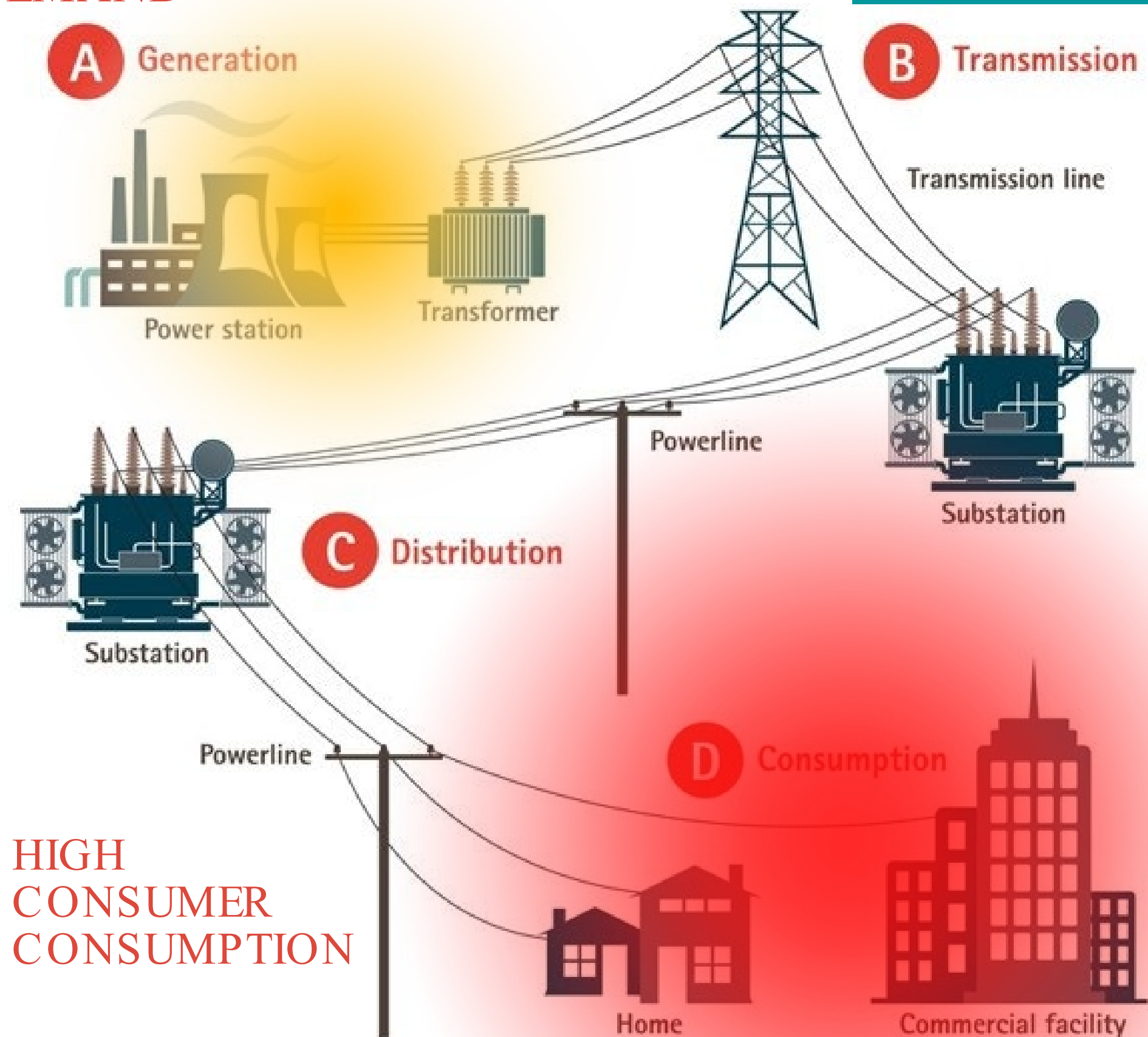
HEAT TO STAY WARM...

