Itron

ESG REPORT

PROVEN BENEFITS OF THE SMART GRID

2022 EDITION

environmental social governance

About this Presentation

Proven Benefits: Smart grid successes from Itron's customers

THE CONTENT IN THIS PRESENTATION:

- Is comprised of publicly-sourced data and testimonials from Itron customers.
- Consists of proven use cases of our solutions at work to increase efficiency for our utility and city customers.
- Highlights how Itron is providing utilities and cities with the tools to manage changing infrastructure, environmental and social needs.
- Showcases our partnership with utilities and cities to provide the people they serve with a better quality of life, all around the world.

Itron's ESG Approach

- **Itron is dedicated to creating a more resourceful world**. For over 5,000 employees around the world, this is much more than a tagline—**it's our purpose**.
- This purpose is central to our **environmental**, **social and governance** (ESG) strategy.
- ESG at Itron leverages a holistic approach that integrates with our strategic, operational and risk management efforts.
- Our strategy represents the long-term view of **sustainability, inclusion and accountability** of our key stakeholders, including: employees, customers, communities and investors.
- We are a member of the U.N. Global Compact and our work supports and directly aligns with multiple U.N. Sustainable Development Goals (SDGs).

THE GLOBAL COMPACT
WE SUPPORT

ENVIRONMENTAL AND OPERATIONAL STEWARDSHIP

SOLUTION IMPACT AND COMMUNITY INVOLVEMENT

INCLUSION AND OUR HUMAN CAPITAL PLEDGE

EFFECTIVE SHAREHOLDER ADVOCACY

Itron's ESG Approach

Our ESG strategy is centered around four key pillars, each led by an executive sponsor

IMPROVING OUR ENVIRONMENTAL IMPACT

How we run our company with an eye toward sustainability.

PROVIDING SUSTAINABLE SOLUTIONS

How we help our customers succeed, including helping them achieve their environmental goals and business objectives.

SUPPORTING OUR PEOPLE AND COMMUNITIES

How we uphold our commitment to employees and communities across the globe.

OPERATING WITH INTEGRITY

How we strive to do the right thing. Always.

2022 ESG Highlights

Providing Sustainable Solutions:

At least
4.9M+ **metric tons** of customer GHG emissions avoided

In one year, this is equivalent to*:

- **1.1M** gasoline powered cars
- **+12** natural gas-fired power plants
- **953k** homes' electricity use

Improving Our Environmental Impact:

Set targets to:

- Reduce Scope 1 and Scope 2 GHG emissions **>50%** reduction by 2028
- Make operations carbon neutral by 2035
- Achieve net zero emissions by 2050

28%
reduction in total GHG emissions vs. 2021

88%
of manufacturing facilities **certified to ISO 14001**

*Examples based on 4.9M metric tons and data generated here.

Supporting Our People and Communities:

90%
of employees see a clear connection between their work and Itron's purpose

60,000+
hours of professional training and development logged by employees

$1.1M
in corporate philanthropy and community (or educational program) investments

375
causes supported through Itron Gives corporate and employee giving and volunteer program

Operating with Integrity:

Our Board of Directors is **88% independent**

38%
female Board of Directors representation

Signatory to the **United Nations Global Compact**

"Leader" category by MSCI &
"Low risk" profile by Sustainalytics

Smart Grid Benefits: **Proven, At Scale**

- 5.0M IPv6 electric meters with 3B+ readings per month
- 5.1M minutes of avoided customer interruptions per year

- 410k customers enrolled & 460k devices deployed
- 400 MW of available load

- 3.5M IPv6 electric meters, high non-technical loss and reliability benefits
- $100M+ operational costs reduction returned to customers each year

- $25M annual consumers savings from eliminated fees
- 94% Reduction of outage calls due to customers outage notification system

- 650k IPv6 electric meters, data analytics using 5-minute interval data
- 93% savings replacing distribution lines, 98% success finding stray voltage

Intangible* Smart Grid Benefits

Many operational benefits of the smart grid can be easily quantified—but some are more intangible in nature

SOCIETAL

- Improved **customer satisfaction** and engagement
- Reduced **environmental impact**
- Increased **economic output**
- Increased **fairness**
- Improved **service quality**

UTILITY

- Increased **safety** for utility workers and customers
- Enhanced **visibility** into the grid
- Improved integration of **new generation sources**
- More **effective rate design**
- **Reduced planning** efforts

Note: Intangible benefits are typically not quantified as part of the smart grid business case.

