

Adaptable Grid Project

Topic Area 2: Smart Grid Grants (BIL section 40107)

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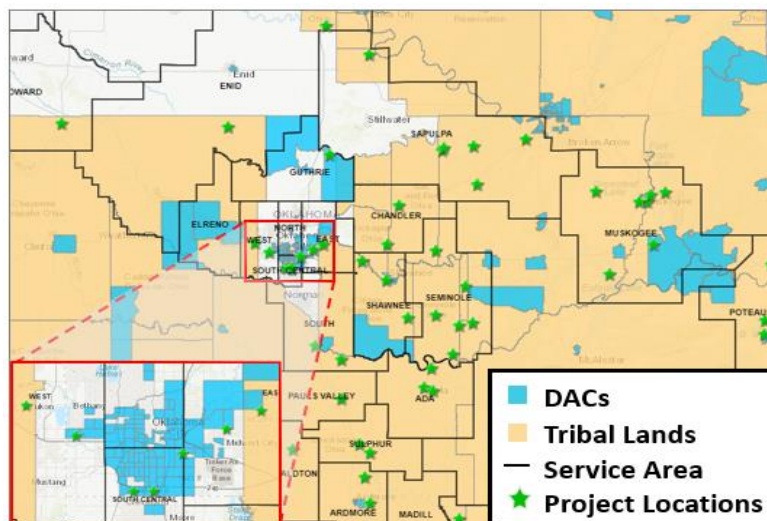


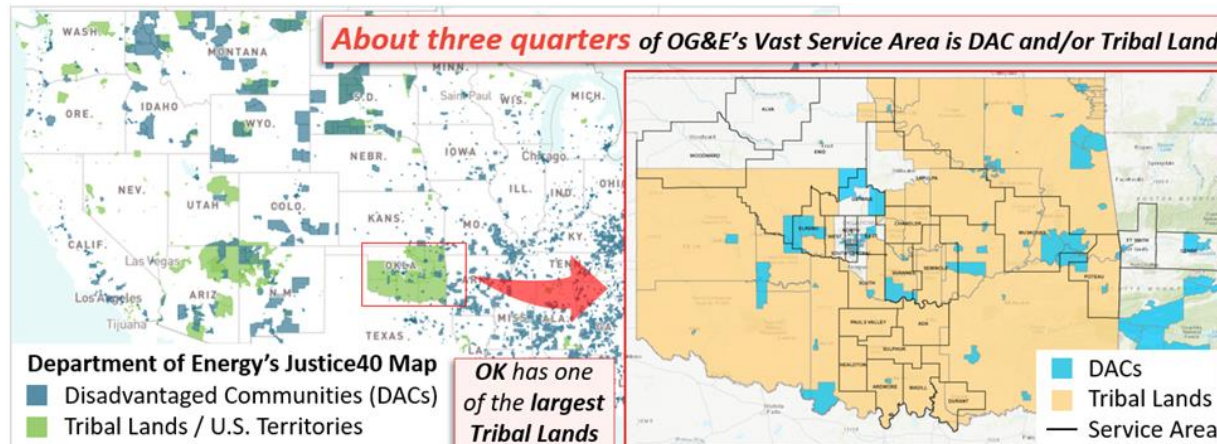
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Project Overview

Oklahoma Gas and Electric (OG&E) has a vast 30,000 square mile service area in Oklahoma and western Arkansas, serving approximately 887,000 customers across 19 Tribal tracts¹, 20 federally recognized tribes, and approximately 150 disadvantaged communities (DACs).



Delivering a Flexible and Resilient Grid to Benefit Customers with the Highest Energy Burden

To maximize impact, the Department of Energy (DOE) should fund OG&E's Adaptable Grid Project to reach one of the largest Tribal lands and many DACs and mitigate extreme weather impacts and climate risks unique to OG&E's service area. The partnership will create a Smart Grid platform that supports a Clean Energy Economy, accelerating the creation of well-paying jobs and promoting economic and environmental benefits. To make this future state a reality, OG&E proposes the Adaptable Grid Project founded on the following goals:

- 1** Incorporate smart devices to **anticipate and respond to grid variability and uncertain conditions** (e.g., EV charging, DERs, extreme weather, load growth)
- 2** **Stimulate economic growth** and advance federal, state, and local goals for energy transformation, specifically **in DACs and Tribal Lands**
- 3** **Improve system visibility with autonomous controls**, through utilization of software and sensors to enhance circuits with the lowest reliability metrics
- 4** Facilitate necessary Smart Grid investments while ensuring every effort is made to **minimize energy burden on OG&E customers**

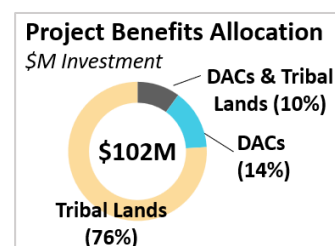
Once-in-a-Generation Opportunity to Deliver 100% of Project Benefits to DACs and Tribal Lands

OG&E has shared the DOE's vision for a Clean Energy Economy for more than a decade and has previously partnered with the DOE to bring its benefits to fruition. In the face of growing energy demand, OG&E engaged in a similar joint investment providing more than half of the \$335M cost to install over 823,000 smart meters across our service area. In 2009, OG&E successfully partnered with the DOE to execute the Smart Grid Integration Program that enrolled over 44,000 customers into our SmartHours Program. In more recent years, OG&E began to face additional pressures from worsening extreme weather impacts and aging infrastructure; we built off our previous Smart Grid success to introduce grid enhancement initiatives that included the deployment of grid modernization technologies that enabled automation capabilities, benefitting customers in both Arkansas and Oklahoma. OG&E understands we must continuously adapt to

¹ Tribal tracts per Justice40 served by OG&E: Cheyenne – Arapaho, Caddo – Wichita – Delaware, Chickasaw, Choctaw, Citizen Potawatomi Nation – Absentee Shawnee, Seminole, Creek / Seminole, Creek, Kickapoo, Iowa, Sac and Fox, Cherokee, Osage, Pawnee, Otoe – Missouria, Ponca, Kaw – Ponca, Kaw, Tonkawa

keep up with the rapidly changing expectations and dynamics of today's grid by laying a foundation for future capabilities to support electrification (e.g., electric industrial equipment, electric-resistance heating, gas-to-electric appliance conversion), electric vehicles (EVs), and distributed energy resources (DERs), while supporting load growth and combatting the effects of extreme weather.

OG&E's Adaptable Grid Project ("the Project") will combine \$50M in Federal funding with \$52M in cost-share provided by OG&E, with **100%** of investments benefiting DACs and/or Tribal lands. Project locations were selected by comparing SAIDI (System Average Interruption Duration Index) and momentary outages and prioritizing circuits in DACs and Tribal lands. Our internal preparedness and skilled workforce, coupled with our proactive community engagement and alignment to state, local, and Tribal energy goals, position OG&E to successfully execute the Project schedule.



The Project Facilitates DOE's Vision to Empower Communities in Which We Serve, Work & Live

The envisioned Clean Energy Economy will be based on integrating advanced technologies, such as artificial intelligence, the Internet of Things (IoT), and big data, into traditional industrial practices, leading to increased automation and interconnectedness in the manufacturing sector. It will demand a new set of skills and workforce capabilities, such as specialists understanding digital transformation, cybersecurity, and supply chain optimization. OG&E understands the transformative vision the DOE has set forth and proposes a project to bring this vision to life. Our preliminary analysis estimates the Project will generate a social benefit impact of approximately \$225M (20-year present value)² to roughly 90,000 customers. Once the Project investment is fully realized, we estimate an average annual reduction of more than \$17M in customer cost of interruption³ calculated using the DOE's Interruption Cost Estimate (ICE) calculator⁴. On average, we estimate our proposed Project avoids more than 50,000,000 minutes⁵ of outages annually and 300,000 momentary outages⁶ annually.

OG&E is known for our caring and inclusive culture, underpinned by the "Our Power to Grow" values program. Through this longstanding program and the proposed Project, benefits generated will flow to communities to train and recruit from our local areas. This program includes partnerships with the U.S. military, Langston University (a Historically Black College or University), the Urban League of Greater Oklahoma City, and other local colleges to build a pipeline of career opportunities to strengthen and diversify the energy sector for long-term success. We estimate the \$102M expenditure will create approximately 1,000 external jobs⁷ across the supply chain (for a wide range of education levels) and require about 60,000 man-

² NPV includes downstream costs and incremental economic impact (US Census Bureau and OG&E Analysis)

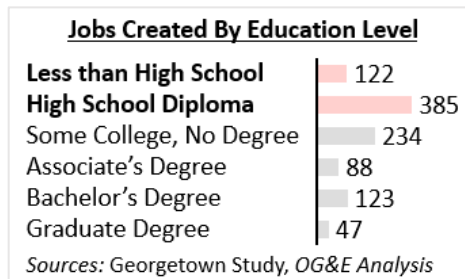
³ Figure represents the 5th year (2028) once 100% of funding is applied to project, SAIDI and SAIFI include storms and are estimated based on 2019, 2020, and 2021 baseline years

⁴ Due to ICE calculator limitations for long duration outages, this value is likely underestimated given that SAIDI is capped at 1,920 for ICE calculator inputs

⁵ Calculation includes SAIDI with storms, estimated based on 2019, 2020, and 2021 baseline years

