CONNECTIONS

SPECIAL EDITION
SUMMER 2021

NBU®
NEW BRAUNFELS
UTILITIES

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MISSION

Enhancing the quality of our community by providing innovative essential services.

VISION

New Braunfels Utilities (NBU) will be recognized as a trusted community partner dedicated to excellence in service.

CORE VALUES

Safety, Integrity, Team, and Stewardship.

NBU NEW BRAUNFELS UTILITIES

MESSAGE FROM THE CEO

Dear Friends:

Summer is here and I am enthusiastic about the possibilities of returning to a sense of normalcy. No matter how you plan to embrace the summer season, one thing you can count on is that New Braunfels Utilities (NBU) will be here - powering the things that energize our community.

Summer, no doubt, is an exciting time and planning for the season's high temperatures is essential. That is why we have dedicated this publication to spotlighting NBU's electric line of business.

We want you to know, as an NBU customer, that you can take advantage of the many tools NBU offers to manage utility costs, help conserve energy - especially on days when extreme temperatures place a strain on the electric grid, and learn how your utility compares when it comes to bringing you the most reliable electric services. To address one of the leading causes of outages, NBU implemented a robust tree-trimming program. The program promotes a more reliable system and fewer outages. Learn more on page 12.

At NBU, we have a motto that is worn on our uniforms, hats, and displayed on our walls: "Safety is My Responsibility." We take those words seriously and want to share information with you that will help to keep you safe.

This publication also spotlights where your energy comes from and how it is delivered to you. You will find the details on pages 5 and 18. Cost of energy is important, and how NBU manages those costs is explained within these pages. I encourage you to take the time to read each article.

I wish you a healthy and safe summer, and that you find some relaxing time to enjoy our beautiful community we call home!

Ian Taylor
Chief Executive Officer

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Summer Outlook

One thing is certain about Texas summers: It gets hot. Really hot.

"We began this year with La Niña, which ended at the end of May," said Manager of Conservation and Customer Solutions, Andrew Cummings.

The National Oceanic and Atmospheric Administration (NOAA) also predicts an above-average hurricane season. Heat plus humidity equals more air conditioning.

New Braunfels Utilities plans for the dog days of summer (usually mid-July to mid-September) by reminding customers to set thermostats at 78 degrees Fahrenheit and implement Energy Action Days – public appeals to action on those days when energy demand levels are at their highest. The thermostat is the most impactful device in the house during the summer season.

Simply adjusting the thermostat by two degrees can mean a six to 14 percent increase in energy usage.

The Electric Reliability Council of Texas (ERCOT) Seasonal Assessment of Resource Adequacy for the ERCOT Region Report issued on May 6, 2021, anticipates summer demand will peak at 77,144 Mega Watts. This would be a new system-wide peak demand for the Texas region. Based on information provided by generation owners to ERCOT, the grid operator anticipates there will be sufficient generation to meet summer energy demand.

For the first time in three years, the percentage of reserve power – 15.7 percent – is above the ERCOT target average of 13.75 percent. That percentage of margin could fluctuate depending on daily market conditions like the production of wind and solar resources.

When NBU declares an Energy Action Day, we are asking customers to voluntarily take specific steps to help conserve energy. One important reason to conserve on Energy Action Days is because NBU is monitoring conditions to target days when a Peak Demand Day will be forecasted. These Peak Demand Days are monitored by ERCOT and set costs for the next calendar year. Reducing energy usage during Energy Action Days will benefit and save customers money.

The Energy Action Day icon is pushed out to the local media outlets and through NBU social media channels as an instantly recognizable reminder to conserve energy and to help manage electric bills.

Learn more about Energy Action Days at **nbutexas.com/energy-action-days**. Electric Reliability Council of Texas provides snapshots of energy supply and demand, as well as tips and tools for energy conservation at ercot.com.

ENERGY ACTION DAY™

Some of the ways NBU customers can help include:

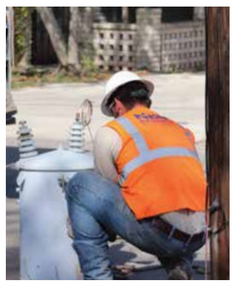
- Set the thermostat two to three degrees higher than usual.
- Follow the 4x4 rule – When leaving the house for more than four hours, turn thermostat up four degrees.
- Eat a bagged lunch outside or prepare sandwiches for supper (instead of using the oven).
- Limit use of large appliances to mornings or after 7:00 p.m.
- Use the microwave, which uses one-third less energy, instead of the oven.
- Use ceiling fans to feel up to four to six degrees cooler.
- Turn off the lights.
- Turn off pool pumps, or schedule it to run in the early morning or during the overnight hours.

ABOUT THE COVER PHOTO:

An evening at the New Braunfels Little League Field on Loop 337 in New Braunfels reminds us how electricity powers and enhances our time with family and friends.

Photo Credit: Matt Chase, Matthew Chase Photography

SAIDI OFFERS INSIGHT INTO NBU'S STRONG PERFORMANCE METRICS



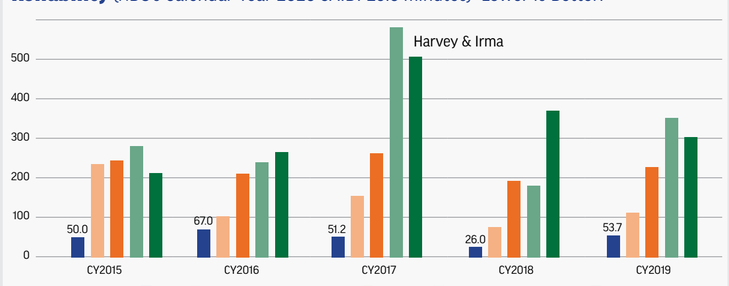
Reliability. That is what SAIDI is all about.

The power industry acronym stands for **System Average Interruption Duration Index (SAIDI).** In the case of this industry-standard reliability metric, a low bar means good results.