The Electric Grid - Demand Exceeds Supply

BALANCING POWER SUPPLY AND DEMAND

Demand for electricity during extreme cold weather (or hot) could exceed available supply due to a shortfall in power generation within PJM.

PJM will take steps to restore balance to prevent an electric grid collapse.

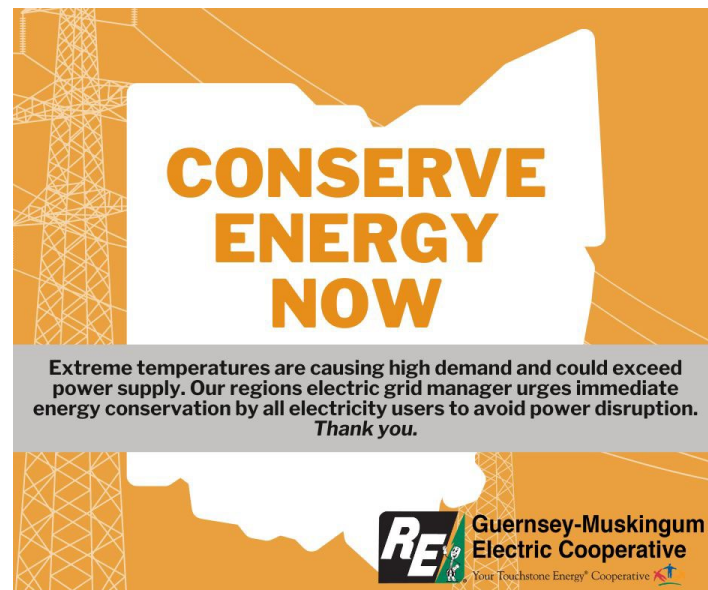


The Electric Grid - Energy Conservation

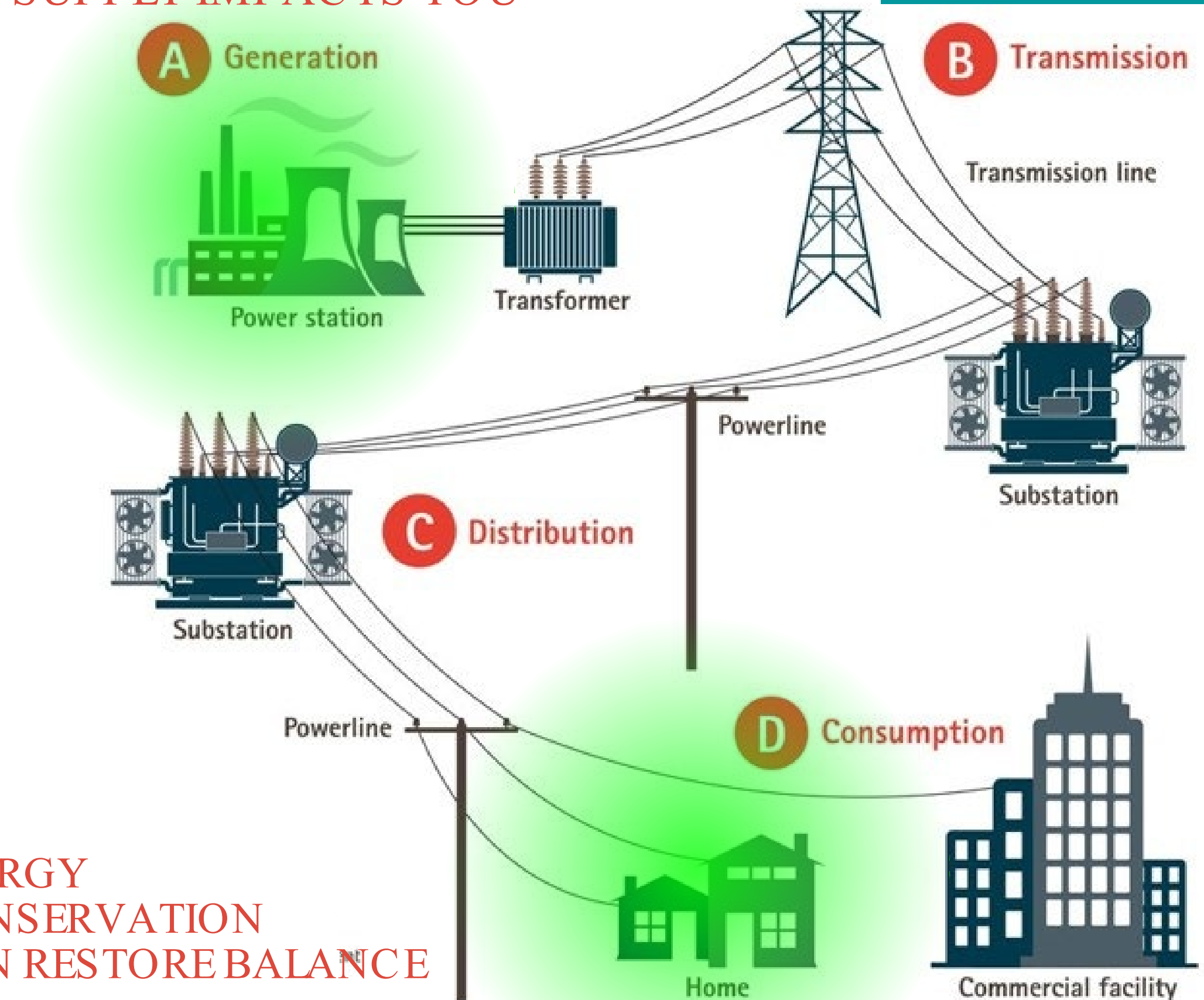
HOW BALANCING DEMAND AND SUPPLY IMPACTS YOU