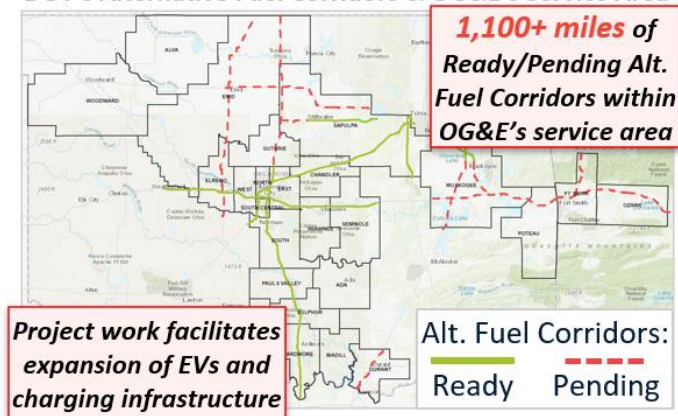
⁶ This is a collective figure across all customers impacted by the investments

⁷ Georgetown Uni. Study, 2021: 15M Infrastructure Jobs: An Economic Shot in the Arm to the COVID-19 Recession



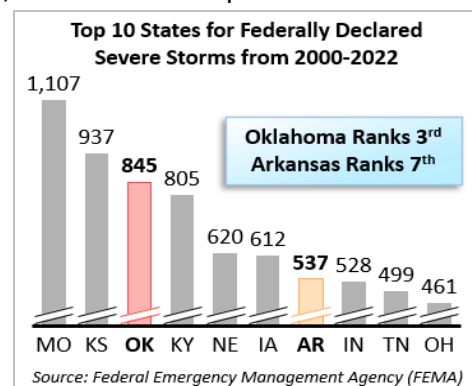
hours across current and new OG&E employees. As a result of our collaborative culture where our employees have a voice and advocate for one another, OG&E has operated without a union representing our employees for more than 120 years. This is because our employees have not identified a need for union representation in our workplace. OG&E's full union statement is provided in the Community Benefits Plan (CBP). On a similar note, from 2020 to 2022, we spent \$137M on union suppliers and contractors. The Project will also deliver about \$50M incremental economic impact over the 5-year implementation period. Large commercial and industrial (C&I) customers, such as EV and steel manufacturing companies, will be attracted to the area for its improved grid reliability; the integrated system will facilitate optimization of energy consumption in the manufacturing sector, increasing efficiency, reducing waste, and lowering greenhouse gas emissions. This Project will expand the capacity for DERs and EV charging stations. It will increase the percentage of energy-efficient operations for homes and businesses, enhancing opportunities for further economic success. OG&E will bolster this growth by continuing to engage with communities through our employees on 370 boards and committees and by partnering with our local suppliers. In 2022, we invested \$133.5M in diverse suppliers alone, 55% of whom were from the local area, and we are targeting \$20M to \$40M of Project spend (20-40% Project budget) to be with diverse suppliers.

DOT's Alternative Fuel Corridors & OG&E's Service Area



We Understand Climate Risk and Have Gone to Great Lengths to Protect Our Communities

Oklahoma and the Central Great Plains have always experienced volatile extreme weather. The physical risks of climate change, including weather impacts, are an area of operational focus for OG&E given the prevalence and frequency of extreme weather events in our service area. A detailed analysis conducted for a regional climate assessment, highlighted in our 2021 TCFD (Task Force on Climate-Related Financial Disclosures) report, concluded that our service area may see physical climate risks. These risks include an increase in wind speed, a rise in average annual temperature, a surge in the intensity of extreme precipitation events, an increase in drought periods, and an elevated risk of wildfires. In October 2020, Oklahoma experienced an ice storm catastrophe; OG&E saw over 260,000 outages⁸ across our service area alone, leaving 55%



⁸ [Oklahoma Department of Emergency Management](#)

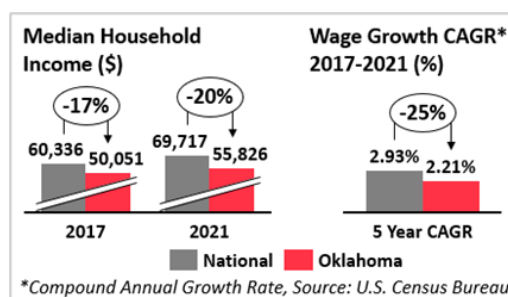
of Oklahoma’s customers without power. The severe storm resulted in 1,930,087,596 minutes of interruption and 130,000 homes with overhead electric services to be addressed. Restoration efforts lasted for over a month. The Project prioritizes climate resilience to mitigate the impact of future storms and combat the growing threat of worsening weather extremes.

OG&E does not anticipate the Project itself will have any impact or long-term effect on community access to natural or Tribal cultural resources and will not negatively impact a floodplain. Work is not expected to result in long-term cleanup, and all waste will be removed prior to completion. The grid automation work will be limited to existing OG&E substation and distribution lines, and will not disturb air, land, or water.

DOE Funding Accelerates OG&E’s Longstanding Effort to Bring Smart Grid Benefits to Fruition

The Smart Grid Grant has arrived at an opportune time for OG&E and our customers since our ability to invest in critical programs is constrained for several reasons:

- Oklahoma ranks as the 8th lowest median household income state⁹, and the income gap is widening. Our proposed Project targets customers living in Tribal lands and DACs who typically have even lower incomes than the state and national averages.
- Storm pressure further limits our ability to invest; OG&E’s disaster-prone service area and the threat of intensifying climate impacts further make storm recovery spend unavoidable.



Due to these compounding pressures, the DOE funding is crucial for OG&E to serve our customers with a higher energy burden¹⁰. If funded, the Project will provide benefits at an effective 49% discount to customers most in need. With 100% of project benefits affecting customers living in DACs and/or Tribal lands, the anticipated approximate \$50M economic impact will create long-term and compounded benefits for underserved communities. Grant funding will advance our ability to modernize the grid, accelerate and expand community benefits, and allow OG&E to focus on critical state and regional initiatives.

Technical Description, Innovation, and Impact

Smart Grid Capabilities are a Cornerstone of Community Safety and Success

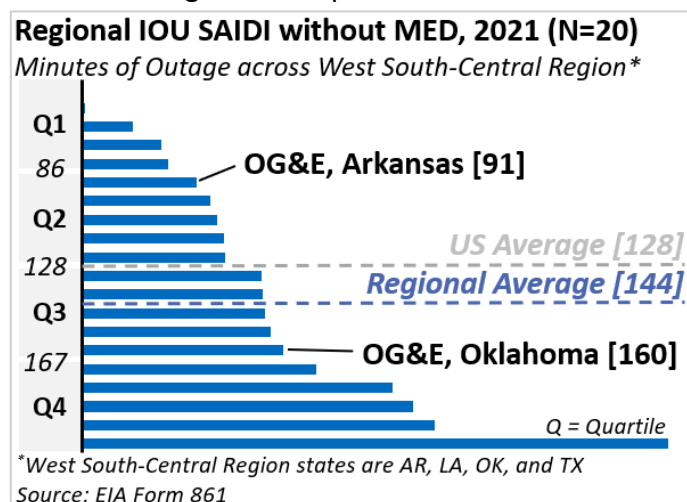
The Adaptable Grid Project is a formulaic effort resulting from years of planning, design, and execution of OG&E’s overarching Smart Grid investment strategy; it will benefit an estimated 90,000 customers by implementing grid automation technologies across approximately 26 substations and 92 circuits and investing in two mobile battery energy storage systems (BESS).

More than a decade ago, before the challenges of the COVID-19 Pandemic and the surge in work-from-home end users, OG&E began system-wide deployments of a fully integrated advanced metering infrastructure solution and deployed a distribution management system, automated switching, and Integrated Volt/VAR Control (IVVC). In 2019, OG&E worked with the Electric Power

⁹ U.S. Census Bureau

¹⁰ Average annual housing energy costs divided by the average annual household income (DOE Definition)

Research Institute (EPRI) to evaluate our capabilities against the DOE's Next-Generation Distribution System Platform (DSPx), a standard established to provide a consistent understanding of the requirements for a modern distribution grid. EPRI noted OG&E's plan was



“in alignment with [OG&E’s] stated drivers and objectives, as well as with modernization efforts that have been established nationally.” OG&E Oklahoma ranks in Q4 in the U.S. and Q3 in West South-Central Region for SAIDI without MED (Major Event Day). We have consistently invested in grid resilience in a concerted effort to strengthen our grid against the threat of extreme weather. Not only do these investments mitigate the impacts of severe storms, but they also provide day-to-day reliability

improvements for our customers. Our past grid enhancement and modernization investments started in Arkansas, now covering 83% of state circuits. These investments have helped OG&E Arkansas improve SAIDI without MED by 13.9% from 2019 to 2021. In Oklahoma, 25% of circuits have been upgraded. With the DOE funding, we will be able to accelerate our resilience investments in Oklahoma to narrow the reliability gap. Project cost-share is approved by OG&E’s Board of Directors in addition to the ongoing capital investment plan, to facilitate this incremental resilience investment and accelerate our six future grid objectives:



In concert with the many drivers of change described above, these objectives have created the roadmap for OG&E’s energy transformation efforts thus far. Our grid enhancement efforts in Arkansas incorporated grid resilience and grid automation upgrades across this relatively small portion of our infrastructure. In May 2021, our investments in Fort Smith, Arkansas, were put to the test. The area experienced a major storm with strong winds that escalated into tornadoes, affecting approximately 27,000 customers, almost 35% of OG&E’s customers in the Fort Smith area. Newly installed automation devices isolated faults, rerouted power, and restored service where possible by enabling the load to be shifted onto adjacent circuits, preventing localized outages from causing a circuit-wide sustained outage. Through these proactive investments, OG&E avoided a sustained outage for an estimated additional 20,000 customers, or over 25%, in the Fort Smith area. This customer count includes many critical facilities, such as hospitals and schools. Ensuring power is maintained to these vital resources prevents a storm from jeopardizing the ability to access critical services, such as healthcare. In Oklahoma, where most OG&E customers reside, critical access hospitals make up 25% of the 154 total hospitals and create a \$162M annual economic impact for the state by providing care for two million rural Oklahomans¹¹. The provided table highlights how many critical facilities are likely to be impacted by the proposed investments. The entire community relies on critical facilities to consistently

¹¹ [Oklahoma Hospital Association](#)

have power, meaning OG&E's grid investments deliver benefits to more end users than just those with an OG&E account. With this understanding, we have taken action to perpetuate the benefits generated by the Fort Smith grid enhancement upgrades; we have incorporated the lessons learned into our modeling and planning for follow-on work, including in this Project, to facilitate seamless project design and implementation.