"*The lower, the better,*" said NBU Electric Services Chief Engineer Gregory Thomas. "*The SAIDI number represents the average number of customer minutes out of power over the course of one year. A common electric utility/industry goal, although not always achieved, is 52.56 minutes. Our target is a number that meets, or is less than, that goal.*"

"*An average of 52.56 minutes translates to 99.99 percent uptime. That average for NBU customers in 2020 was 25.3 minutes, well below the SAIDI average. Two factors go into keeping that average low.*"

Reliability (NBU's Calendar Year 2020 SAIDI 25.3 minutes) Lower is Better!



Source: U.S. Energy Information Administration https://www.eia.gov/electricity/data/eia861/

"*Factor one is the number of outages that an NBU customer will sustain. Factor two is the average restoration time. You can cut down on the number of outages, or get to them more quickly.*"

These factors become critical when weather is involved. "*Whether we are at nine degrees or 109 degrees, power becomes crucial,*" Thomas added.

While the official industry metrics from the severe winter storm may not be available until 2022, NBU already has numbers showing that its customers fared much better than some of its neighbors in other Texas distribution utility areas.

"*We had outages; however, the vast majority of those were sustained due to the ERCOT (Electric Reliability Council of Texas) not having sufficient generation to withstand the storm. Rotating outages were mandated by ERCOT,*" Thomas explained.

Then, when the lights would come back on, customers would hurry to heat their homes and run appliances to catch up. In some instances, this resulted in subsequent outages.

Continued on page 5.

"*New Braunfels Utilities' electric crews were working 12-hour shifts and remained on task to respond to outages and restore power. We only had one tree-related outage, a direct result of NBU's proactive tree-trimming program,*" Thomas said. "*NBU managed 620 open-close cycles, on 34 out of 42 circuits.*" *An open operation consists of breaking the circuit path at the substation, which de-energizes the circuit and curtails all customer load on the circuit. A close operation consists of re-making the circuit path, which re-energizes the circuit and restores all customer load on the circuit.*"

Even with the dictated rotating outages, NBU was prepared to address the situation.

"*The rotations began early Monday morning, February 15, and ended at 11:55 p.m. Wednesday, February 17,*" Thomas explained. "*We had no customers without service once the ERCOT mandated rotating outages ended. It was still snowing pretty hard on Thursday, February 18, and all NBU customers had power.*"

Governor Greg Abbot recently signed legislation designed to improve the Texas power grid, increase awareness among consumers about electricity shortages, and change the governance structure of ERCOT.

Renewable Energy - A Low Price Alternative

When purchasing power, the NBU power supply team focuses on two goals:

1. Reduce energy market volatility.

2. Maintain competitive costs.

New Braunfels Utilities' renewable resources help to meet these two goals with the added benefit of meeting our core value of stewardship.

Keeping a diversified renewable energy portfolio is another way that NBU focuses on affordable and reliable energy.

The most recent addition to NBU's renewable portfolio is solar. The energy produced from NBU's solar resources matches NBU's load profile during peak demand periods – meaning that as the sun and temperatures rise, they are helping to offset electric demand for cooling when the energy is needed most.

"*Our power portfolio is approaching 30 percent renewable energy,*" said Power Supply Manager Rebekah Crouch. "*This helps to balance the portfolio. The rest of our energy comes from market purchase.*"

New Braunfels Utilities' renewable energy breaks down into 18 percent solar; ten percent wind; one percent hydroelectric; and one percent biogas.

Having different types of renewable energy can help balance and offset each other. As an example, wind generation begins to fall off just as solar energy begins to peak.

"*The renewable energy is also diversified geographically, helping to mitigate risk,*" said Chief Administrative Officer David Hubbard. It reduces our risk to susceptibility from a storm effect.

The Javelina Wind Energy Center, 20 miles east of Laredo, supplies the wind generation. Two suppliers – one in Pecos County near Ft. Stockton and the other in Borden County near Lamesa – provide the solar energy. The Canyon Hydroelectric Plant in Sattler provides the hydroelectric power. The Waste Management Mesquite Creek Landfill in Comal County supplies the biogas.

While NBU is not yet seeing a high demand from customers for solar powered homes, rebates are offered for those who are interested. Powering a home with solar energy is complex, and NBU encourages customers who are interested in solar energy to email **solarengineering@nbutexas.com** or call **830.608.8951**.

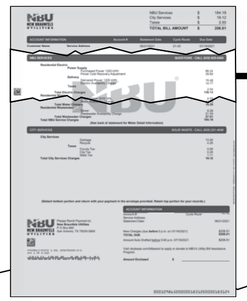
An added benefit of renewable energy is emissions reduction. In 2020, NBU's renewable resources offset 153,768 metric tons of carbon dioxide. The equivalent is comparable to a full year of electricity use from 26,034 homes.

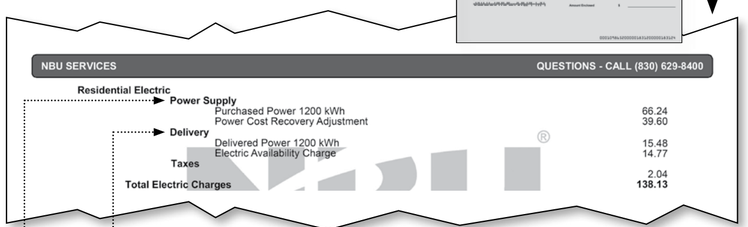
Type	Location	NBU Portfolio%
Hydro	Canyon Dam	1%
Wind	Webb County	10%
Solar	Borden County	12%
Solar	Pecos County	6%
BioGas	New Braunfels	1%
Total		**30%**

Electric Bill Explanation

New Braunfels Utilities is a nonprofit, community owned entity. Rates are designed simply to cover costs and have no built-in profit.

Each line item on an electric bill corresponds to the path electricity takes to get from generator to meter. The path starts at a generator, which primarily takes the form of coal, natural gas, nuclear, wind, solar, and hydro. After the energy leaves the generator, it passes through a transmission network (large power lines), then a distribution network (smaller lines typically underground or overhead along a street) and then finally to your home or business.