PJM will FIRST tell power generators to ask consumers to conserve energy.

GMEC will relay that information on Facebook and SmartHub.



ENERGY
CONSERVATION
CAN RESTORE BALANCE

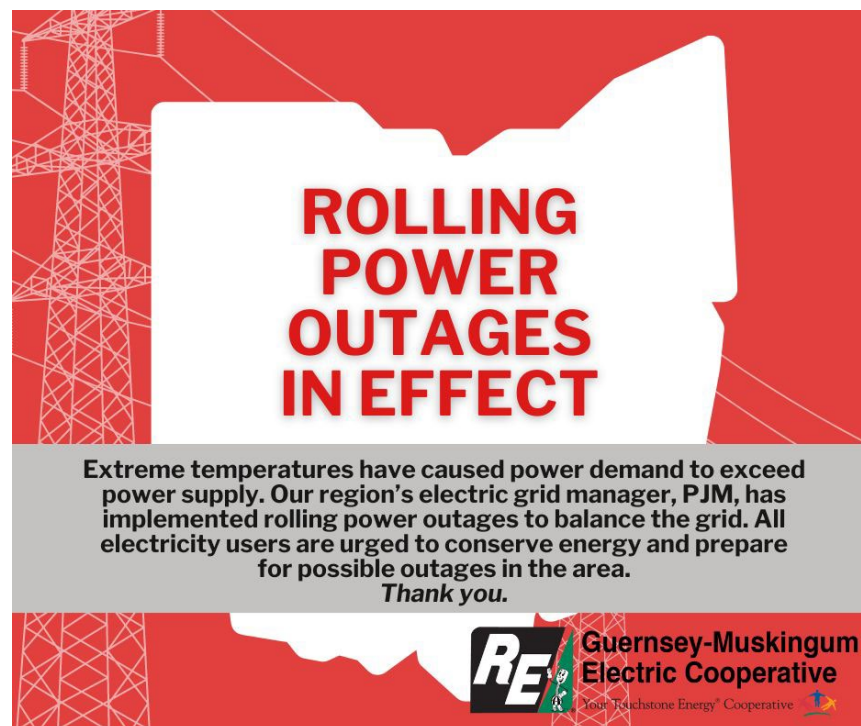


The Electric Grid - Temporary Rolling Power Outages

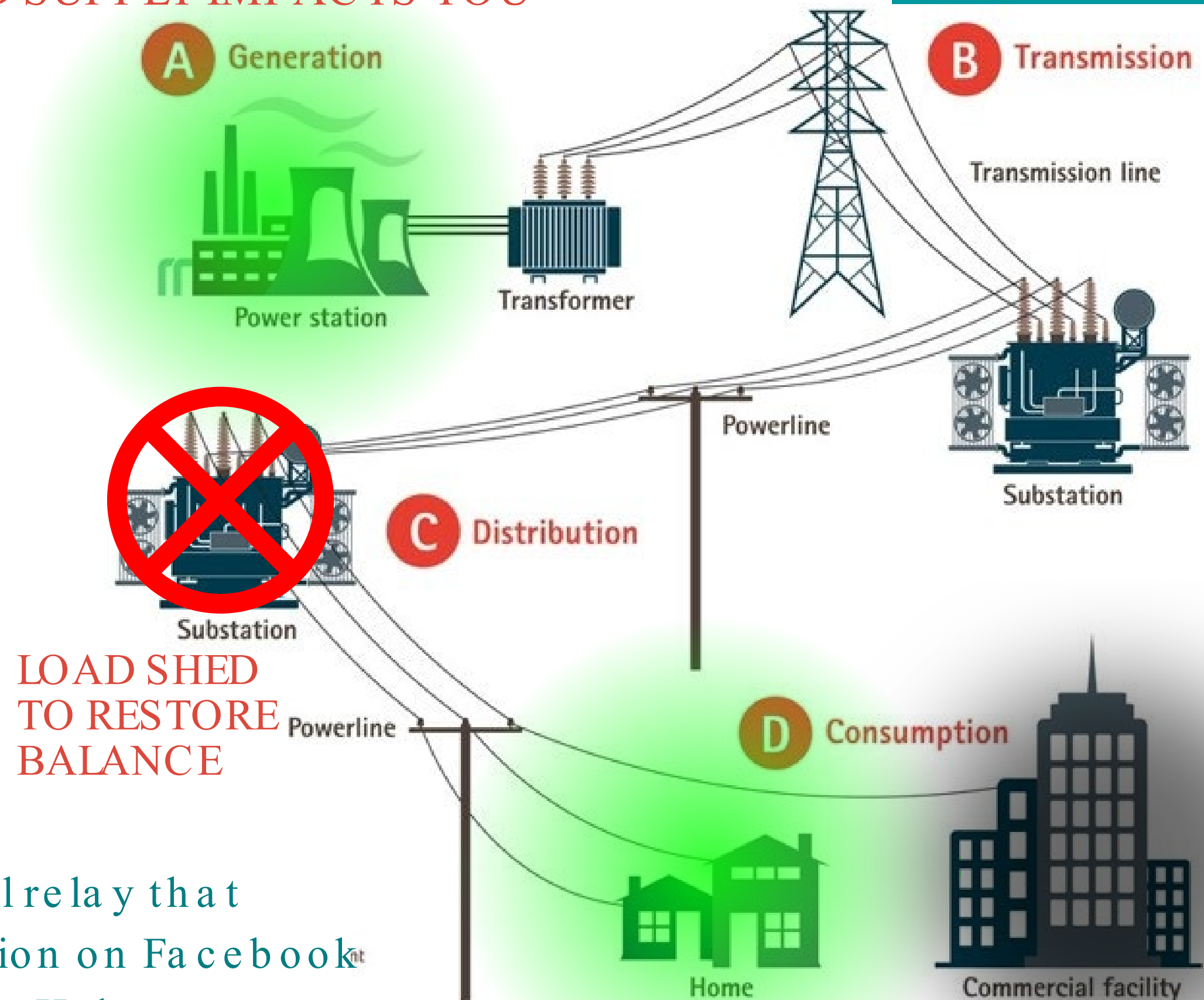
HOW BALANCING DEMAND AND SUPPLY IMPACTS YOU

If conservation doesn't restore balance, PJM could implement mandatory load shed, or temporary rolling power outages to achieve balance.

Load shed prevents more damaging grid collapse.



GMEC will relay that information on Facebook and SmartHub.