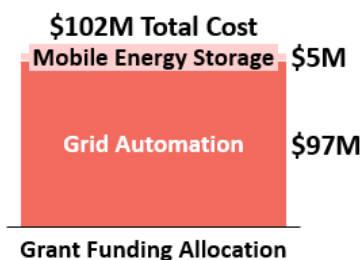
Critical Facilities Impacted by the Adaptable Grid Project

Sector	Critical Facilities & Population Served	Count	% total in OK
Government	Local Police Departments	32	10
	Special Police Units	9	32
Education	Universities	21	20
	Public Schools (K-12)	357	20
	Public School Enrollment	197,414	29
Healthcare	Patients on Life Support	9,000	20
	Children's Hospital Patients	314	66
	Hospitals Patients	4,719	57

Sources: OK State Department of Health, National Center for Education Statistics & Bureau of Justice Stats

Smart Grid Investments Unlock New Capabilities Within DACs and Tribal Lands

The Adaptable Grid Project is a \$102M undertaking to deliver OG&E's desired future grid to customers most vulnerable to higher energy burden and greater socio-economic obstacles. All investments work in unison to help OG&E deliver an enhanced customer experience. We track this progress through our ongoing feedback mechanism; we polled 1,000 customers and the results indicated that reliable service is their most important factor, outweighing lower customer bills and safer operations¹². By understanding this, we designed the Project to construct a grid that will enhance visibility into the electrical system, enable autonomous controls, mitigate impacts of extreme weather, and adapt to growing load demands. Additionally, the Project will act as a catalyst to facilitate integration of EVs and DERs as the newly unlocked capabilities will provide the required grid flexibility and reliability to support EV charging infrastructure and the connection of distribution-scale DERs, such as rooftop solar. These flexible loads will advance the DOE's goal of a greener future and introduce new technology and end-user options to OG&E customers that were previously unavailable.



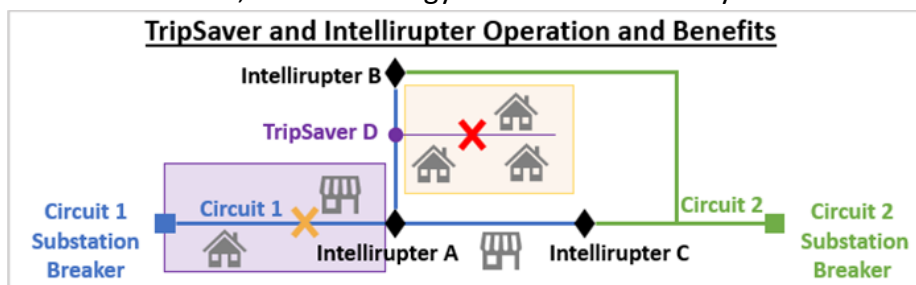
Grid Automation: We will invest approximately \$97M to expand OG&E's goal of leading the energy transformation through utilization of the DOE's DSPx framework. The Project targets 26 substations and 92 circuits for grid automation upgrades that incorporate a variety of industry-leading smart devices, including cut-out mounted reclosers, automated three-phase reclosers, communication modules, substation monitoring and control equipment, and distribution substation relays. Working together, these smart devices are designed to create a self-healing grid. Without Smart Grid investments, combatting an outage requires a series of manual actions that delay power restoration for extended periods. First, operators must identify and locate the outage, taking remote action if possible. If further actions are required, the operator will contact a crew for on-site troubleshooting. The crew will have to travel to the area, attempt to locate the fault (not a simple task due to lack of visual indication), and begin the process of resetting switches or replacing equipment as required. Once investments are implemented, the system

¹² 2021 residential/business customer responses via Escalent - covers 141 utilities, 80 utility business customers

will take automatic action when an outage occurs to localize the fault and reroute power using adjacent circuits, resulting in fewer outages with shorter durations.

The Project will replace lateral fuses with cut-out mounted reclosers; we selected to deploy TripSavers¹³ from S&C Electric Company (“S&C”) based on our experience and research. Using the figure below, if a tree limb falls at the red “X”, TripSaver D will open and reclose to clear the fault, restoring power to all customers once the limb falls off the line. If the limb remains on the line, TripSaver D will open, limiting impact of the disruptive event to customers within the yellow-shaded area. This technology will allow OG&E to deploy a hybrid protection scheme by combining aspects of “fuse-blowing” and “fuse-saving” industry practices. If a temporary fault occurs, the TripSaver avoids outages for all customers on the main feeder by isolating the fault to the affected lateral. This removes the need to “blow” the fuse or “blink” (i.e., fuse-saving scheme that uses momentary outages) the main feeder to clear a fault, which causes equipment disturbances and may significantly impact customer productivity and economic output. Even these split-second disruptions in power can require large businesses, such as manufacturing companies, to spend hours resetting sensors and equipment to resume operations. Additionally, if a permanent fault occurs, the TripSaver will physically disconnect and provide a visual cue for crews to identify the fault location. Overall, this technology reduces unnecessary truck rolls and prevents temporary faults from causing sustained outages.

The Project also deploys Intellirupter¹⁴ reclosers from S&C on main feeder lines for



selected circuits. Using the figure above, the normal position for Intellirupters B and C is open; when a fault is detected at the orange “X”, Circuit 1 Substation Breaker will open, then Intellirupter A will open to ensure the fault remains isolated when power is restored to the rest of the circuit. Then Intellirupters B and C will close, allowing sections between Intellirupters A and B and Intellirupters A and C to be restored on Circuit 2, limiting the outage to the purple-shaded area. Based on OG&E’s experience and research, we strongly believe Intellirupters will outperform other devices through their coordination time interval (CTI), speed, ease of operation, and overall safety. The improved CTI and speed to clear faults through effective isolation and restoration improve line device coordination and minimize customer impact. The Intellirupter closes at a specific point in the voltage wave, reducing the fault to 2 to 5% of the conventional closing current. The affected equipment would no longer be exposed to the full fault current when closing on an existing fault, minimizing arcing as well as wear and tear on distribution lines, substation transformers, and customer electronics. To further advance these benefits, OG&E is strategically siting Intellirupter locations to divide circuits to limit the number of customers impacted by permanent faults and enable opportunities to restore power remotely.

¹³ S&C Electric Company: Tripsaver

¹⁴ S&C Electric Company: Intellirupter

Our Project installs communications modules (e.g., radios) to existing capacitor and regulator stations to expand the communication network and enable greater voltage control and remote operations on targeted circuits. Improved communications will reduce the need for field technician support and manual troubleshooting. We also plan to deploy or upgrade substation monitoring and control equipment in areas without functionality; this will address bandwidth constraints, replace obsolete equipment, monitor voltage and loading, and provide operators the ability to control automatic throw-over switches to shift power supply during a fault. We will replace relays in distribution substations to improve overall functionality, increase data accessibility, and add protection capabilities.

The combination of smart devices will work in unison to limit the impact of outages and avoid costs related to longer truck rolls, call centers, dispatch time per ticket, and damage to equipment from outages and their subsequent complications. In addition, these technologies will facilitate capabilities such as Fault Location, Isolation, and Service Restoration (FLISR) and IVVC. The FLISR algorithm isolates the fault to the smallest possible area, identifies the fault location, and points dispatched troubleshooters directly to the issue, limiting the time crews spend navigating congested roads. These investments will also allow us to reconfigure circuits remotely to address activities such as changing load or operating conditions, allowing for EV load variability and dynamics, optimizing hosting capacity, and supporting other common issues with distribution-scale DER integration. By expanding our use of a hybrid protection scheme and incorporating industry-leading technologies, we will enable further commercialization and deployment of these smart devices by reducing uncertainty and risk.

Mobile Energy Storage: With approximately \$5M in project expenditure, OG&E plans to purchase two Nomad Traveler mobile BESS as a non-wire alternative to traditional infrastructure upgrades. Each Nomad Traveler will provide 2MWh energy and 1MW power. The primary purpose of each mobile BESS will be to peak shave substation transformers, preventing overloading situations from occurring and deferring the need for high-cost capacity projects into the future. With the current 2-year lead time for power transformers, the ability to defer capacity may soon become a necessity to maintain power to our customers. This supply chain pain point is further aggravated by the increasing system load driven by the rising popularity of EVs. By proactively investing in this non-wire alternative, we can support multiple sites expected to exceed their existing transformer capacity in the coming years.