Power Supply

Purchased Power
This is the cost of generation and transmission and is charged on a per kilowatt-hour rate. Rather than owning power plants, NBU buys power from the ERCOT market through a hedging program, which is designed to reduce volatility and deliver a competitive price. Transmission costs are set by the state each year and are based on a community's peak electricity demand from the prior year. New Braunfels Utilities' Energy Action Days are designed in part to reduce these peaks to lower transmission costs.

Power Cost Recovery Adjustment (PCRA)
The ERCOT market is a highly volatile commodity market, as we all saw last February. The PCRA is designed to absorb volatility so customers have better predictability in their utility bill.

Delivery

Delivered Power
This is the cost of power distribution and is charged on a per kilowatt-hour rate. This covers the operation and maintenance of NBU's local distribution infrastructure including poles, wires, and transformers.

Electric Availability
This covers the fixed costs to maintain the electric account. The charge is fixed and independent of the amount of electricity used in a particular month.

***The percentage of an average NBU electric bill using 1200 kWh at current rates of $136.09** would break down to:**
11% Availability Charge 49% Purchased Power 11% Delivered Power 29% PCRF

**Averages differ according to the actual amount of power usage per customer.*
***Excludes City Taxes.*

NBU 2020 EMISSION REDUCTION FROM RENEWABLE ENERGY

In 2020, NBU produced 217,481.23 MWhs of renewable energy, offsetting 153,768 Metric Tons of Carbon Dioxide equivalent. Compared against NBU's total 1,749,515 MWh used in 2020, NBU had a carbon dioxide reduction of 107.1 lbs/MWh, which is comparable to offsetting the following:

CO_2 emissions from

26,034
Homes' electricity use for one year

356,005
Barrels of oil consumed

7,472
Garbage trucks of waste recycled instead of landfilled

52,302
Tons of waste recycled instead of landfilled

6,542,752
Trash bags of waste recycled instead of landfilled

0.039
Coal-fired power plants in one year

2,542,583
Tree seedlings grown for ten years

200,814
Acres of U.S. forest in one year

1,040
Acres of U.S. forest preserved from conversion to cropland in one year

ELECTRIC SAFETY: Respect the Power and Stay Away

When it comes to safety around power lines, assumptions can be deadly.

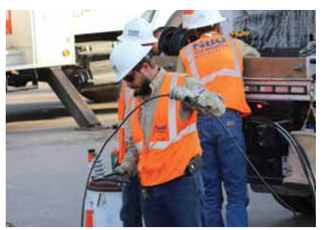
"If you see a downed line, do not go near it; and do not assume it is a communication line," said Director of Electric Services Gretchen Reuwer. *"Call 911 or the NBU control center, and they will dispatch NBU electric experts to investigate immediately."*

Downed power lines present both visible and unseen hazards. The lines can become re-energized at any moment or energize other objects on the ground nearby.

Whether crews are on the scene of a downed line or working on any number of projects, it is best to stay away from their work zone. This allows them to focus on the tasks at hand instead of being distracted by questions or people unintentionally putting themselves in harm's way.

"Every member of the crew has specific responsibilities," Reuwer explains. *"It isn't always apparent to others what is going on, but even the newest groundsmen are concentrating on an extremely important job. It might appear that they spend a lot of time staring up at the apprentice or journeyman in the bucket or on the pole, but they are actually watching them to ensure they can anticipate what tools they will need next as well as making sure their co-worker is following safety processes to avoid injury. Having several pairs of eyes observing from different angles helps keep our linemen safe."*

Keeping a distance from work zones also applies to drivers. The Texas Move Over/Slow Down law was extended to include utility vehicles in 2019 after Hurricane Harvey. It requires drivers to move over a lane or reduce their speed to 20 miles per hour below the posted speed limit when approaching an emergency vehicle, utility vehicles, recycling and garbage trucks, TxDOT vehicles, or tow truck stopped with flashing blue or amber lights on the roadside or shoulder.



In addition to staying away to let crews focus on the work at hand, there are several other ways to keep both residents and crews safe.

Transformers on ground-mounted concrete pads are called pad mount transformers, and are the equivalent to transformers on a pole. They should never be sat on and items should never be placed on top of them.

Mature plants should be planted at least four feet away from pad mount transformers. Plants can wear out the transformers over time, blocking air flow that helps cool the equipment, attracting fire ants and other insects that can cause damage, and limit the area of maneuverability for work crews.

Crews need enough room to maneuver safely around the transformers because there is always a chance of arcing. Arcing occurs when an electric current flows through the air, from one conductive point to another. As the energy travels through the air, the resulting flash may produce temperatures of over 10,000 degrees Fahrenheit or 5,537 degrees Celsius.

Vines or plants on poles and lines also pose a problem, as do signs stapled or nailed to poles. The staples and nails weaken the pole and also pose a risk to crew members who must climb those poles. Woodpeckers find these weak spots and do further damage to the poles.

When taking part in outdoor activities such as flying kites, look up first. Be aware of the location of power lines. If a kite is headed for a power line, let go of the kite string.

A top priority for NBU is that everyone, including crewmembers, arrives home safely, every day.

To report downed power lines or outages, call the NBU control center at **830.629.4NBU (4628)**.

Getting the Line on the Apprenticeship Program

Electrical Lineworkers are on the job every day powering our nation, operating, maintaining, and constructing a safe and reliable electric grid. They possess a mental toughness and commitment that is challenged at each jobsite. New Braunfels Utilities (NBU) is committed to training and preparing linemen to meet these challenges through its Apprenticeship program.

The NBU Electric Lineman Apprenticeship Program is certified by the Department of Labor and provides a four-year progressive training platform that includes both on-the-job training and classroom/online learning courses.

To be accepted into the Apprenticeship Program, applicants must have a high school diploma or GED, a current Class "A" Commercial Drivers License, completed a pole climbing course from a certified agency, and have one to three years of experience.

The curriculum includes courses from Northwest Lineman College. Students also can test into the Program if they come to NBU with previous experience.

Crispen Davis came to NBU with six months of contracting experience. He heard about the Apprenticeship Program from his wife. She had friends who had been in a similar program for another utility provider in California. Davis has been with NBU for four years and is currently a Level III Apprentice.