Leverage Industry Best Practices to Capture Value

Itron's approach to helping our customers succeed

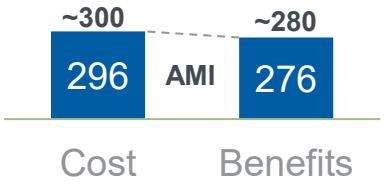
 PROVEN SOLUTIONS	Proven solutions drive shorter development, integration and deployment times
 CUSTOMER ENGAGEMENT	Technology is not enough—deep engagement with customers is critical to ensure benefits are realized
 MULTI-APPLICATION PLATFORM	Deploying a unified platform decreases systems integration complexities and accelerates benefit capture
 INTEROPERABILITY	Standards based technologies decreases deployment complexity and ensures timely benefit delivery

Proven Deployments for Advanced Metering Infrastructure

Increase Benefits as Utilities Add Applications

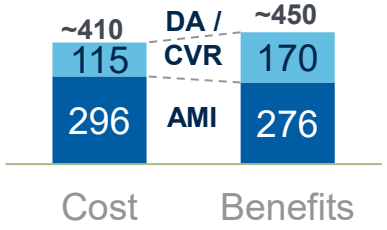
Average NA Smart Grid Business Case*

$/customer, electric only, PV over 20 years



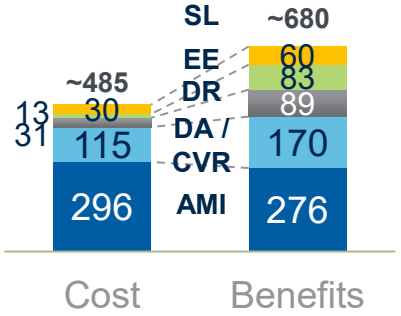
The average AMI business case is close to breakeven

B/C ratio: ~0.9



Adding DA & CVR can create a positive business case without any consumer behavioral change

B/C ratio: ~1.1



Engaging customers with DR/EE programs and adding Streetlights creates additional benefits and new business model opportunities

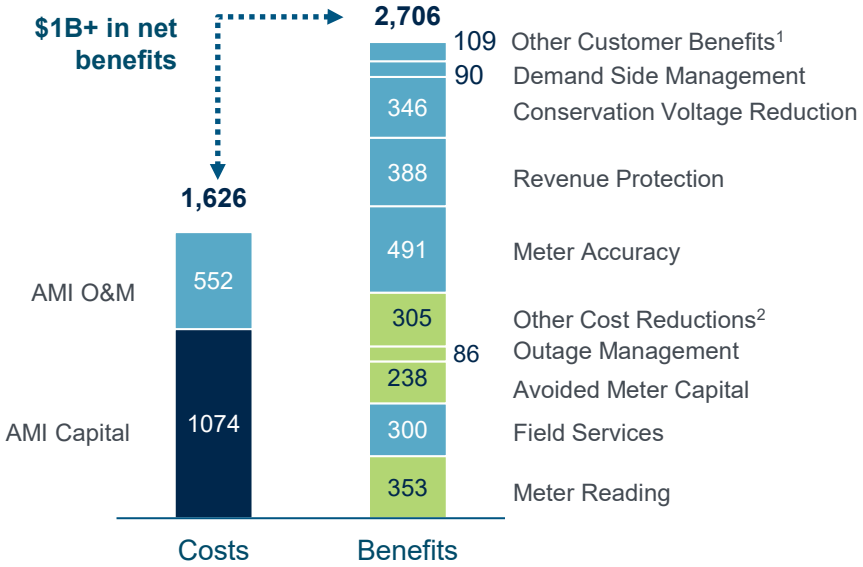
B/C ratio: ~1.4

* Based on publicly available U.S. smart grid business/rate cases and includes Itron internal estimates. AMI – Advanced Metering Infrastructure, DA – Distribution Automation, CVR – Conservation Voltage Reduction, DR – Demand Response, EE – Energy Efficiency (Portal), SL – Streetlights

$1B+ in Net Benefits and a Foundation for REV

COSTS AND BENEFITS

$ million customer across 3.9M electric and 1.3M gas customers, 20 year NPV @ 6.1%, 5 year deployment



Customer and company benefits

Cost reduction benefits

A high-performing AMI system enables significant customer and company benefits:

- Real-time monitoring of energy usage
- Grid intelligence for outage management
- Precise, granular voltage data for grid efficiency & control
- Flexibility for future programs (e.g., real-time pricing programs, sensors)

Significant savings expected as consumers take advantage of new energy-saving services available through AMI

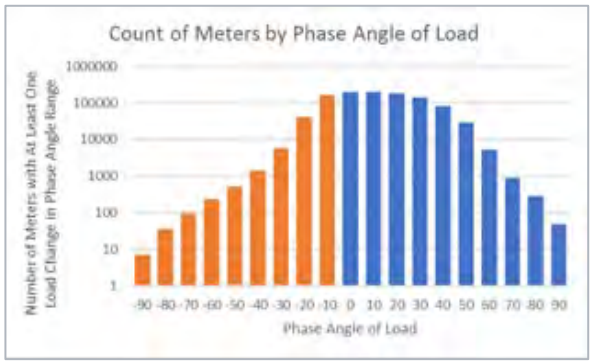
Additionally, the AMI solution enables the New York Commissions energy and marketplace REV program vision