Mobility is another key factor in OG&E's planning to purchase the two Nomad Traveler BESS. Numerous sites are experiencing load growth at varying rates, both annually and over multiple years. We plan to move the BESS to various substations based on seasonal demand. In the heat of the summer, the BESS can mitigate summer peaking in locations reaching capacity constraints due to high loads from air conditioning, and similarly, in the winter, peak shave substations where freezing temperatures increase the use of electric heating. Additionally, when a location no longer requires capacity deferment, the BESS will be moved to another substation, shifting benefits, and enabling asset utilization throughout the BESS's entire useful life of 10 years. As an ancillary function, the mobile BESS can be moved to charge OG&E's EVs or provide power to circuit segments during outage restoration in the event of extreme weather. OG&E plans to convert 100% of our light-duty fleet to EVs by 2030; the availability of these mobile BESS will ease our transition to fleet electrification. By incorporating mobile BESS into our daily operations,

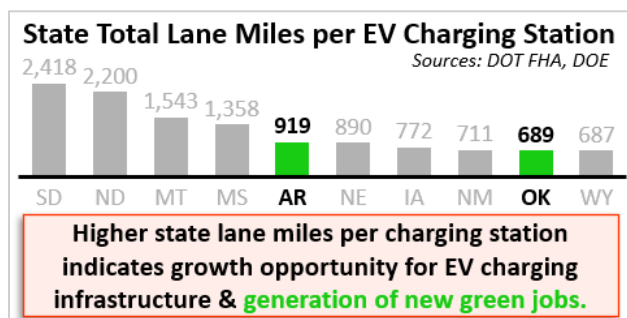
OG&E will become intimately familiar with mobile battery storage technology and the latest advancements in BESS, supporting our goal of expanding battery storage use through future investments in this space. This will also accelerate the commercialization of BESS, as industry peers use our efforts and lessons learned as a starting point to deploy similar technologies; an effort that may not otherwise be pursued due to technical and financial uncertainty.

Project Supports DOE, State, Tribal & Community Energy Goals for Resilience and Electrification

Energy demands are continuously evolving at the state, Tribal, and community levels, leading to changing reliability expectations, capacity requirements, and energy use cases. The Adaptable Grid Project will build upon the foundation of Smart Grid investments OG&E has already made to meet state, community, and customer needs and continue our energy transformation.

As the state’s largest electricity provider (in terms of customers), OG&E’s ability to protect our energy infrastructure is crucial to a majority of Oklahoma’s families, businesses, and critical facilities. With full acknowledgement of this responsibility, OG&E is heavily invested in the Oklahoma Energy Assurance Plan, that outlines the state’s strategy to “plan for, prevent, and respond to energy emergencies.” The Adaptable Grid Project is a concerted effort to fortify targeted infrastructure against the threat of extreme weather, unpredictable load growth, and security threats. In line with a Smart Grid Grant priority focus area, grid automation upgrades will improve system reliability and restoration time through remote and automatic actions during severe storms. Additionally, these smart devices will make it easier to recover from power outages caused by various security-threatening attacks. Improved system visibility will provide operators with the data, software, and sensors required to monitor grid operations and rebalance power as required. Enhanced communication capabilities will give us “eyes and ears” on the ground to identify threats sooner and enable faster response.

We have considered the Smart Grid Grant priority focus areas and listened to our state, Tribal, and community liaisons; we understand the importance of our role in making EV adoption a reality for our customers. The most significant barriers to widespread adoption of EVs are the consumer belief that EVs do not have the range required to reach their destination and the lack of access to charging infrastructure¹⁵. Due to Oklahoma’s spacious landscape, over 80% of individuals commute to work alone for an average of 45 miles per day¹⁶ (more than the national average). OG&E is taking a proactive role in combatting these barriers via the Adaptable Grid Project. The Project will enhance grid flexibility by allowing for easier circuit reconfiguration to maintain higher power quality and maximize hosting capacity, supporting Oklahoma initiatives, voiced in the 2021 State Energy and Environmental Plan, to expand EV integration and alternative fuel transportation infrastructure. OG&E currently provides power to a majority of Oklahoma’s 307 charging station locations¹⁷ and houses



¹⁵ DOE: A Guide to the Lessons Learned from the Clean Cities Community EV Readiness Projects

¹⁶ Oklahoma State Energy and Environmental Plan 2021

¹⁷ DOE: Alternative Fuels Data Center

over 1,100 miles of ready or pending alternative fuel corridors, however, thousands of miles of roads within OG&E's service area are still without charging capabilities. Oklahoma and Arkansas are 9th and 5th for the highest count of lane miles per charging station. Oklahoma has one charging station for every 689 lane miles, compared to California, with a station for every 26 lane miles. By executing the proposed work, we can accelerate this growth opportunity and significantly alter the landscape of EV charging infrastructure across our service area.

Our Tribal customers are also interested in EV adoption, both from a financial and environmental standpoint. In early 2021, the Cherokee Nation used \$1.5M in DOT grant funding to purchase two electric buses and the associated charging infrastructure to support transit for its Tribal citizens¹⁸. OG&E is having conversations with tribes to help them take advantage of a variety of funding opportunities; we are working with Choctaw, Chickasaw, Cherokee, Citizen-Potawatomi, Cheyenne-Arapaho, and Muscogee (Creek) Nations. Many of these Tribal nations are keenly focused on reliability and resiliency. They have also voiced interest in collaborating with OG&E to expand EV charging infrastructure and limit the environmental effects of traditional internal combustion vehicles. The Adaptable Grid Project will promote this collaboration.

In line with state, Tribal, and local energy strategies, we continue to pursue the development and integration of distribution-scale DERs. Our Tribal customers are interested in having the security of self-supplying power while also reducing their carbon footprint. We have previously developed and installed two community solar farms (distribution-scale) as a part of Utility Solar Agreements with the Choctaw and Chickasaw Nations. Through grid automation upgrades, the Project will put the physical components in place to enable the grid to support more agreements such as these and propel our communities toward an electrified future.



As part of our grid automation upgrades, Intellirupters will enable faster fault clearance and pulse closing, thereby reducing arcing. This will improve the overall safety of equipment operations and mitigate the risk of grid-induced fires¹⁹. This Project work aligns with an external partnership between the Choctaw Nation and the U.S. Department of Agriculture Forest Service, with the goal to prevent wildfires and preserve healthy forests for Tribal members and communities. The partnership is poised to create the first wildland fire module (i.e., crew) managed directly by a Tribal nation. These upgrades are critical to community agriculture and property as Oklahoma is third in the U.S. for federally declared fires since 2000²⁰, and many communities rely on natural resources for their livelihood.

In summary, OG&E has fostered meaningful relationships with state, Tribal, and local stakeholders. The Project will broaden these relationships by targeting investments in grid flexibility and reliability that align with shared long-term goals of a Clean Energy Economy with increased resilience to storms.

¹⁸ ICT News – IndiJ Public media

¹⁹ [S&C Electric Company: Intellirupters](#)

²⁰ [Federal Emergency Management Agency \(FEMA\)](#)

Project Deployment is a Catalyst for Economic Growth & Job Creation for Communities in Need

As an electric company with over 120 years of experience, OG&E demonstrates a commitment to adopting innovative technology while managing risk, safety, and reliability. Throughout OG&E's grid enhancement efforts, we have maintained a continuous improvement mindset to ensure that we are consistently building upon our processes year after year. The work we intend to execute under the Adaptable Grid Project is directly in line with our previous investments and will run in parallel with our current and future grid enhancement efforts. We will continue to gather lessons learned from past projects for ourselves and industry peers to support deployment on a nationwide scale. By establishing a repeatable procedure, we will contribute to our peers' understanding of impactful investments as they look to advance their respective grid capabilities. These past efforts, in concert with our skilled workforce, risk mitigation, industry-leading technology, and the DOE's grant funding, will enable OG&E to execute the workplan safely and successfully and bring projected benefits to fruition.

By providing an affordable, flexible, and resilient grid through Adaptable Grid Project work, we will advance economic growth in Oklahoma, while promoting additional private sector investments as businesses flock to the area to enjoy the service and financial benefits OG&E has to offer. OG&E's attractive rates have already helped areas, such as Fort Smith, AR, become a hub for manufacturing development²¹. The proposed Project work expands the efforts already taking place in Oklahoma to provide more locations with our quality, affordable service. According to a study conducted for the DOE²², the costs associated with a single power quality event at a commercial facility can range from thousands to millions of dollars, and at a manufacturing facility it can be even higher. An outage of any duration can require hours of system resets; an extended outage can result in materials hardening inside manufacturing equipment leading to even further production loss. These delays can overlap shift turnovers, causing many employees to be sent home or asked not to come in, resulting in loss of wages and payroll taxes. The negative effects of an outage trickle down to customers as well, as supply chain orders may be delayed or canceled due to lost production time and missed delivery schedules. Large C&I customers (i.e., EV fleets and steel manufacturing) have electrical equipment with great sensitivities; a small blink, or multiple blinks in power increase wear and tear on machinery and can significantly shorten its useful life, forcing the company to make costly, unplanned expenditures to replace equipment. By providing a low-cost, reliable service, resilient to momentaries and sustained outages, OG&E can attract and capture new growth in the manufacturing industry, bringing larger businesses and economic growth to our communities who need it most. Oklahoma Employment Security Commission projections for 2020 and 2030 show that all industries will grow by 10% on average and create over 175,000 jobs across Oklahoma²³. OG&E powers ~150 DACs with an average 8.2% unemployment rate²⁴, meaning over 36,000 individuals in DACs (over age 25) are without work. By investing in the proposed Project

²¹ Arkansas Economic Development Commission

²² National Energy Technology Company - Modern Grid Initiative Powering Our 21st-Century Economy

²³ Employment Projections Program, OK Employment Security Commission, Economic Research & Analysis Division

²⁴ DOE Justice40 Disadvantaged Communities Reporter

now, we can capture a portion of this growth and bring the job opportunities to our customers in need. Adaptable Grid Project work is the catalyst needed for these future private sector investments; an advanced, affordable, and resilient grid will be the foundation to make it possible.