Crispen enjoys his work, but he knows it is not for everyone. Linemen are working in the elements, sometimes tackling jobs in extreme heat or cold. They normally carry 30 to 35 pounds of tools with them up a pole.

"They also carry the weight mentally," said Assistant Manager of Electric Operations Coby Henk. *"Twenty-four hours a day, every day of the year, they are among the first crews to respond when power is out."*

Safety is always the top priority. Crews hold meetings on the ground to review the work before and after every job.

You may see several crew members on the ground during an outage or when making repairs; each one is tasked with an important job. They are watching from all angles to make sure the linemen stay safe. Adjusting to different points of view, both physically and metaphorically, is critical to the safety of the linemen. Crew members work as a team.

"You must be able to get along with different personalities and know you can trust your team," Davis explained.

The Apprenticeship Program has been in existence at NBU for nearly ten years.

Several apprenticeship students have garnered awards at the Texas and International Lineman's Rodeos, including, Ryan Breeding, Michael Hardick, Austin Klaerner, and Bradley Dietert.

Learn more about the NBU Apprenticeship Program at **nbutexas.com/career-and-apprenticeship-opportunities**.

Bill Management Tools:

Customers can manage utility costs by adjusting utility use and practicing conservation techniques. New Braunfels Utilities offers comprehensive tools, tips, and resources to help customers understand and manage utility expenses.

- **Home Assessments**
- **After-Hours One-On-One Consultations**
- **Automated Threshold Alerts**
- **Bill Assistance Program**
- **Bill Calculator**
- **Budget Billing**
- **Conservation Tips**
- **Conservation Videos**
- **Utility Consumption Reports**
- **Rebates**
- **Track and View Interval Usage**
- **Understanding Your Bill**

Learn more at **nbutexas.com/conservation**, or call **830.629.8400**.

NBU NEW BRAUNFELS UTILITIES

COLLABORATIVE EFFORT HELPS NBU AND CUSTOMERS TO BE PREPARED FOR STORMY WEATHER

Being prepared for storms is part of New Braunfels Utilities' (NBU) standard operating procedure, and NBU resources allow customers to be prepared as well.

Even before the thunderclouds roll in, much of NBU's storm preparation work has already taken place.

It begins with the integrity of the system which provides a solid foundation. Add to that an exceptional tree trimming program, highly responsive crews, preventive maintenance that includes regular pole inspections, and a high-tech control center, and the result is a comprehensive plan with the main mission of keeping the lights on.

As part of an overall maintenance plan, the Resiliency Crew was added this past year with the purpose of finding problem areas and correcting those issues. Their jobs have included everything from changing out utility poles to replacing a blown arrester, the device that diverts lightning and limits the voltage to help protect equipment and prevent power outages.

The control center is manned 24-hours a day, every day. It serves as the central hub for maintaining and responding to incidents both on sunny days and stormy days.

"The systems control operator can tell us where to locate a fuse or a fault that may be between any two poles," said Electric Operations Manager Justin Green. *"The system is remarkably accurate, and it expedites troubleshooting."*

Control systems operators also respond to after-hour phone calls regarding outages. However, auto alerts and the updated outage viewer map have alleviated some of the need for those phone calls.

Auto alerts are sent to crews to notify them of where outages are occurring. Auto alerts are also sent to customers who opt in for the text-message alerts. Alerts include information about when the outage occurred and whether or not a crew has been assigned to the outage to restore power.

All of the information translates to the outage viewer map.

Anyone can click or tap the hexagon on the map from their smartphones or computers to learn more about reported outage locations and whether or not crews have already been assigned. In addition, they can access current weather conditions on the map, including radar.

To sign up for alerts, customers can **text NBU to 85700**. In order to receive alerts, customers must have their cell phone number associated with their account.

The system also provides emergency notifications to customers.

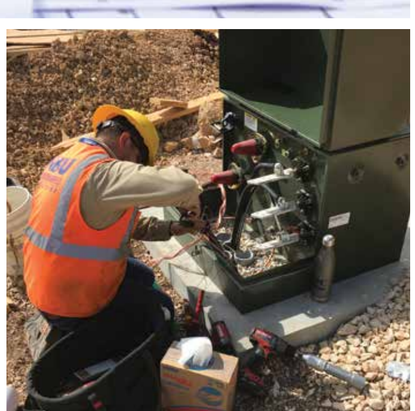
To access the updated outage viewer map, use this QR code or visit **nbutexas.com**.

Electric Line of Business Capital Improvement Projects Overview

New Braunfels Utilities (NBU) has an aggressive capital improvement projects plan to build and enhance necessary infrastructure over the next five years to meet the needs of a growing community. As New Braunfels and the NBU service territory continue to experience unprecedented growth, NBU has committed to more than $703 million in capital improvement projects. These improvements will ensure we are well prepared to meet the electric, water, and wastewater needs of our customers for decades to come. While there are 145 capital improvement projects in progress and/or being planned, the following page provides a high-level overview of NBU's electric line of business key projects.

Current Stats:

Megawatt-hours Sold (in Millions)	1,687
Active Electric Meters	44,362
Residential Electric Meters	38,754
Overhead Distribution	623.6 miles
Underground Distribution	345.7 miles
Number of substations	11
Poles (owned by NBU)	27,328
Streetlights	2,617
Pole mounted transformers for overhead distribution lines	8,221
Pad mounted transformers for underground distribution lines	12,082



Top Five Electric Capital Improvement Projects
Fiscal Year 2022

System Extensions / Meters / Transformers – $40.2M

These annual expenditures provide general on-site service and extensions to accommodate system growth. Between FY22 and FY26 NBU estimates electric meter connections to increase by a total of 30.3 percent. It is estimated that ten miles of distribution overhead primary will be added and one-hundred miles of underground distribution will be added. Specific System Extensions include those within Veramendi, Solms Landing, Mayfair, and many other developments.

Electric Aging Infrastructure and Pole Replacements – $17.0M

This pair of ongoing projects consists of replacing aging infrastructure within the system. Utility poles, overhead wire, pad-mounted equipment, and underground cable are included and bring NBU infrastructure up to current standards upon completion. In particular, newer and technologically superior materials are anticipated to have a greater lifespan and duty cycle. For example, new underground cable is designed for a minimum 40-year service life. Critical utility poles are designed for a minimum 80-year service life.