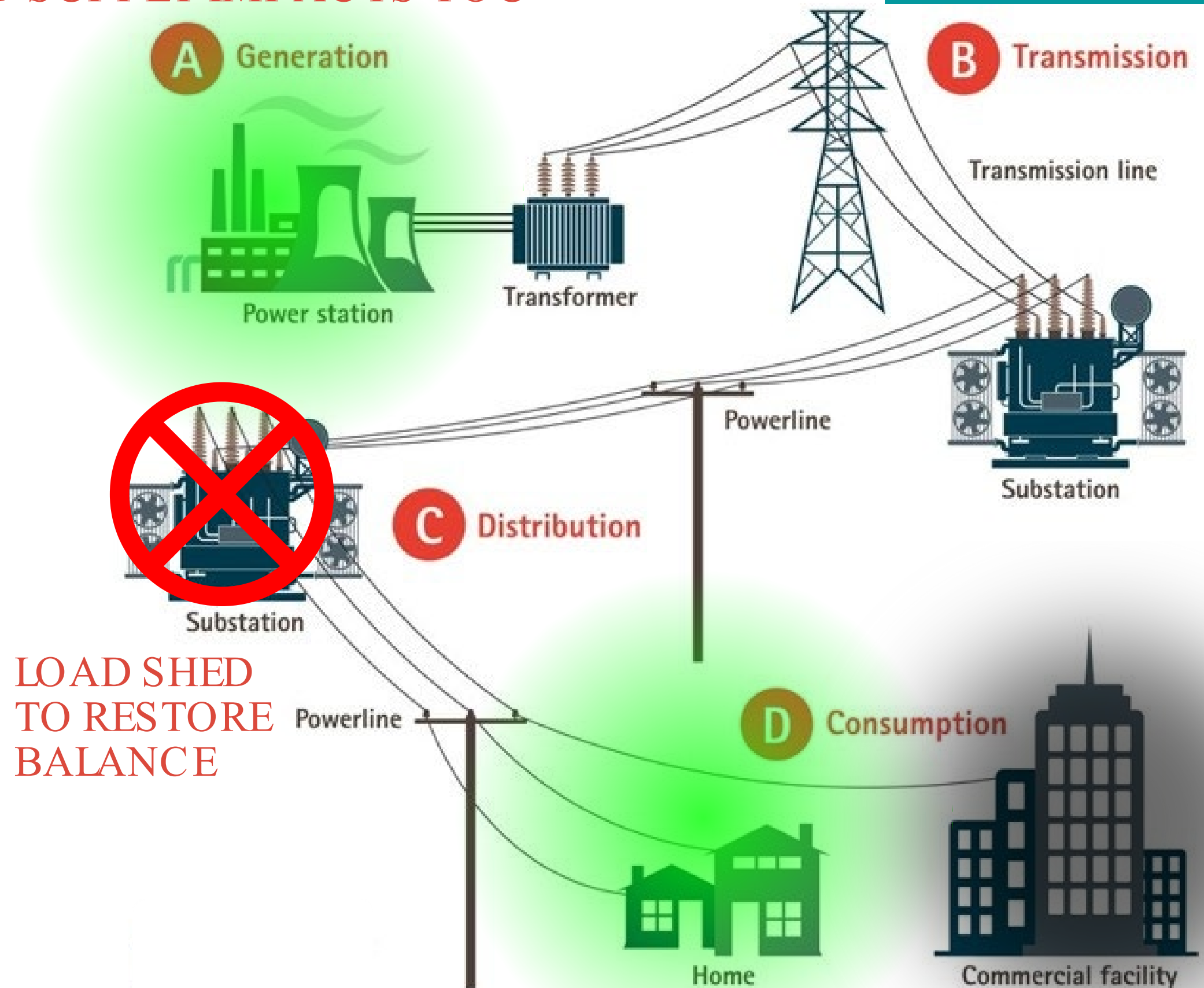
The Electric Grid - What is Load Shed?

HOW BALANCING DEMAND AND SUPPLY IMPACTS YOU

Buckeye Power, GMEC, and all utilities in the state rely upon communication and direction from PJM.