Workplan

Adaptable Grid Project Objectives

The Project's objectives include facilitating necessary smart grid investments to increase grid flexibility and visibility while simultaneously ensuring every effort is made to minimize energy burden on OG&E customers. OG&E will accomplish this by incorporating smart devices and battery energy storage systems to anticipate and respond autonomously to grid variability and uncertain conditions caused by EVs, DERs, extreme weather, load growth, and other factors. These investments will not only address the grid issues of today but promise future value to mitigate climate impacts and changing consumer behaviors as well.

Technical Scope Summary

The Project combines grid automation upgrades with the purchase of two mobile BESS to enable the grid flexibility and efficiency needed to enhance system flexibility and reliability.

At the end of each performance period, OG&E expects to increasingly transform the flexibility of its grid as measured by the number of circuits upgraded for automated response to changing grid conditions. This includes completion of related substation automation work that is integral to facilitating the automation of each respective circuit. By the end of the project, we expect to have transformed 100% of the circuits within the Project's scope, resulting in an advancement in Community Benefits through smart grid enhancements resulting in reduced customer costs of interruption. Likewise, we expect to deliver benefits through the Community Benefits Plan and related SMART milestones, including but not limited to expanding our community engagement and listening sessions, increasing internal engagement through surveys and feedback, providing training for Diversity, Equity, Inclusion, and Accessibility, reaching out to diverse suppliers, tracking our Justice40 goals, and reducing customers' annual energy burden. Specific details can be found in the Community Benefits Plan.

Buy America Statement

The Project proposed by OG&E will involve the construction, alteration, and/or repair of infrastructure privately owned by OG&E in Oklahoma and operated for the provision of electric service to its customers in those states. As detailed in Appendix C to DE-FOA-0002740_Amd_000005, OG&E is a for-profit entity. As such, it is not subject to the Buy America requirements. However, OG&E expects between 70% and 80% of Buy America-relevant material spend in the Adaptable Grid Project to comply with the Buy America requirements based on the supplier commitments OG&E has received from the following suppliers: S&C Electric, Anixter/Wesco, Koppers, Grid Solutions, GE Prolec, Valmont Industries, and Howard. If any of the following changes occur prior to the time of final purchase order or requisition, our commitment to Buy America compliance may be affected:

- Significant shifts in material lead times.

- Substantial increases in the domestic supplier costs.
- Failure of supplier to provide proof of Buy America compliance.
- Adverse conditions that result in a supplier's inability to meet Buy America commitment (e.g., supplier bankruptcy).
- Changes to Federal policies that negatively affect OG&E's ability to maintain compliance with Buy America requirements.

If required by the DOE, OG&E can submit a Buy America waiver during award negotiations to document materials that were not sourced domestically but are eligible for Buy America waivers.

To ensure compliance and verification of the above statement, our suppliers and contractor have been notified of the Buy America purchasing intentions, and OG&E has had discussions with suppliers to confirm these commitments. The Buy America standards will be part of our contracts with our 1st tier contractors and suppliers to which the standard applies. Post-award, OG&E will assign a Supply Chain Team Member to collaborate with our suppliers and contractors regarding the Buy America standards to track compliance and gather necessary documentation for verification. This statement may need to be updated based on any change in requirements made by the DOE or OG&E prior to the time of material purchase.

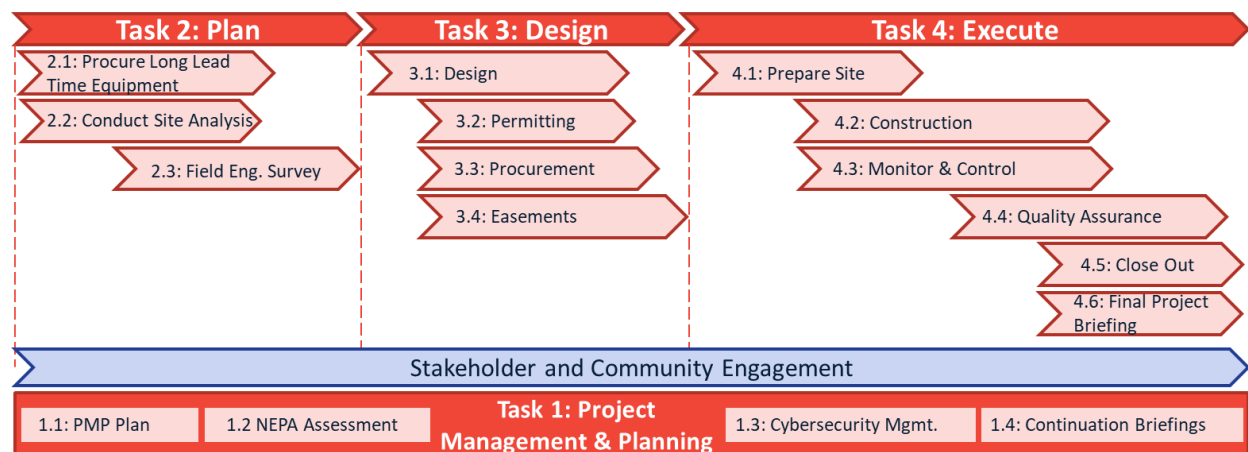
WBS and Task Description Summary

Project work will commence once contract negotiations with the DOE are complete, and a contract is signed. Initial tasks will include establishing the Adaptable Grid Project in our project management office and finalizing details of a project management plan that will be submitted to the DOE. If requested by the DOE, tasks to support contract negotiations, such as any NEPA compliance tasks, will also be accomplished. Additionally, OG&E will submit a Cybersecurity Plan during the award negotiation phase. After contract award but prior to contract signing, OG&E may, with DOE's prior approval, initiate ordering long lead time materials. Doing so will reduce the risk of project delays resulting from supply chain challenges occurring in today's market.

OG&E will begin executing work in accordance with the mutually agreed upon project plans and milestones in this document as modified/finalized during contract negotiations with the DOE. Our highly skilled workforce and vendors will plan, design, and execute work. We have selected industry-leading technologies that have been tried and tested to avoid the risk of installing unproven equipment that fails to deliver. We balance this risk avoidance by deploying at scale and operationalizing the capabilities of the new equipment to drive innovation across our grid. Our engineers' and crews' familiarity with these smart grid upgrades through our past grid enhancement work allows us to fully leverage the grant funding to escalate our deployments while limiting the risk of project execution being delayed or disrupted. To ensure continuous coverage, we use an ongoing risk management process to identify risks across the project timeline, assess their likelihood and impact on the project, and determine an appropriate response. This includes the application of our cybersecurity methodology that is codified through written security policies and procedures that govern all aspects of Company systems and processes. We provide risk assessment reports regularly to our internal audit team and senior leadership. We will provide this same level of progress and risk reporting to the DOE. This process will mitigate Project risks from the start of construction through infrastructure end-of-life.

To deliver the Adaptable Grid Project, we will utilize our proven 4-stage project execution process utilized during our Grid Enhancement work. The process consists of Model, Plan, Design, and Execution stages, with each stage building upon the last. The Model stage has already been completed for all work categories and was used to identify the scope of activities and locations of work to include in our grant application for the Adaptable Grid Project. The Plan, Design, and Execution stages of work, along with activities defined in the GRIP FOA, constitute the scope of the tasks to be performed. External stakeholders will be engaged at key junctures to solicit their feedback and input.

- **Task 1: Project Management and Planning** involves ongoing tasks to execute the Project in accordance with the project management plan, conduct any NEPA assessments, maintain and update a cybersecurity plan, and conduct ongoing briefings with the DOE.
- **Task 2: Plan** includes subtasks to procure long lead time equipment, conduct engineering analysis to validate project locations for upgrades or new equipment, and to conduct visual surveys of project locations (as required) to validate or confirm analysis.
- **Task 3: Design** includes all engineering design activities, including developing design packages, obtaining permitting and easements, and initiating equipment procurement.
- **Task 4: Execute** includes subtasks to prepare each site for work, conduct installation or construction, monitor and control each site, perform quality assurance reviews, place equipment into operation, and close out the Project.



While Task 1 will be ongoing, Tasks 2 – 4 and its subtasks will be repeated multiple times as required for the work category and locations in scope. For example, grid automation upgrades will be accomplished by executing Tasks 2 – 4 by circuit and by substation that serves that circuit. The process is repeated for each affected substation and circuit(s). Using this approach, we can schedule the work to achieve interim accomplishments of new capabilities and benefits for our customers. This process also allows us to optimize our workforce, reduce administrative costs, and perform work efficiently.

In Task 2, we will confirm specific locations for new equipment installations by conducting additional analysis and/or field engineering surveys to confirm details as needed. For grid automation, existing substation monitoring and control equipment may be inspected to confirm required upgrades. Field engineering surveys will be conducted on capacitor and regulator stations on circuits to confirm design inputs. A coordination/design study is performed to identify

locations and protection settings for new equipment. This is required to ensure the new devices' operation is coordinated across the circuit to achieve circuit reliability and to ensure the whole circuit will see minimized impacts from any faults. A cybersecurity review is conducted to identify physical and network security risks that need to be addressed during design. Planning tasks for mobile BESS will include confirming which substations the mobile BESS will initially be installed.

