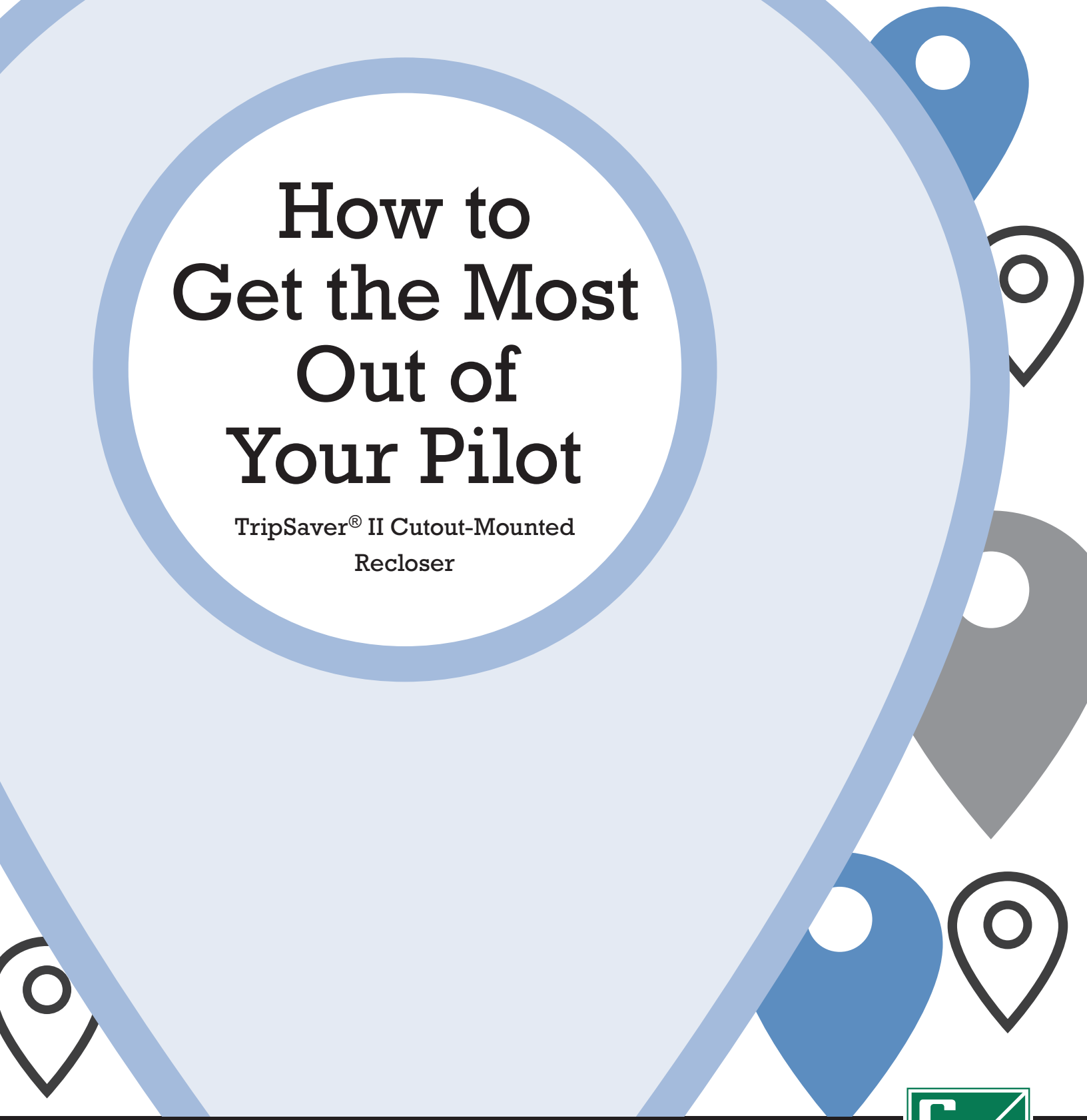
How to Get the Most Out of Your Pilot

TripSaver® II Cutout-Mounted Recloser



Excellence Through Innovation

Thinking about running a TripSaver® II Cutout-Mounted Recloser pilot? Or maybe you've already started one and want to check whether you're optimizing it for the best results? Though you may be accustomed to running pilots on your system, every new device brings new considerations and best practices to your team. This guidebook will help ensure you're on the right track and ultimately deduce the reliability and financial benefits of your pilot.