Load shed orders are a last resort and will likely be issued with short notice, less than 2 hours, based on expected conditions.

There is no guarantee PJM or GMEC will be able to provide notice



The Electric Grid - Understanding Load Shed

HOW BALANCING DEMAND AND SUPPLY IMPACTS YOU

Public shelters, hospitals, schools and life-vital electricity consumers will be prioritized for power, while some large load businesses and homes may have no power.

The rolling outage is intended to be temporary- 30 minutes to 1-hour and will rotate among the region until balance is restored. Length of outage is dependent on the event.



The Electric Grid - Safety is Priority

WHAT CAN I DO NOW TO BE PREPARED FOR ROLLING POWER OUTAGES?

HAVE A POWER OUTAGE PLAN

ALTERNATIVE SOURCE OF POWER

Consider the purchase and installation of a gas-powered generator to supply power to essential equipment and appliances.

ESSENTIAL MEDICAL EQUIPMENT

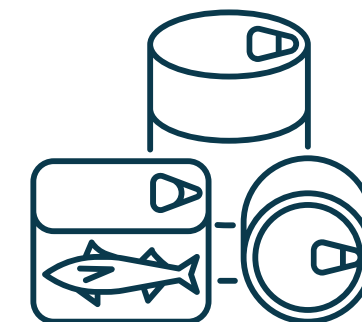
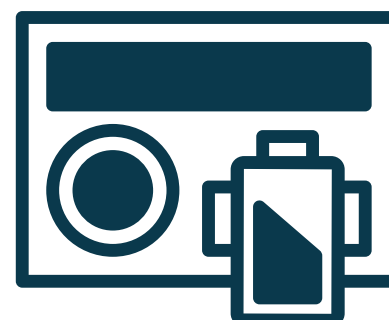
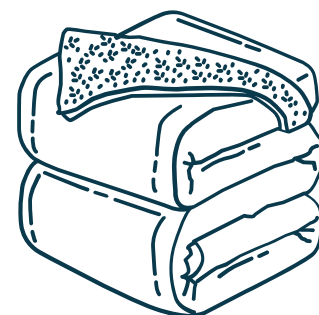
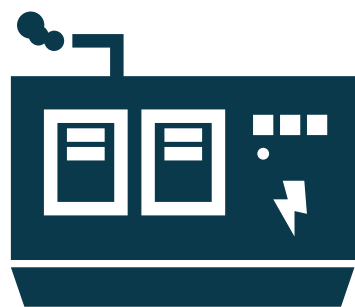
For people that require a medical device, have an alternative power source.

A GO-KIT WITH SAFETY ESSENTIALS

Prepare a kit with water, flashlights, battery-operated radio, cellphone charging devices for your car, cellphone backup charging devices, blankets, non-perishable food.

ALTERNATIVE LOCATION

Identify a second location out of the impacted area where you could relocate temporarily and instruct all people ahead of time of this alternate location.



ROLLING POWER OUTAGES MEMBER COMMUNICATIONS PLAN

September 25, 2024

Rolling Power Outages: Member Communications

Methods:

SmartHub

- Email
- Text
- Call (IVR)