In Task 3, we will incorporate the inputs from the Plan tasks to start engineering a design package for each project location. Designs will include specifying the equipment, materials, and supplies for each location such that equipment can be procured (unless already ordered as part of the long lead time equipment procurement task) and received in time for construction to begin. Vendors providing equipment that will connect to OG&E's network are required to pass a detailed security questionnaire before devices are approved for purchase. Additional site reviews may be conducted if needed to validate design details. In the Design stage, we also initiate easement reviews and obtain easements where needed. Our design engineers coordinate with other outside entities for permits to ensure all tasks required for construction are understood and accounted for in our designs. For the mobile BESS, design work will include developing final specifications for the BESS and leveraging industry experts familiar with this technology and its operations, to support OG&E's capacity deferment use case. Leveraging these industry experts will help reduce project risk associated with deploying new technology and drive learnings that we can apply to future projects.

Once the engineering designs are finalized, they are released for construction, and Task 4 can begin. In this task, vegetation management teams will clear locations in preparation for grid automation circuit and substation work to begin. Substations receiving the mobile BESS will be prepared to support placing the units in service and a mobile step-up transformer and Intellirupter system will be deployed to facilitate electrically connecting the mobile BESS to the grid. OG&E engineering teams will provide oversight and management of all work with trusted contractors supplementing the OG&E workforce for some tasks. Throughout the construction phase, our project team will monitor and control project performance with attention to schedule, cost, and quality control. Quality assurance teams will perform reviews of constructed sites to ensure all work meets OG&E and industry standards. Once all work is completed, OG&E's project lead for that work category will ensure that all internal procedures and technical reviews have been completed and mark the project "used and useful", signifying the asset is operational. Once all work categories for a circuit are marked "used and useful", the circuit flexibility will be considered transformed in accordance with Project goals and objectives. Once all aspects of the work activity are complete, including receipt of invoices from contractors and final site cleanup, work is marked "technically complete", and the project is closed out. The team will conduct the final project briefing with the DOE to present Project results and accomplishments.

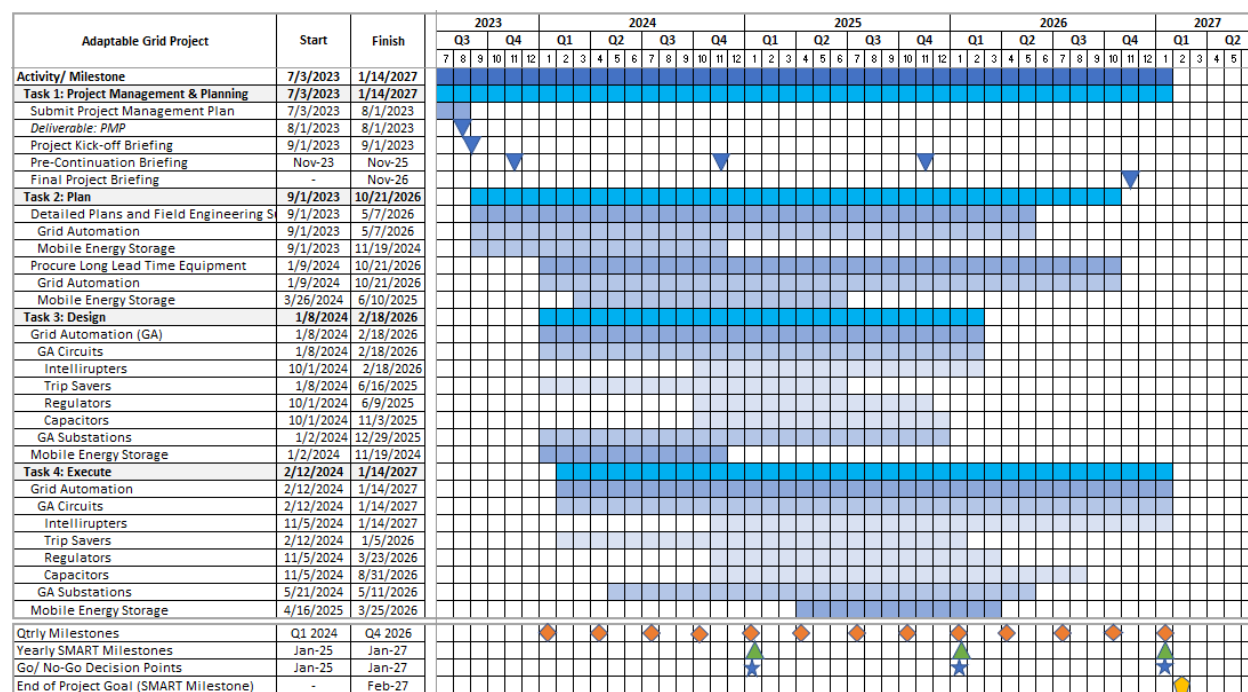
Milestone Summary including Go/No-Go Decision Points and End of Project Goal

Milestones, Go/No-Go Decision Points, and End of Project Goals are defined in the table below and have been designed to measure both Project progress and delivery of new capabilities. Tasks 2 – 4 will be conducted simultaneously across work categories and will be coordinated such that milestones can reflect accomplishments for the whole Project by performance period. This coordinated approach will ensure interim accomplishment of capabilities and benefits and ensure the objectives and goals of the Project are accomplished at project completion.

Milestone	Type	Measurement
% Task Completed vs. Planned	Quarterly Progress	As measured in project management software
% Budget Spend vs. Planned	Quarterly Progress	As measured in project management software
Circuit Flexibility Transformation Achieved	SMART Yearly and Go/No-Go	% of circuits upgraded for automated response to changing grid conditions
Labor Availability Factor	SMART Yearly and Go/No-Go	% of labor required to conduct next tasks by specific work type that are in place or ordered/scheduled to be in place
Equipment Availability Factor	SMART Yearly and Go/No-Go	% of equipment required to conduct next tasks by specific work type that are in place or ordered/scheduled to be in place
Advancement in Community Benefits through increased grid flexibility and reduction in customer cost of interruption	SMART End of Project	Economic impact from expected resilience improvement (including storms) based on ICE Calculator considering only distribution outage causes

Planned Project Schedule

The Project schedule below reflects all tasks, sub-tasks, and milestones described above. Our schedule completes all work in approximately four years, ensuring we can meet the 60-month execution timeframe even if unforeseeable changes occur.



Project Management: Overall Project Management Approach

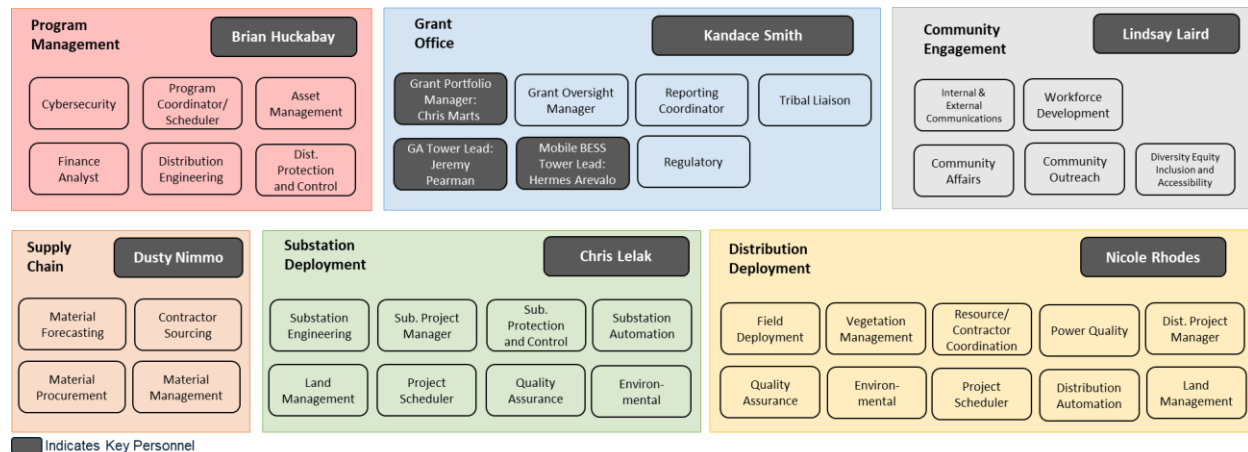
All categories of Project work will be managed directly by OG&E resources and performed by our trusted contractors, following established project management principles, OG&E and industry standards, and best practices gained from experience executing similar large projects such as the Grid Enhancement Plan. Existing project delivery governance processes will be utilized to approve

project transitions from stage to stage. Work will not progress from one stage to the next without these internal approvals.

OG&E prioritizes change management within our project management practices because we understand that projects need to be adaptable for a range of reasons. We follow internal change request governance for budget, scope, and schedule changes. Our project management team is trained to identify changes and initiate change request processes as soon as possible. The two main goals of our change management process are to 1) manage and control scope and 2) provide an audit trail and communication mechanism for changes in scope, schedule, and budget. The addition and removal of scope must be aligned with the overall goals of the Project, and approved changes should resolve issues and mitigate risks. Change requests must be accompanied by the necessary research or documentation to support the need for the change. Once a change request is approved by project leadership or steering teams, project documentation is updated to reflect the change. Project status reports will memorialize changes requested and approved.

Project Team Member Roles

OG&E will utilize a team of key resources supported by a staff of project managers, engineers, technicians, supply chain experts, and other support personnel, all experienced in their field. These personnel will be a matrixed organization splitting their time between normal OG&E tasks and tasks to execute the Adaptable Grid Project. A grant office will be established utilizing resources dedicated to administering grants, reporting, analytics, and overseeing grant-funded projects. Our role map outlines the Project's key resources and roles.