Kohlenberg Substation and Feeders – $7.3M

New Braunfels Utilities has identified the need for additional transformation and distribution feeder capacity along FM 1101, near Kohlenberg Road. Growth within the region includes that of Heatherfield subdivision, the Mayfield Development, and adjacent industrial load. The substation would require a 3.2 mile transmission extension, and a backside transmission extension at a later time in order to provide looped redundancy. Three distribution feeders would be constructed and energized initially. The substation is master planned for two power transformers and up to six distribution feeders.

Hueco Springs Substation and Feeders – $7.2M

To serve the anticipated growth of the Veramendi development, NBU has identified the need to construct an additional distribution substation along River Road, at Edwards Blvd. The proposed substation site is adjacent to an existing LCRA TSC looped transmission line, and will not require lengthy transmission extension. The substation would be master planned for two power transformers and up to six distribution feeders. It will also create several switching ties to other adjacent substations for system resiliency. The substation land site is procured.

E.C. Mornhinweg T2 and Feeders 21 and 22 – $4.8M

To serve new commercial and industrial growth along the northwest side of the IH-35 corridor from FM 1103 to Loop 337, NBU is planning to add a second Power Transformer at the E.C. Mornhinweg Substation. The substation 138kV side will be upgraded to a ring bus. Two new feeders are to be immediately extended from E.C. Mornhinweg, one to the east and one to the west, in order to serve new growth and provide increased distribution reliability and switching capacity to the region.


Vintage Oaks System Extension


T1/T2/T3 Feeders


Pole Maintenance


Sheriff's Posse Feeders


E.C. Mornhinweg Feeders

Tree Trimming Program Provides Customers with Power Reliability


Octavio Cortes

Weather related events, wildlife, and trees are among the most common causes of power outages. To deliver safe and reliable energy to its customers, NBU instituted a systematic and proven vegetation management program.

There is a definite art to what New Braunfels Utilities' Forester, Octavio Cortes, does for a living.

With 14 years of experience in tree trimming, Cortes knows what industry standard cuts will help direct tree growth safely away from utility lines.

It is a balancing act, but Cortes knows that a tree trim today can save everyone from headaches tomorrow.

"*We are diligent and intentional with our tree trimming program, especially over the last three years,*" said Director of Electric Services Gretchen Reuwer. In 2003, there was a widespread power outage throughout the Northeast and part of the Midwest that was ultimately attributed to foliage on electric lines. The lessons learned by regulating entities and utilities have helped NBU enhance its tree-trimming program and practices to ensure the utmost reliability and resiliency of its electric system.

In keeping with the standards set by the Federal Energy Regulatory Commission, NBU trims eight feet from the overhead primary system.

The February winter storm was a perfect example of why a good tree trimming program was necessary.

"*New Braunfels Utilities had one tree-related event during the winter storm; however, other utilities had a number of poles down due to trees,*" explained Assistant Manager of Electric Operations Coby Henk.

Working with customers, contractors, and an arborist, Cortes takes care to preserve trees and make them look their best while adhering to the industry standards—not always an easy task in the Texas Hill Country.

"*We do our best to ensure we trim the trees with care for the overall appearance and safety and resiliency for our customers,*" Cortes explained.

The NBU tree-trimming program is a prudent investment.

Maintaining public safety near energized lines and promoting a more reliable system are two clear benefits of NBU's tree-trimming program. In addition, proper vegetation management allows utility crews access to equipment to make repairs that results in faster power restoration.

It is all about preventive maintenance.

"*One good hit – when a tree takes down three to four poles – can cost $10,000 for poles, labor, and expenses,*" Reuwer explained.

It will take an estimated five years to service the entire 160 square mile NBU service territory.

Keeping trees trimmed also helps prevent squirrels and birds from wreaking havoc on lines, Henk explained. Henk emphasized that crews only trim what is needed and follow the best tree care procedures to ensure the health of the vegetation.

A customer can also request to have a tree removed, depending on its proximity to a line and several other factors. There is no cost to the customer if NBU removes the tree; although, NBU will leave the stump to be removed by the customer.

Customers can contact NBU with any questions about tree trimming or tree removal and learn more at **nbutexas.com/tree-trimming**.

"*We will come out and make an assessment at no cost,*" Reuwer said. "*Safety is NBU's top priority, and we want to help ensure that anyone who may be working in trees is not going to work in an energized situation.*"

Identify Savings Opportunities with a Virtual Performance Assessment

FREE Virtual Performance Assessments are conducted online or over the phone without staff visiting your home.

New Braunfels Utilities provides free virtual water, energy, and irrigation performance assessments to residential customers, upon request. Utility assessments are designed to analyze utility usage and identify ways to make successful and beneficial improvements.

PERFORMANCE ASSESSMENTS INCLUDE:

- Real-time and historical analysis of energy, indoor water, and irrigation water use and habits.
- Review of energy and water usage best management practices.
- Advice on improvements that can result in lower energy and water usage.
- Comparison of usages to subdivision and city averages.

For more details or to schedule a virtual assessment, call **830.608.8925** or email **conservation@nbutexas.com**.

NBU Planning Combats Unprecedented Energy Prices During Winter Storm

In addition to doing everything possible to heat homes and restore power during the winter storm, New Braunfels Utilities (NBU) was strategizing, working to combat a snowball of a different kind: rising energy prices.

New Braunfels Utilities was evaluating the best possible path to take; a path that would minimize the costs to customers and also protect the NBU bond rating.

"*During the winter storm, customers' energy use increased, in spite of the mandatory rotating outages, for every household in town,*" said Chief Administrative Officer David Hubbard. "*The weather event was unprecedented. Fortunately, New Braunfels Utilities purchases its power through what Standard and Poor's (S&P) describes as an advanced forward hedging program.*"

The Generation Cost Recovery Factor is a tool that can be used by electric utilities to recover costs due to the volatility in the energy market. It is a pass-through cost. Prices start at a minimum of -$250 per Megawatthour (MWh). During the storm, costs skyrocketed to $9,000/MWh, and stayed there for 72-hours.