1. Includes reduction in bad debt and inactive meter consumption. 2. Includes reduced costs associated with interval metering, gas meters, call center, billing, meter reading support, distribution, solar and system retirement. Source: ConEdison Advanced Metering Infrastructure Business Plan, November 2015

(Un)Expected Benefits of Distributed Intelligence

DESCRIPTION

- Tampa Electric serves more then 750k customers
- TECO is making a transformational investment in new customer experience and operational programs
- TECO started a field pilot in 2021, with three distributed intelligence apps deployed in over 200,000 meters



Examples of High Impedance and Negative Angle of Load found by DI apps

FIRST RESULTS[1]

92% Success rate of identifying high impedance connections

100% Successful location awareness electrical connectivity identification

~40% Of meters have a leading phase angle

DI apps also identified:

- Voltage outside of tolerances
- Meter bypass theft

1. TECO DTECH 2022

Tracking Performance and Impact

DESCRIPTION

- CPS Energy is the largest municipally owned natural gas and electric utility in the US.
- Has deployed ~822k electric and ~347k gas AMI endpoints and uses Itron's IEE MDM. Also uses the same network for 1.5k DA devices with plans to double those counts in the future
- In the future, CPS plans to use this as a platform for more self-serve capabilities, forecasting operations, and other future products & services

A CPS Customer Representative using AMI technology to execute a reconnect immediately

RESULTS

82%	Reduction in manual meter reads[1]
53%	Reduction in truck rolls[2]
21%	Increase of 'Top Tier' service level[2]
87%	Increase of reconnects & disconnects[2]
7 min	SAIDI Improvement[3]
Smart Electric Power Alliance	2017 Public Power Utility of the Year

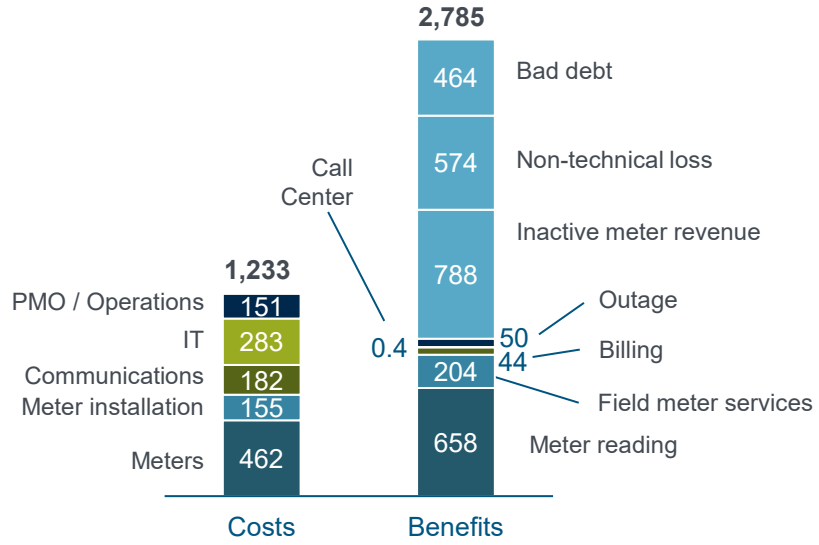
1. Customer Connections, comparing 2015 with 2017 2. Comparing 2016 with 2017 3. Source: IUW 2019 Customer Presentation

$2.8B in Benefits from AMI Alone

ComEd
An Exelon Company

COSTS AND BENEFITS

$ millions across 4.1M customers, 20 year NPV @ 4.27%, 5 year deployment



	ComEd	U.S. Average
Benefit-cost ratio	2.26[1]	1.0-1.1
AMI utility benefits as % of costs	78%	60-70%

Customer benefits

1. As of 2/27/14, ComEd's smart grid business case has a benefit-to-cost of 2.0, largely due to lower assumed energy costs.
Source: Black & Veatch AMI Evaluation Final Report, July 2011.