Technical/Management Aspects - Team Communication

The Adaptable Grid Project team will regularly meet to enable clear and concise information sharing to support Project execution. Risks will be recorded throughout the Project to allow for early risk identification and efficient mitigation plan development. The Project Management Lead conducts the following meetings with Project and leadership teams:

- **Weekly:** Review work completed, major accomplishments, risks, unresolved issues, safety updates, schedule status, long-term goals tracking, and completion targets.
- **Monthly:** In addition to weekly topics, address expenditure reviews, spending forecasts, planned activities for the next three weeks, and coordination between groups.
- **Annually:** Cover Project assessments, financial forecasting, and actual/budgeted analysis.

OG&E values and prioritizes external communication and has developed a process for communicating project information to our contractors. This process provides information and guidance on all aspects of compliance with OG&E standards and project management requirements. Overall, these processes transfer information, including safety briefings, our code of conduct, claim reporting, public relations, and most importantly our rules and procedures. Our project managers meet with our contractors weekly to provide job progression updates, regardless of any issues, and confirmation of scheduling timeline. Contractors are instructed to contact their project manager as soon as possible if any issues arise that may stall construction and inhibit the schedule. Contractors are fully aware they must keep their project manager informed if staffing, resources, or equipment changes will impact the project timeline.

Scope Development Practices

OG&E takes an integrated approach to develop scope, schedule, and project budget. We have found this approach best enables identifying and mitigating risk and allows for robust monitoring and control of scope, schedule, and cost. All non-technical and technical requirements will be decomposed into work packages that describe the deliverables, resources, durations, and costs needed to fulfill the requirements. The work packages are documented, further defined, and decomposed with project management software to facilitate project cost and risk management, and with scheduling software to facilitate schedule and resource management. OG&E has a process for coding the work breakdown structure to keep plans and schedules coordinated. This detailed breakdown of scope reduces the risk of scope gaps as the Project is defined and prepared for execution.

Schedule, Budget, and Spending Development Practices

All large projects executed by OG&E employ schedule and budget governance to keep projects on track and within budget. This governance approach also allows schedule or budget risks to be identified early and mitigation steps taken quickly before significant project impacts occur. A detailed project schedule is developed for all large projects identifying tasks and subtasks, start and end dates, milestones, deliverables, and resources. Resources are allocated to tasks, and their availability managed to avoid over or underutilization issues. All schedules cover milestones and activities for project management, engineering, procurement, and construction. Both internal and external resource capacity and demand are managed. Rules of credit are aligned with agreements made with contractors based on their scope of work and are established to measure the progress of all deliverables. Those agreements also include scheduling specifications to enable OG&E to better monitor contractor performance. OG&E will review the initial contractor schedule submission for compliance, conduct routine updates, and incorporate the contractor's schedule data into the project master schedule for analysis. This approach facilitates OG&E's ability to identify and mitigate risks related to resources, materials, equipment, and schedule at both the work category and project/portfolio levels.

All sub-projects begin with developing a time-phased original budget and continue with monitoring and controlling project costs for the entire project lifecycle, thus mitigating financial risk. Forecasting is done to provide project actuals directly to the project team, and in combination with progress data, are used to update the forecast and perform Earned Value

Management. Project and portfolio reporting data are compiled to assess project and portfolio performance against expected budget expenditures.

A standardized risk register is established and maintained for all projects. The risk register allows the project team to identify, qualify, quantify, and establish mitigation plans for all project risks. The qualification and quantification of each risk provide a calculation for project contingency and risk analytics at the project and portfolio levels. A contingency drawdown curve is used to assess project risk performance against project baselines.

Additional Risk Management and Mitigation Strategies

The most prominent risks to the Adaptable Grid Project are availability of labor and materials. OG&E has extensive experience mitigating these types of risks gained through our experience delivering large, complex projects similar to the Adaptable Grid Project. These past projects incorporated OG&E internal and supplier/contractor resources, extensive placement of new equipment, changes in project approach resulting from new technologies, and development and ongoing use of industry-leading cybersecurity standards.

Cybersecurity is always a risk when deploying new technologies involving remote communication equipment. OG&E will apply its existing cybersecurity standards and processes to project activities throughout the life of the project. We utilize a risk-based, comprehensive, defense-in-depth approach, enabling us to continually evaluate enterprise-wide cyber and physical security risks. Our defense-in-depth methodology is based on leading cybersecurity frameworks, including the DOE Capability Maturity Model (C2M2), NIST Cybersecurity Framework (CSF), and North American Electric Reliability Corporation Critical Infrastructure Protection (NERC-CIP) standards. We have a comprehensive cybersecurity threat detection and monitoring program for our technology and network infrastructure, which leverages various systems, processes, and operational measures to monitor, detect, and respond to cyber incidents. We have established a security incident response plan, a business resiliency and event management framework, and disaster recovery mechanisms, which are tested and updated as needed to ensure we are prepared to respond to cyberattacks, data breaches, and physical security events.

To mitigate risks from technology evolution, OG&E's resources will evaluate new technologies and work with the Project team to incorporate such technologies if beneficial and in alignment with project scope, budget, schedule, and objectives. Potential mobile BESS deployment risk will be mitigated by adhering to manufacturer standards, applying mobile BESS lessons learned available through Edison Electric Institute (EEI), the Electric Power Research Institute (EPRI), and other industry groups, and utilizing specialized contractors and consultants during design and construction. Leveraging this experience, we can mitigate any deployment risk by relying on our lessons learned, supplier relationships, and internal processes built on past project innovations.

Material availability impacts much of the work we do. To mitigate material risks, we created a demand planning function where we provide demand reports to suppliers. These reports forecast expected material and equipment needs giving suppliers essential visibility to mitigate supply chain risks. In addition to early engagement with suppliers, we will further mitigate material risks by backloading items with long lead times and strategically scheduling work to account for any materials we are still trying to procure. We anticipate managing Adaptable Grid Project equipment in temporary inventory locations dedicated to the Project. This approach was a

process innovation from our Grid Enhancement Plan and will allow us to mitigate the risk of material availability and facilitate Buy America compliance tracking. Locations would be fully functional and staffed with OG&E employees or contractors. If we deploy this practice, inventory locations will be periodically reviewed, and moved or closed based on current and future work.

We intend to apply these existing demand management processes, leveraging our longstanding agreements with experienced contractors as needed, while also proactively seeking out new partnerships with skilled contractors, prioritizing minority, women, and veteran-owned businesses where possible. Domestic sourcing will also be prioritized; major suppliers will be surveyed to create visibility into manufacturing locations. Suppliers will be assessed utilizing the Supplier Risk Registration and Supplier Risk Assessment processes. Supply Chain will consider evaluating the suppliers based on their risk type and business criticality rankings within the Company's supplier management system (GEP). The suppliers are assessed, as deemed necessary, for information systems security, credit, safety, and business criticality during the onboarding process. A supplier risk assessment will be applied to all suppliers meeting a risk threshold used to support the Adaptable Grid Project. These initial assessments will identify high-risk suppliers for potential ongoing monitoring and reassessments. For suppliers deemed to be potential high-risk due to business criticality or information systems security risks, a third-party risk register will be maintained, detailing scores assigned to each of the risk categories assessed. The Supplier Risk Register is a risk management tool that acts as a central repository to record information about identified risks. The supply chain lead will circulate the Supplier Risk Register to OG&E's enterprise security team and schedule annual reviews with the Risk Oversight Committee. Enterprise Security will perform supplier security assessments and assign security scores on the supplier risk register. Supply Chain Leadership, Enterprise Security, and Safety Leadership will all monitor ongoing security risks and assist in developing mitigation plan(s). The assessment results will be part of the decision to do business with potential suppliers and continue doing business with existing ones. The scores, rankings, and mitigation plans will be documented in the Supplier Risk Register, as applicable.

Community and Labor Engagement

OG&E has a proven history of collaborating and engaging with our broader community, including Tribal entities, local governments, and various educational institutions. We understand that involving the community in our project planning stages and continual engagement positively impacts the overall success of a project. OG&E is meeting with community leaders throughout the state of Oklahoma with a focus on engaging historically disadvantaged or underrepresented communities in round table discussions. This process is iterative and begins by meeting with communities and listening to their needs. Throughout the entire project, our Community Engagement Lead will continue to communicate with our community stakeholders, providing status updates, and incorporating their feedback into change management decisions. This process will allow OG&E to stay current on the community's needs as we fulfill project objectives, while minimizing risks associated with community disputes.

To mitigate the possibilities of labor disputes, OG&E will provide a best-in-class employment opportunity to all employees hired to work on the Adaptable Grid Project. Employees have access to a Human Resources (HR) hotline where they can anonymously express concerns and are always encouraged to speak to their HR representative to address workplace issues. The result

of this focus on our workforce is reflected in our being ranked by Forbes as the second-best employer in Oklahoma.

Ensuring a Qualified Workforce

Throughout our 120+ years of operations and experience, OG&E has built a skilled, experienced team capable of tackling the ever-changing needs of our grid and our customers. To do this, we consistently focused on our workforce training and recruitment efforts to engage with our local communities and attract skilled candidates. OG&E has become one of the premier employers in Oklahoma by hiring and retaining talent through our dedicated recruitment processes and attractive benefits plans. Our employees enjoy an average wage nearly double that of the median household income for the West-South Central Region²⁵, a 401K Plan that matches at 200%, healthcare options, paid leave, and opportunities to increase their level of knowledge through tuition reimbursement and training and career development programs. These same benefits will be available to employees we hire to assist with the Project and beyond.