New Braunfels Utilities was purchasing power at prices never before seen. Cost of power was estimated at $94 million for February - an additional five million more than the total budgeted cost of $88.5 million for the fiscal year.

As a not-for-profit, municipally owned utility, NBU does not mark up the cost of energy. Reserves were used to pay for power; however, was not enough to cover the full cost. Because minimizing the financial impact to the customer and keeping costs manageable is so important, NBU knew it needed to spread out the costs over time.

"*Some utilities have opted to spread the cost of the storm over a 30-year period; however, NBU plans to pay for it in one year,*" said Chief Financial Officer Dawn Schriewer. "*This is possible because prudent financial practices already in place allowed us to dip into our reserves.*"

In March of this year, Moody's assigned NBU Program Notes, Taxable Series 2021, with an Aa2 Bond Rating. Moody's Investor Service cited pre-storm reserves, along with prudent management practices, buffered the utility from large scale negative effects from the storm.

With the New Braunfels City Council's support, NBU was able to secure a $100 million capacity, two-year taxable note.

"*We drew down $50 million and still have $50 million capacity remaining. To get additional liquidity normally takes four months. We were able to secure additional liquidity in about three weeks,*" Schriewer explained.

The cost of recovery will be approximately a seven percent increase to the overall electric bill to the customer, compared to last year, but that recovery factor increase will slightly decrease during the summer months to ease the burden on customers.

"*We want to be financially responsible, and recovering from the financial impacts associated with the winter storm will allow NBU to continue that expectation,*" Schriewer said.

Even with the approximate seven percent increase, NBU still has some of the lowest electric rates in Texas.

NBU NEW BRAUNFELS UTILITIES

Summer Energy Conservation

Tips and information to help you save energy - and money - during the hot summer months.

Adjust the Thermostat REBATE OFFER *

- For maximum comfort and energy efficiency in your home, set your summer thermostat to 78 degrees.
- Save energy while you are away by installing a smart thermostat. Some new thermostats are also Wi-Fi enabled and can be controlled from your mobile devices.

Pool Pumps

- Nothing says fun like splashing around in a pool during the hot summer. Have fun and save energy by installing a timer on your swimming pool or hot tub pump to limit the amount of time it runs throughout the day.

Lights

- Increase your home comfort level by only turning on lights you need, especially during the late afternoon hours to save energy during the hottest part of the day.
- Making the switch to LED lights in the home can save energy not only because they use less electricity than traditional bulbs, but they also produce less heat!

Ovens

- To help conserve energy, prepare refreshing cold dishes, such as salads and sandwiches.
- No need to heat up the oven tonight! Keep the heat down and save time and use your microwave to heat those leftovers!

AC/Heating System REBATE OFFER *

- Replace the filters once a month – or more often if they get dirty.

Washer/Dryer REBATE OFFER *

- Line drying clothes will help increase energy efficiency and increase the comfort level of your home by not having the extra heat of the dryer warm the house.

Locate and Eliminate Leaks

- Cold air can escape your home through gaps or holes. Locate the leaks and seal them up.
- Caulk or weather stripping will seal gaps in doors and windows.

Adjust Your Water Heater

- Maximize the energy efficiency of your water heater by setting it to 120 degrees and install a water heater blanket.
- Extend the life of your home investments by reducing the temperature setting of your water heater to 120 degrees.
- Install a water heater timer around your schedule to reduce energy usage by preventing it from heating water when not in use.

General

- One of the easiest ways to reduce energy usage on a hot afternoon is to simply leave the house. Try a new restaurant, read a book at the library, or enjoy some time in the parks.
- Ceiling fans are a great way to increase the comfort of a room. Fans can make you feel up to four degrees cooler than the thermostat setting!

*** For a complete list of current rebates, visit nbutexas.com/rebates.**

Stay Informed

Text **NBU** to **85700*** to sign up for outage notifications and more.

You can report outages, check the status of device interruptions, and receive alerts for service information.

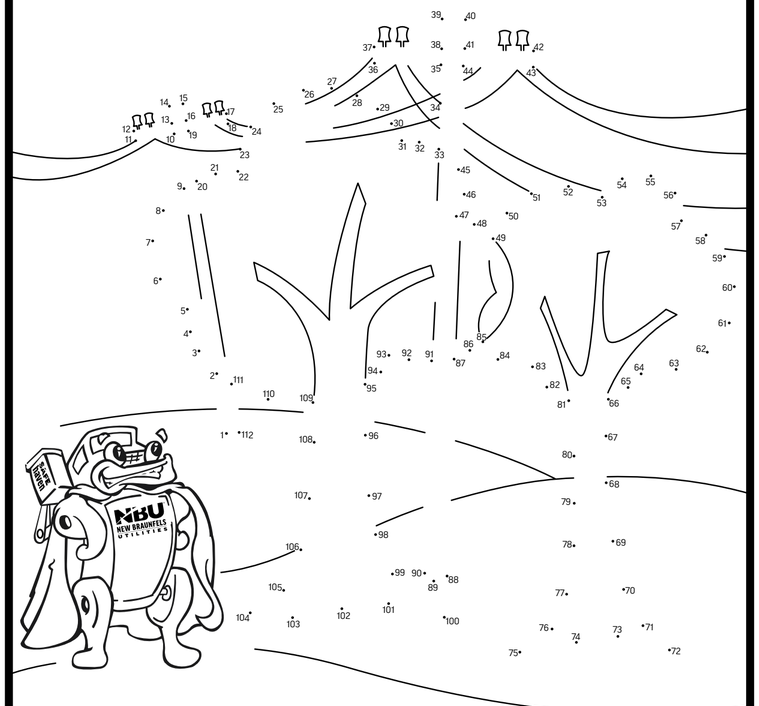
You can also call 830.629.8400 to begin receiving alerts and updates.

**Activation requires mobile number to be connected to the customer account. Standard data rates apply.*

Learn more at **nbutexas.com/report-an-outage.**

OUTDOOR SAFETY

Never Climb a Tree Near a Power Line.