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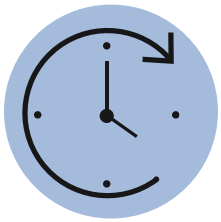
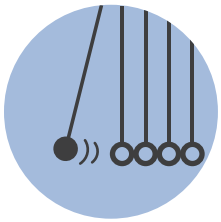
1 Why Should You Run a Pilot?



It's overdue.

Do you feel the pain of your utility maintaining the status quo—the lost cost from work inefficiencies or your customers calling for higher reliability? Can you remember the last time you evaluated your protection settings? Decades have probably gone by since you made changes; meanwhile, your system and customer expectations have changed drastically. Use this pilot to prove the claims and determine where you can optimize, simplify, save, and ultimately provide more reliable power.



It's impactful.

Every system has poor-performing feeders with multiple outages—and therefore an immediate need to improve. These particular areas on your grid affect your customers, and you owe it to them to eliminate the temporary and permanent faults that could be avoided altogether with TripSaver II reclosers.

It's verifiable.

Although suppliers are responsible for thoroughly testing devices, often utilities want to see for themselves whether the devices work properly, are easy to use, and are safe for their crews. A pilot allows TripSaver II reclosers to demonstrate their functionality and for crews to become familiar working with reclosers, which are intuitive and safer than fuses.

It's economical.

TripSaver II reclosers make you more productive by dramatically reducing your operation and maintenance expenses, particularly how much you spend on truck rolls and how much you save your customers by keeping their homes and business up and running. If you plan, set measurements, and effectively execute your pilot, you'll be able to calculate your company's long-term savings.

It's predictable.

Many utilities piloting new devices already have a good idea of the outcome. Some have sophisticated data models, some rely on manual calculations, and some intuit results based on years of experience. No matter the method, your pilot is ultimately meant to validate expectations. This is important because a larger rollout depends on the accuracy and confidence in your predictions.

Setting Your Scope

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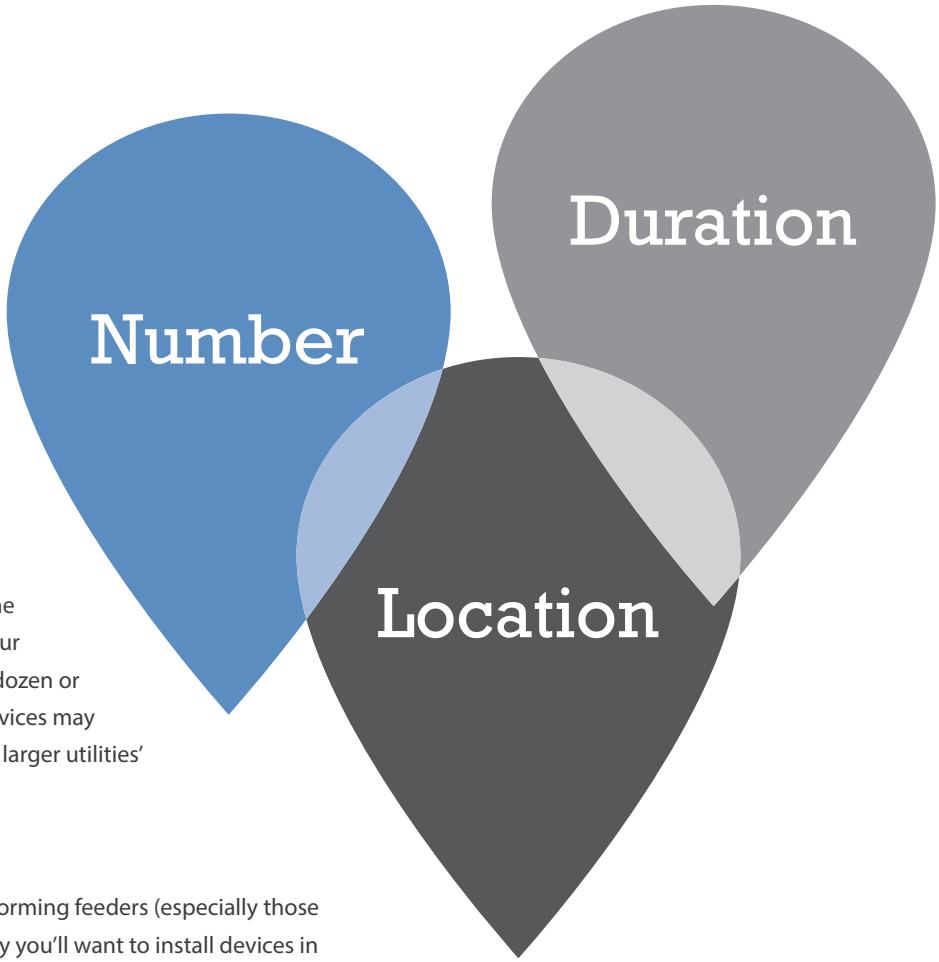
Even the most experienced teams can waste time deliberating the sheer scope of a pilot. Or teams might begin a pilot with good intentions, but without first defining the scope, a project can quickly become unfocused or fall unattended. Use these three parameters to outline an effective pilot program:



Number of Devices

The exact number would depend on the size of your utility, your budget, and your staff. Smaller utilities may need only a dozen or so devices, whereas upwards of 100 devices may be a more proportional sample size for larger utilities' systems and crews.

Location of Devices

Ultimately, you're after your worst-performing feeders (especially those with frequent interruptions), and ideally you'll want to install devices in multiples areas of your system, so your pilot accurately represents your system as a whole. Determining these locations starts with your system's outage data. Line crews will also know which troublesome areas of your system they travel to regularly, and you may have neighborhoods with particularly vocal or influential customers you may want to prioritize.

Duration of Project

Anywhere from three to 12 months. At three months, you should have collected enough data to extrapolate the long-term benefits of the devices. However, make sure your pilot is running during times of the year that tend to be more challenging for you, whether that's extreme weather seasons or months when wildlife migrates through your territory.

3 What Does Success Look Like?

As with any project, unless you set goals, you won't know whether your project was successful. You must start with the end in mind and, at the very least, be out to prove that the TripSaver II reclosers can avoid permanent faults and eliminate blinks for customers upstream of those laterals.

There are a variety of ways to define success for a TripSaver II recloser pilot, and considering several performance angles prepares you for later conversations you may have with multiple internal departments with different priorities and motivations. Here are the top measurements to consider:

Reliability Improvements

Your company likely has set reliability-improvement goals, or there may be certain trouble spots on your system that need more attention. Set your pilot's goals to align with the metrics or targeted improvements your utility wants to achieve. Besides the frequency and duration of outages you're reducing, also track the momentary outages and their impact TripSaver II reclosers save you as well. The reclosers also collect real-time data, so installing them offers the layered benefit of system intelligence that can be used to inform outage responses and future grid-modernization efforts.

Financial Justification

At the core of any system-improvement initiative are its resulting financial benefits. With TripSaver II reclosers' ability to improve operational efficiency, there are multiple financial models available to measure savings, such as costs avoided from reducing truck rolls or estimated payback timelines (see page 7 for more details). Running a pilot provides you with the data needed to justify the devices' value.

Operational Check

Pilots are often used to identify any unique ordering, installation, or procedural considerations for a new device at a utility. Part of your pilot's success is understanding how the TripSaver II reclosers will function specifically on your system and what you may need for a wide-scale deployment.

Safety Verification

No utility will install technologies that could jeopardize its crews. TripSaver II reclosers are superior to fuses in both functionality and safety; they don't expel fragments like fuses do, and they can be safely opened and de-energized manually to perform other work around them. Your pilot is an opportunity to prove TripSaver II reclosers are a safe option for your own teams. Additionally, TripSaver II reclosers will eliminate needless truck rolls and reduce the amount of time your crews spend in harm's way.

Do you have definitions of success beyond these? Some utilities have additional measures of success that align with corporate missions, such as sustainability or grid-modernization initiatives. Think about how TripSaver II reclosers can factor into these top-tier priorities as well.