Our community and labor engagement practices will support our efforts to ensure a qualified workforce; we are currently committed to several programs that invest in our community and potential candidates for hire. We focus on diverse and inclusive hiring practices. We also offer training and apprenticeship programs to foster the next generation of talent and sustain our operations through employee retirement and turnover. Our recruitment and hiring practices provide a foundational pipeline from our community to OG&E's workforce.

Technical Qualifications and Resources

Project Team's Qualifications, Expertise, and Time Commitment

OG&E has a strong, experienced team in place to lead the execution of the Adaptable Grid Project. These key resources will provide project management, technical leadership of all sub-projects and work types, resource planning and contracting strategy, materials and supplies sourcing and management, and community engagement and execution of the CBP. Together, this group will have primary project delivery responsibilities. These key resources will be supported by additional staff made up of project managers, engineers, technicians, supply chain experts, and other support personnel, all experienced in their field. These personnel will be a matrixed organization, splitting their time between regular OG&E tasks and Project-specific work.

OG&E has deep experience deploying smart grid technologies from our prior grid enhancement efforts. OG&E internal and contractor/supplier resources engaged in this previous work developed processes and procedures that can be carried into the Adaptable Grid Project execution. As a result, OG&E's team is uniquely qualified and has the direct experience needed to successfully deliver the Project such that the end of project goal is achieved.

In addition to the project execution team, a grant office will be established utilizing resources to administer the grant, reporting and analytics, and oversight of project activities. The grant office will be staffed by personnel with extensive experience in leading smart grid type projects; these personnel will be heavily involved in grant project management and administration from

²⁵ Region includes TX, OK, AR, LA; 2021 income sourced from U.S. Census Bureau

application through execution. The grant office will also include subject matter experts focused on grid automation and mobile BESS work types.

The table below summarizes the qualifications of our key execution and grant office resources.

Key Resource	Project Role	Expertise
Kandace Smith, Mgr. Smart Grid	Grant Office Lead	19 years of electric company experience, including grid modernization, grid architecture, grid automation, interconnection standards, distribution planning and design, IT/OT integration, and real-time operating systems. Currently leading execution of OG&E's Grid Enhancement Plan.
Chris Marts, Sr. Grid Innovation Engineer	Grant Portfolio Manager	8 years of experience with OG&E across a range of engineering disciplines. Currently a Sr. Grid Innovation Engineer focused on developing and continuously improving OG&E's Grid Enhancement processes.
Brian Huckabay, Dir. Engineering Tech Services	Project Manager	15 years of progressive engineering, project management, asset management, and electric company operations leadership experience. Provides leadership for OG&E's Distribution Engineering, Asset Management, and Analytics and Performance Consulting teams.
Chris Lelak, Dir. Capital Projects	Substation Deployment Lead	Professional engineer and Project Management Professional with 20 years of electric company experience in substation, transmission, distribution, and power generation mega project management and construction. Director for delivery of substation, transmission, distribution, and large power generation and/or greenfield projects deploying annual spend ranging from \$200-\$300M per year.
Nicole Rhodes, Dir. T&D Construction Projects	Distribution Deployment Lead	Professional leader with over 20 years of progressive experience in operations management, lean manufacturing and cost performance initiatives, large-scale reorganizations, contractor management, safety, quality applications and product, service, and process development initiatives. Responsible for the project management, contracting strategy, resource planning, coordination, and execution of Grid Enhancement Projects through 2023.
Dusty Nimmo, Dir. Supply Chain	Supply Chain Lead	20 years of experience, including over 10 years at OG&E in strategic sourcing roles. Provides strategic direction to Supply Chain organization responsible for over \$1B in annual spend.
Lindsay Laird, Mgr. Community Outreach	Community Engagement Lead	17 years of experience in integrated marketing communications and philanthropy, including leading one of Oklahoma's largest private family foundation's \$85M gift to the Oklahoma City Community Foundation, including funding parameters, community evaluation committee selection, process updates, and all communications.
Jeremy Pearman, Mgr. Southern Region Engineering	Grid Automation Tower Lead	6 years of electric company experience, including a leading role in OG&E's Grid Enhancement Plan. Determined protective equipment to use on the distribution lines, how these devices were to coordinate with each other, and how to break up our circuits to self-heal as much of the circuit as possible. Created or checked all the protection settings and circuit reconfiguration settings before the projects were sent to construction.
Hermes Arevalo, Supervisor EV & DER Planning	Mobile BESS Tower Lead	Professional engineer with 20 years of electric company experience in distribution engineering, planning, and transmission operations. Lead OG&E efforts to integrate EVs and other DERs technologies as assets on the distribution system.

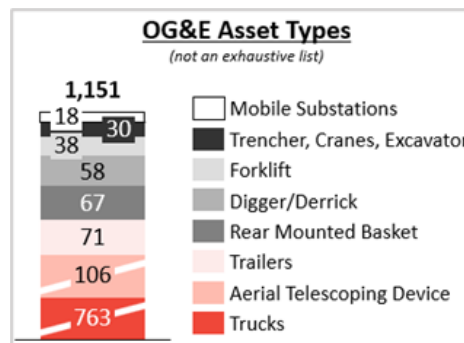
All these resources have deep experience in the roles they will perform for the work on this project through their prior experience at OG&E, including OG&E's prior grid enhancement efforts. OG&E will leverage its well-established relationships with contractors and suppliers to ensure the proper execution of this project, including those that were used in the prior grid

enhancement efforts. These teams of OG&E internal and contractor/supplier resources developed processes and procedures that can be utilized in the Adaptable Grid Project execution. This capable team is qualified to perform the Project work and deliver expected benefits.

Access to Equipment and Facilities Necessary to Accomplish Efforts

OG&E has four major storage locations for our T&D material storage and 16 district warehouses across our service area, along with our major distribution center. In addition to these assets, we have experience finding and leasing local laydown yards to support shorter-term projects.

OG&E owns and operates over 1,600 vehicles and heavy-duty machines across our service area. We will utilize the listed mobile assets and equipment provided by contractors. These assets are spread across 17 service centers, ready to be deployed as required. OG&E does not currently plan to build new facilities or purchase new equipment for the Project. As work progresses, OG&E will explore leasing additional facility locations as needed.



Prior Work Efforts & Demonstrated Innovations

OG&E has prior experience working on similar large-scale projects in partnership with the DOE. In 2009, OG&E received \$130M in federal grant funding as part of the Smart Grid Investment Grant (SGIG) of the American Recovery and Restoration Act (ARRA) to support the \$335M project to deploy a fully integrated advanced metering infrastructure (AMI) solution as well as distribution of in-home devices to selected customers. The program also allowed us to deploy a distribution management system. Additionally, OG&E collaborated with University of Oklahoma faculty and students to deploy energy-saving technologies within 46 buildings on the Norman, Oklahoma campus and took advantage of opportunities for smart grid education and training. The project was a partnership with customers aimed at reducing peak loads, overall electricity use, and operations and maintenance costs. OG&E installed over 823,000 smart meters across our service area and enrolled more than 44,000 customers into the SmartHours program, delivering 72MW of load reduction on peak-use days²⁶.

From this project, OG&E developed experience working on federally funded grants and developed tools and processes needed to support DOE project management and reporting requirements. These tools and processes are still in place and will be leveraged to execute the Adaptable Grid Project. This past work gave us experience working within our local community and directly with customers as we deployed energy management tools enabled by AMI and demand response, including the introduction of the time-based rate program SmartHours.

OG&E was the recipient of the 2013 Edison Award from the Edison Electric Institute (EEI) for our distinguished leadership and innovation in our SmartHours program that enabled customers to adjust their electricity use in the summer months to avoid higher prices. Also in 2013, Greentech Media named the program the Best Customer Engagement Project of the year. In 2018, the SmartHours program received this award for a second time. These recognitions demonstrate that this program was effectively managed and solidifies our ability to execute large-scale projects.

²⁶ [The Oklahoman News Article](#)

Before the Adaptable Grid Project was created, OG&E initiated its Grid Enhancement (GE) Plan, an integrated and comprehensive set of investments designed to provide value to customers by improving the strength and capabilities of the grid. The GE Plan included 48 investment categories for traditional infrastructure upgrades for resiliency and deployment of proven grid modernization technologies offering innovative automation capabilities. Investments included work on 95 substations, 204 distribution circuits, four mobile substations, two 4kV conversions, 11 technology applications, and 11 communication systems platforms. Our GE investments included the installation and upgrades of grid automation equipment that are similar to the proposed work of the Adaptable Grid Project. This expansive plan had a larger scale than the proposed Project but was executed using many of the same internal and external resources. Due to the volume of work conducted, we developed innovations in our process for forecasting and procuring equipment and developed techniques for streamlining internal and contractor resourcing. As part of this, we relied on collaboration with our trusted suppliers, many of which will also be engaged to work on the Adaptable Grid Project scope of work. Our demonstrated success executing our previous GE Plan and our ability to be innovative in our approach to work demonstrates we can mitigate deployment risk associated with the Project. We will continue to develop and build on lessons learned, innovations we have put in place, and trusted relationships with our contractors and suppliers.

Project Summary

The \$102M Adaptable Grid Project was designed to enable a future grid capable of serving the evolving needs of our customers in DACs and Tribal lands, while contributing to the economic growth of the region and facilitating advancement of our communities. Through adaptive technology and two mobile BESS, we will enable automated response to faults, increase visibility into real-time operations, and provide the flexibility required to prevent substation overloading and defer time- and capital-intensive capacity projects. Additionally, the Project will support and facilitate federal, state, Tribal, and local energy strategies, including the further development of energy emergency plans, expansion of electrification, integration of DERs, and mitigation of impacts from extreme weather.