NBU NEW BRAUNFELS UTILITIES

Budget Billing

Ease the impact of higher seasonal utility bills by spreading your bills into 11 equal monthly payments with the 12th month serving as the reconciling month.

The sensible way to handle your utility costs.

- Your New Braunfels Utilities (NBU) bills won't go up and down and you'll know exactly what your utility bill will be from month to month, making it easier to manage your budget.
- Over time, Budget Billing won't cost you any more than regular billing.

Learn more at **nbutexas.com/budget-billing.**

GENERATORS:

Crucial Safety for Backup Energy

A generator can be a helpful tool for keeping the freezer in the garage operating for a short-term period, or for serving as a backup energy supply. However, when used or wired incorrectly, or hooked up directly to the house, generators can cause major damage and present a serious risk of causing bodily harm.

Following safety precautions is critical.

"If hooked up incorrectly, generators can feed backwards through utility meters and transformers creating a dangerous high-voltage condition on nearby distribution lines. It is important to mitigate that scenario," said Electric Engineering Assistant Manager Jeffrey Morriss.

New Braunfels Utilities focuses on informing the public about generator safety because faulty wiring or improper hookup presents a risk not only to customers, but to NBU crews as well.

New Braunfels Utilities' crews are trained to treat lines as if they are still energized, even when power has been turned off. During the winter storm, NBU was made aware of an improper generator hookup when it showed up as an anomaly on NBU equipment readings.

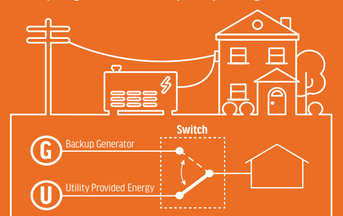
A generator should never be used to power a home or business by plugging it into a wall outlet or the main electrical panel.

Connecting a generator to the energized utility source will almost certainly result in serious injury and/or catastrophic damage to the generator. Connecting a generator to the home and turning off the main breaker is highly dangerous and prohibited by National Electrical Code.

A generator being used as a backup energy supply usually requires the expertise of an electrician who is aware of the proper codes, installment, and safety precautions.

Backup generator connection procedures include the customer's electrician working with NBU to follow the proper documentation, permits, connection requests, installation, inspection, and compliancy procedures.

New Braunfels Utilities recommends that automatic standby systems be configured to wait at least 60 seconds before transferring to standby power. This is because NBU's distribution feeders will automatically reclose multiple times when attempting to restore temporary outages.



Transfer switches used for alternating between normal and backup energy sources must be open transition, meaning they disconnect one source before connecting the other.

Portable generators from the big box stores are good for plugging in large appliances on a temporary basis. Generators powered by internal combustion engines should be kept clear of open windows and doors. Dangerous exhaust fumes can be drawn into the home if the generator is not in a well-ventilated, outdoor area.

Learn more about generator safety at **nbutexas.com/electric-connection-policy**.

Smart Thermostats Offer Convenience and Savings

Remember that feeling of dread that we have all experienced? We grab our coffee, feed the dog, and head out the door. Then, we remember! We forgot to turn up the thermostat.

Programmable and smart thermostats can relieve the anxiety of that "Oh, no!" moment, keep homes at the desired comfort level, and save customers money.

New Braunfels Utilities offers a rebate program for both types of thermostats.

"Programmable thermostats can be set on a five weekday, two weekend-day cycle," explained Andrew Cummings, Manager of Conservation and Customer Solutions. *"So if you sleep in on the weekends, you can program the thermostat to turn up later in the morning on the weekends."*

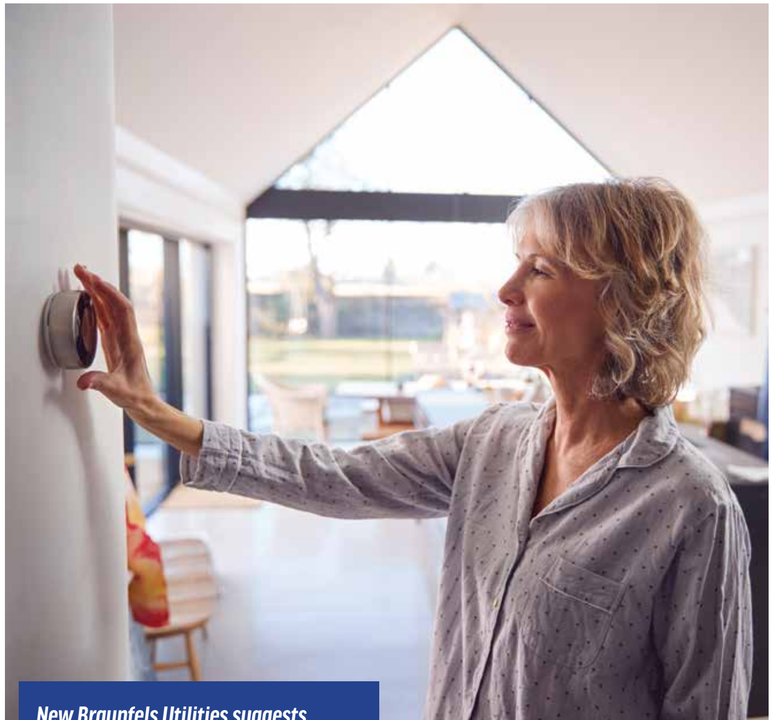
The programmable thermostats are very convenient, but they are not effective if they are not programmed.

Smart thermostats offer more options and are part of IoT, or the Internet of Things, Cummings explained.

The umbrella term refers to the connection of technology that allows for control of appliances, home heating/cooling, and more functions via smart phone or another device.

Some smart thermostats, like Nest, will automatically adjust the temperature in a home when everyone leaves for the day, or when motion sensors detect there has been no movement in the house for four hours or more. *"It adjusts to your patterns,"* Cummings said.

"How much customers can save with the two types of thermostats really depends on their usage and comfort levels," Cummings explained.



New Braunfels Utilities suggests keeping the thermostat set at 78 degrees Fahrenheit during the summer and at 68 degrees Fahrenheit during the winter. "This offers a balance of comfort and efficiency."