Pilot Set-Up Checklist

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Though you may be used to running pilots, testing a new device may require new preparations. Use this checklist to confirm you're ready to move forward with the pilot:

STEPS FOR SET-UP	COMPLETE
SET GOALS FOR YOUR PILOT	
You have set goals for your pilot (i.e., reliability improvements, operational performance, and/or financial).	
You have defined how you will track performance measured against these goals.	
PREPARE YOUR TEAM	
You have determined the project manager for your pilot.	
You have assigned team members responsible for tracking these goals.	
Your standards engineers have been trained and have the software to analyze and configure devices.	
Your line crews and operations teams have been trained and have the appropriate equipment to perform their jobs.	
CHOOSE YOUR INSTALLATION LOCATIONS	
You have selected areas of your system based on your worst-performing feeders or highest-priority areas.	
You located areas for the devices that are spread across your system to provide an accurate representation of your territory.	
DETERMINE DEVICE SETTINGS, AND CONFIGURE DEVICES	
You have conducted a coordination study (or have hired a supplier to do so on your behalf).	
You have determined the appropriate protection settings for your system.	
You have assigned who's responsible for configuring devices (whether internal or an outside supplier).	
MAKE AN INSTALLATION PLAN	
You have defined an installation start and end date.	
You have secured the budget with your financial teams.	
You have scheduled installation to align with when the budget is ready for spending.	
You have scheduled installation to avoid risky weather cycles.	
COLLECT DATA, AND BUILD A BUSINESS CASE	
You know the data you will collect from your devices.	
You know how you will collect data from your devices.	
You have identified who can help build a business case from the pilot.	

PRO TIP:

You might be unfamiliar with TripSaver II reclosers and may not feel comfortable teaching while you, too, are learning about them. S&C can help prepare a curriculum and train or co-train with you. Don't skip this step; your teams' product knowledge and execution are critical to the success of your pilot.

5 Common Missteps and Mistakes

Because pilots are test projects, they can easily fall by the wayside when more pressing issues arise. Be sure to avoid these common errors that can occur when balancing other day-to-day responsibilities:

Not involving line crews early

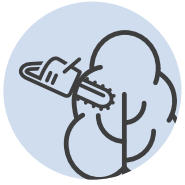
Line crews will be the ones interacting with the TripSaver II reclosers the most. Including them in applicable pilot planning and providing thorough installation and operations training is critical to the pilot beginning and running smoothly.

Skimming over training

Lack of training can lead to your teams' dissatisfaction and frustration with any pilot project before realizing its benefits. Thorough training is critical for all team members who will be configuring, installing, working, and collecting data from the devices.

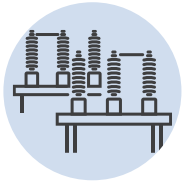
Not installing devices immediately

Every day you delay your pilot you delay the savings you'll see in the short term from the TripSaver II reclosers as well as the expanded long-term benefits from a widescale deployment. If you've planned your pilot thoroughly so installation aligns with your budget and teams' work schedule, delays could risk missing your installation window, forcing you to forfeit work orders or team members to new jobs or urgent issues that cropped up in the meantime.



Installing devices where you've recently trimmed trees or in trouble-free spots on your system

Pilots should be designed to show how the devices operate when issues arise on the grid. If you place devices in areas of your system that generally don't see much activity, or if you trim trees and mitigate one of the core problems TripSaver II reclosers resolve, you're not providing the devices an opportunity to operate—therefore eliminating the intention of testing how the devices respond to common problems.



Running other grid-modernization pilots in the same areas

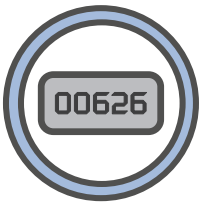
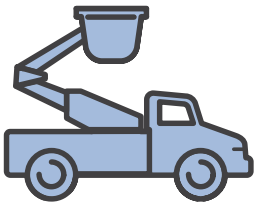
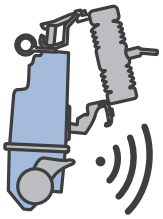
Think of pilots as being an experiment, and test only one variable at a time. If you install other devices or upgrades that coincide with your TripSaver II recloser pilot, you won't know which variable improved your system.