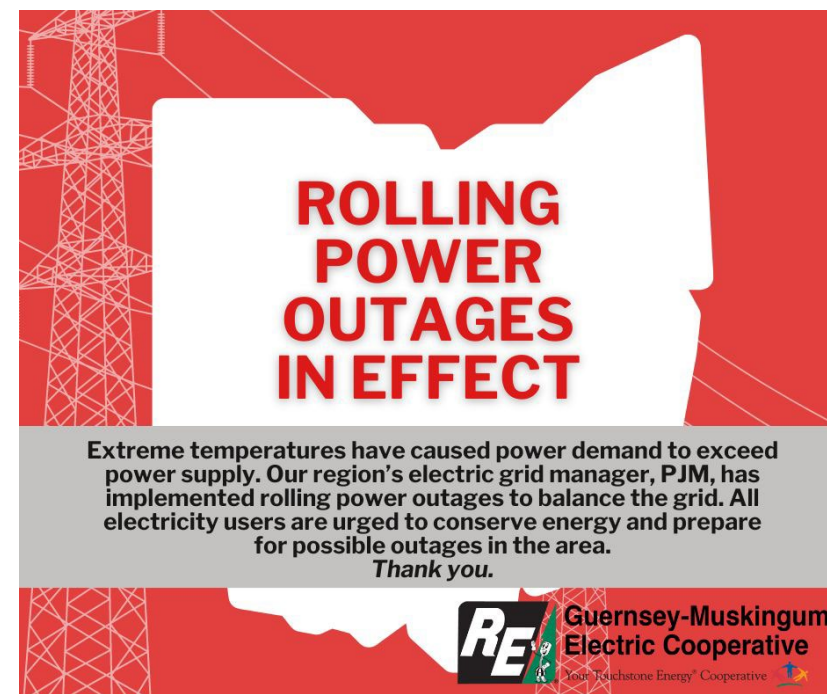
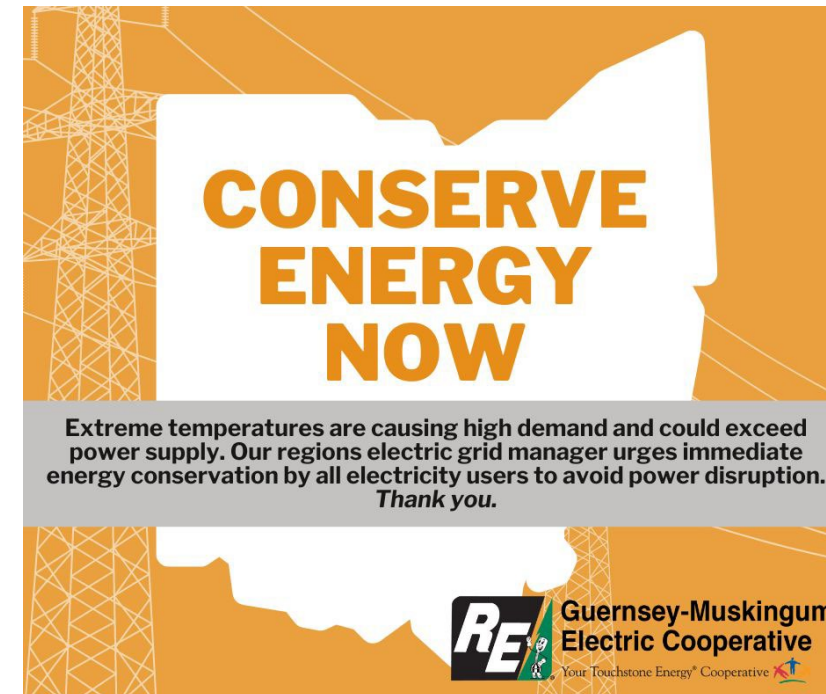
Facebook

Website

Radio

Rolling Power Outages: Member Communications

Facebook:
Posts to our
Facebook page will
Be made as quickly
as possible once
we receive
notification from
PJM.



Rolling Power Outages: Member Communications

SmartHub:

Members must sign up then add and verify contact methods to receive any of the notifications.

- Email
- Text
- Call (IVR)



Rolling Power Outages: Member Communications

Website:

- Graphics that are being used on our Facebook page will also appear on our website, www.gmenergy.com.
- There is a FAQ page on our website that answers basic questions and will be updated