"Air conditioners can only bring an indoor temperature difference of about 20 degrees," Cummings said. *"The average high in the summertime is 98 degrees."*

If the thermostat is set below 78 degrees when 98 degrees outside, the air conditioner never stops running and is working overtime.

Some smart thermostats offer functions that include cooling down the house 30 minutes before everyone returns home for the day.

Nest, Ecobee, and Honeywell offer thermostats at several different price points and levels.

New Braunfels Utilities offers a one-time rebate of $85 to customers who install a smart thermostat and a one-time rebate of $45 to customers who install a programmable thermostat.

Learn more about the thermostat rebate program at **nbutexas.com/rebates.**

Energy Super Highway

Power is set up as one of the most advanced infrastructures in the world. The energy "super highway" includes layer upon layer of avenues for getting power from the point of generation to the point of use.

Those layers include:

- **Governor and Texas Legislature**
  Enacts legislation affecting the state's power infrastructure
- **PUC (Public Utility Commission of Texas)**
  Duties include regulating the state's electric utilities, implementing legislation, and offering customer assistance in resolving consumer complaints (accomplished through its oversight of ERCOT, the Electric Reliability Council of Texas)
- **ERCOT (a 501 (c) (4) nonprofit corporation):**
  - Monitors the flow of electric power across 90 percent of the state, approximately 26 million Texas customers
  - Serves as the independent, neutral third party responsible for the financial settlement of the state's electric market
  - Monitors the demands and availability of energy in the market
  - Ensures that the transmission services needed to move the energy between generation and load are available
- **LCRA (Lower Colorado River Authority)**
  New Braunfels Utilities' transmission service company that is responsible for maintaining the high voltage electric lines that flow into the New Braunfels area
- **New Braunfels Utilities substation**
  When high voltage energy arrives here (via high voltage breakers and switches), it is stepped down into a lower voltage energy
- **Large power transformer**
  Converts power to a more manageable voltage
- **Medium voltage breaker**
  Feeds power to the NBU distribution lines throughout the NBU service territory
- **Smaller transformer**
  Typically located at the street of a customer's property, converts power to an even more manageable voltage
- **Customer's home**
  What begins as almost pure lightning arrives at most homes in the form of 120 voltage energy

Managing cost of energy

A vital part in the flow of energy is cost. In addition to the cost of power, there is a cost to deliver that power. Energy costs can range anywhere from -$250 per Megawatt-hour to $9,000 per Megawatt-hour. Price fluctuations can occur in as little as five minutes.

Purchasing energy in one of the most volatile markets that exists today requires constant balancing and forecasting to ensure that NBU customers have enough energy at any given time.

"New Braunfels Utilities does not own power generation; instead, NBU purchases power from the Texas electric market," said Power Supply Manager Rebekah Crouch.

Texas power includes:

- 51 percent natural gas
- 24.8 percent wind
- 13.4 percent coal
- 4.9 percent nuclear
- 3.8 percent solar
- 1.9 percent hydro and biomass-fired units

New Braunfels Utilities has several long-term renewable power purchase agreements. In addition, NBU's power supply program provides ways to manage volatility and costs, and not be open to price fluctuations.

To hedge those volatile costs, NBU purchases power three to five years in advance.

New Braunfels Utilities blends the costs of power over time from the renewable Purchase Power Agreements and the forward energy market – meaning that going into any month, NBU has already purchased the majority of the power needed.

Much of the volatility is driven by weather. With weather changing constantly, NBU also buys power in the Day Ahead Market.

The Electric Reliability Council of Texas acts as the auctioneer as utility companies bid on energy. Power can also be purchased through the Real Time Market, which is more volatile. This type of power purchase is not an auction. Instead, ERCOT automatically buys and sells energy and assigns it to utilities.

New Braunfels Utilities utilizes all of these options to reduce volatility and to remain competitive in the market.

New Braunfels Utilities Electric Operations Team Spotlight

Resilient, reliable, ready. These words describe NBU's electric services and the team of men and women that work around the clock to provide those services. Their dedication and preparation are most evident during times of storms and disasters. Rain or shine, their work powers our community and helps enrich our lives.

Meet the team:

ON THE POLES FROM LEFT TO RIGHT:

Nick Woods, Cade Bearden, Ryan Breeding, Taylor Ross, Mike Hardick, Zach LaPrade, Bradley Dietert, Crispen Davis, Nate Wallsmith, and Karson Pennick.

ON THE TRUCK FROM LEFT TO RIGHT:

Roger Alexander, Ethan Zwicke, Klayton Rothrock, Colton Engelke, Levi Hidalgo, Dakota Folts, Gerald Lehman, Gus Aguilar, Kevin Seidel, Manuel Estrada, Steve Thies, Greg Williams, and John Espinoza.

ON THE GROUND FROM LEFT TO RIGHT:

Larry Boos, Austin Klaerner, Ryan Voges, Randy Willard, Victor Lopez, Cliff Hunter, Brenner Maggott, Keith Marsh, Justin Green, Rusty Bandel, Todd Kelley, Justin Burkhardt, Shamus Skrzycki, Demetri Sanchez, and Joseph Lopez.

NOT PHOTOGRAPHED:

Coby Henk, Adrian Tschoepe, Crissy Harris, Chris Gavigan, Eric Stolinski, Fabian Rameriz, Garrett Jones, Kayla Cruz, Mike Vineyard, Octavio Cortes, Ryan Jenkins, Tristan Tips, and Ty McFarlin.

Online Bill Calculator

New Braunfels Utilities customers can get a little help with forecasting utility bills.

New Braunfels Utilities recently introduced an online bill calculator to help take the guesswork out of predicting utility bills.

The online calculator provides customers with the opportunity to plug in anticipated usage or current usage, and will generate an estimate of what their bill will be based on usage inputs.

The calculator can compile electric, water, and wastewater usage estimates and reflects what a customer's bill would total for the month.

You will need to have your bill available to input required information. The estimate provided by the residential rate calculator will look very much like the bill you receive in the mail.

Learn more at **nbutexas.com/bill-calculator**, or call **830.629.8400**.

NBU® NEW BRAUNFELS UTILITIES