Waiting to collect data

Many times, utilities can see TripSaver II reclosers' benefits within months. But no pilot should last longer than a year. Within a year, the reclosers will have been exposed to the elements your system typically sees, and you'll know how the devices responded. In your pilot's plan, schedule an end date and time dedicated to collecting and reviewing data. A year's worth of data makes it easy to extrapolate the returns your system will see annually.

Ways to Collect Data

If you strategically placed your TripSaver II reclosers in areas of your grid where they are likely to operate, you should be ready to collect data three to 12 months after installation. The reclosers' data are integral for building a business case for their investment. Depending on your teams' resources, there are three ways you can collect data from the devices:

SMART METER OR SENSOR ANALYSIS	FIELD COLLECTION	DEVICES' COMMUNICATIONS
		
Recommended for: Utilities that have thoroughly integrated smart meters and sensors onto their system	**Recommended for:** Utilities that have field staff to assign to data collection from the devices	**Recommended for:** Utilities that have recently considered TripSaver II reclosers and can purchase units with communications capabilities
What You'll Need: Your engineering technicians to analyze data collected from smart meters already on your system	**What You'll Need:** S&C's magnet tool and Cordless Power Module, the reclosers' serial numbers, a laptop, and trained line workers to collect data and download it onto the laptop	**What You'll Need:** TripSaver II reclosers with communications options
Benefits: No need to purchase additional equipment, but your staff will have to reserve time to analyze the data	**Benefits:** Makes it possible to collect data from reclosers that don't have communications. Data collection can be conducted internally or be outsourced to S&C	**Benefits:** Data are collected instantaneously, and communications are used for operational enhancements

7 Building Your Business Case

No utility will move forward with a large project without some sort of financial justification. There are a few ways to transform TripSaver II recloser pilot data into a business case for wider deployment. It's worth considering multiple financial models to assess big-picture savings.

Payback

This is how quickly you recoup the costs of buying and installing TripSaver II reclosers. Because TripSaver II devices significantly reduce operations and maintenance expenses (particularly truck rolls), typically utilities see payback within a few years—a stark contrast to the payback for a typical AMI overhaul, which averages a dozen years!

Cost to Customers

While there are obvious costs to you as a utility, outages cost your customers as well. Especially if convincing your communities will be an important step in moving forward with a widescale TripSaver II recloser deployment, see how much outages cost both your residential and commercial/industrial customers using the Department of Energy's Interruption Cost Estimates (ICE) Calculator: **icecalculator.com.**

Total Cost of Ownership (TCO)

TCO considers both the purchasing price as well as maintenance and operation costs over time. For example, you may be considering a lower-cost product, but it requires significant upgrades and care from year to year. If these upkeep costs are high or frequent, you may actually save money by purchasing a more expensive product that doesn't require as much maintenance.

Net Present Value (NPV)

NPV measures the profitability of an investment over time. Sometimes short-term or quickly profitable projects seem to be no-brainer decisions, but often the higher cost, up-front investment reaps greater value in the long run. NPV allows you to determine which decisions have a more profitable, long-term potential and translate a holistic investment's value into today's dollars.

PRO TIP: Are you underestimating truck roll costs? There's the cost of the truck to consider, including the gas and insurance, plus the wages for your crews, which might spike into hazard or overtime pays brackets (including unused time for overtime minimums) because truck rolls often occur during severe weather.

Next Steps

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Remember: A pilot is a step forward toward widescale deployment.

The reason you ran a pilot was to calculate the long-term benefits to your entire system, crews, and company. Having executed your pilot correctly, you should have the information you need to validate why your pilot should become a company-wide initiative.

Your business case is one of the strongest arguments for widescale deployment. Many methods are made to forecast when you'll reach your payback or hurdle rate. Yet the benefits extend beyond that point. You'll continue to see value even after you meet your threshold by instituting perpetual savings from widescale deployment. As your system ages and infrastructure continues to deteriorate, TripSaver II reclosers will become ever more necessary to mitigate the increasing issues your system is bound to see—reason to start right away.

If developing your business case and explaining your project's long-term value isn't in your wheelhouse, S&C is here to help create a justification for you, prepare a plan to present to decision-makers, and walk with you through every step of deployment

Don't stop here.

Your pilot is just the beginning….

Tackle Your TripSaver® II Recloser Pilot at **sandc.com/tripsaver**

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