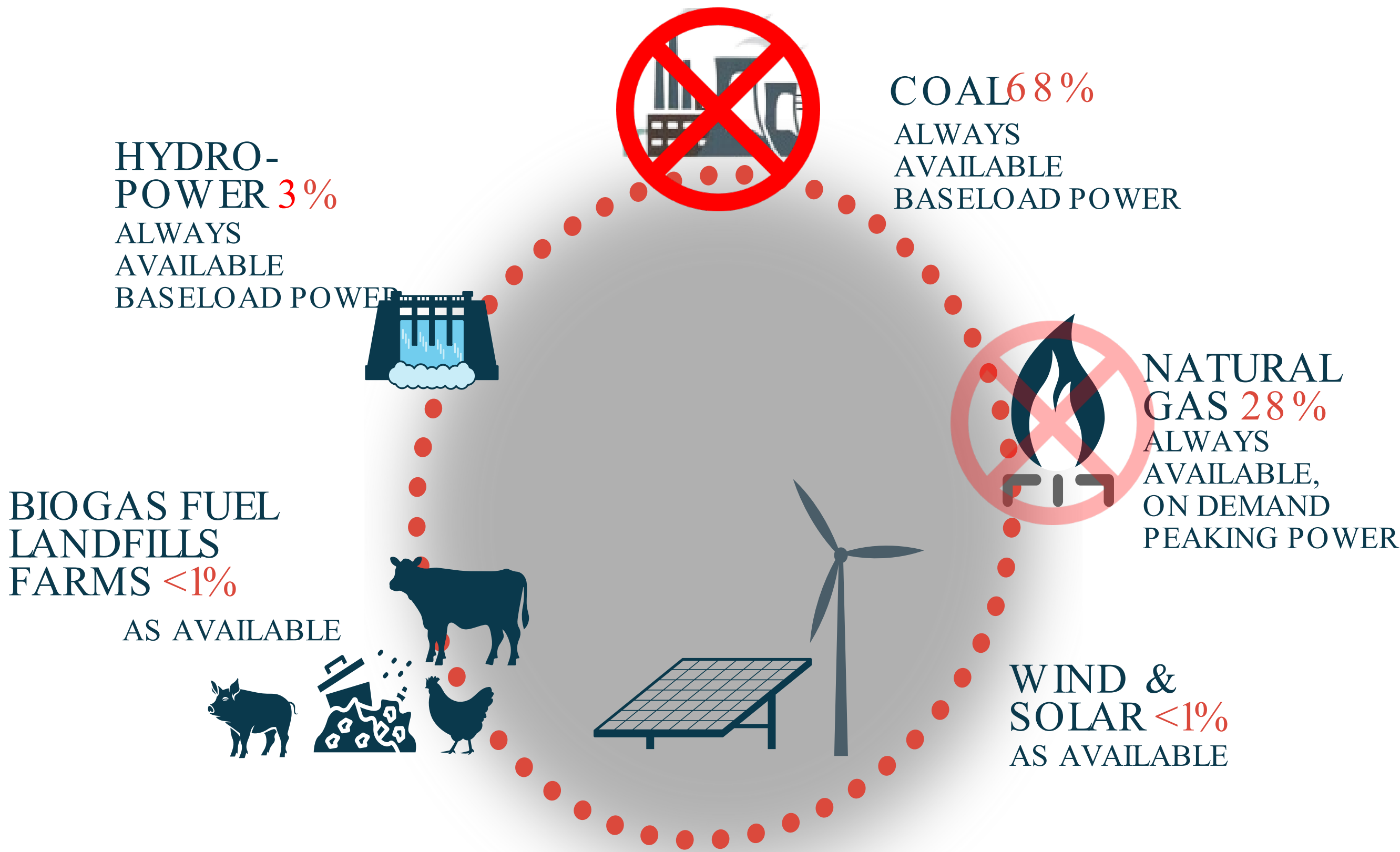
Rolling Power Outages: Member Communications

Radio:

- We are currently working with local radio stations to do news releases in addition to paid advertising time to broadcast announcements regarding rolling power outages.

The Electric Grid: Risk is Getting Greater

NEW 2024 EPA POWER PLANT RULES



New EPA rules on power plant greenhouse gas emissions, if implemented, will greatly increase risk to electricity reliability.

Coal plants for generation will cease to exist and natural gas plants are the EPA's next target.

The Electric Grid: Risk is Getting Greater

WHAT CAN YOU DO?



**Voices for
Cooperative
Power**



**America's Electric
Cooperatives | PAC**



**Guernsey-Muskingum
Electric Cooperative**

Your Touchstone Energy® Cooperative 

QUESTIONS ?

**OHIO'S ELECTRIC
COOPERATIVES**

Your Touchstone Energy® Cooperatives 