AMI Projects are High Stakes

Well-executed projects can lead to significant customer benefits and local job creation as demonstrated by ComEd

ComEd
An Exelon Company

EXAMPLES OF SOCIETAL BENEFITS

"ComEd asked for an $11.5 million decrease for the delivery of electricity compared to rates in effect [beginning of the] year." *Smart Grid Today, 4/17/2020*

"ComEd has far exceeded the commitment to create at least 2,000 full-time equivalent jobs during it's peak program year and created 4,285 full-time equivalent positions in 2016." *ComEd Progress Report, 4/01/2017*

59M SQ. FEET IN FACILITIES & $6.7B IN CAPITAL INVESTMENT ENABLED[1]

"ComEd's continued infrastructure investment aimed at modernizing and bringing innovative digital equipment to the grid is an important component to Illinois' economic growth efforts. We are pleased to see utility-industry, record-setting, reliability performance which provides businesses the assurance that Illinois is the right place for their continued growth and investment." *Jim Schultz, CEO of Intersect Illinois; Smart Grid Today, 2/03/2017*

1. Source: Smart Grid Today

Successfully Achieving AMI Goals

ComEd
An Exelon Company

DESCRIPTION

- ComEd has successfully achieved several AMI-related performance goals, which include reductions in:
  - Issuance of estimated bills
  - Consumption on inactive meters
  - Unaccounted for energy (i.e., non-technical loss such as theft)
  - Uncollectible expenses
- Achievement of these metrics create customer benefits in the form of multiple rate decreases.

RESULTS[1]

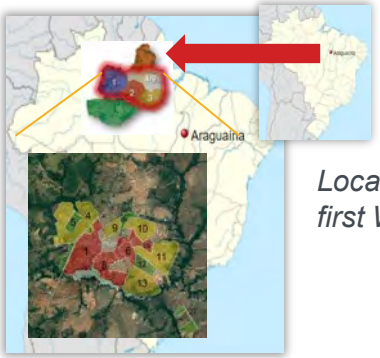
6.9M	Reduced estimated bills (121% of target)
475 GWh	Reduced consumption on inactive meters (158% of target)
1442 GWh	Reduced unaccounted for energy (485% of target)
$28M	Reduction in uncollectible expense (124% of target)

[1] Source: Multi Year Performance Metrics Annual Report for the Year Ending December 31, 2022

Reducing Water Losses

DESCRIPTION

- BRK Water & Wastewater serves 15M people across 185 municipalities and 12 states in Brazil. Poor water management and wastewater collection & treatment in Brazil are challenges that need to be overcome
- BRK contracted Itron for an integrated, risk free and innovative Water Operations Management solution in Araguaína covering 60k water endpoints with a monthly water loss of 473k m^3



Location of BRK's first WOM project

RESULTS[1]

29%	Reduction in physical losses (PRV areas)
25%	Reduction in leakages (VFD areas)
23%	Reduction physical losses (VFD areas)

1. Presentation IUW 2019

Making Technology Work For You

DESCRIPTION

- CenterPoint Energy (CNP) serves approximately 2.4M metered electricity and 3.3M gas customers in 6 states
- The two primary drivers for CNP were to provide the most efficient and reliable delivery of gas and electricity to their customers and to support the requirements of Texas' deregulated retail energy market

"We need to listen to and understand our customer, we need to embrace technology and make it work for us."
- Scott Prohaska, CEO of CenterPoint Energy

RESULTS[1]

$25M	Annual consumers savings from eliminated fees
99.9%	Reduction of estimated billings
24/7	Extended hours of operations for remote reconnects
15.6	Metric tons of CO2 avoided
17.3M	Truck rolls avoided
94%	Reduction of outage calls due to customers outage notification system

1. CenterPoint Keynote IUW 2017

Water Conservation Using Analytics

DESCRIPTION

- South Jordan, Utah is a city of 75k people close to Salt Lake City. They have seen a steady population growth that puts a strain on the limited and unreliable water resources
- South Jordan implemented Itron's fixed network solution, Itron analytics, a customer portal and a leak detection system. South Jordan also created rebate programs, workshops and implemented utility bill changes to help citizens to save water
- Looking towards the future, South Jordan wants to reduce its water consumption by 25% by 2025

Map indicating possible leaks in South Jordan

BENEFITS REPORTED[1]

9% Reduction of Gallons per capita per day, beating their goal by ~5%

58% Success rate of residents pro-actively fixing leaks

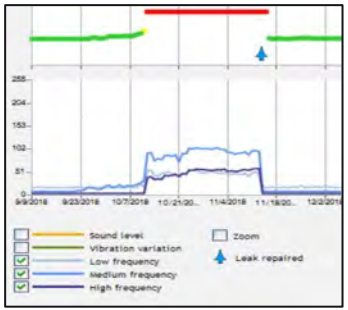
1. Water Conservation Using Analytics IUW 2018

Reducing Unaccounted-For Water

WARREN SIMPSON BUTLER COUNTY WATER DISTRICTS

DESCRIPTION

- Warren County Water District (WCWD) is Kentucky's second largest water district. Through a joint operations agreement, WCWD also operates and manages Simpson County Water District (SCWD) and Butler County Water System (BCWS)
- After a successful pilot in 2018, WCWD deployed 18k water Itron ERTs and 9,800 leak sensors
- Historically, unaccounted for water was around 20%



Example of a leak found and repaired during the project

RESULTS[1]

$1-2k Net labor savings per month

362 Gallons per minute in leaks found and repaired

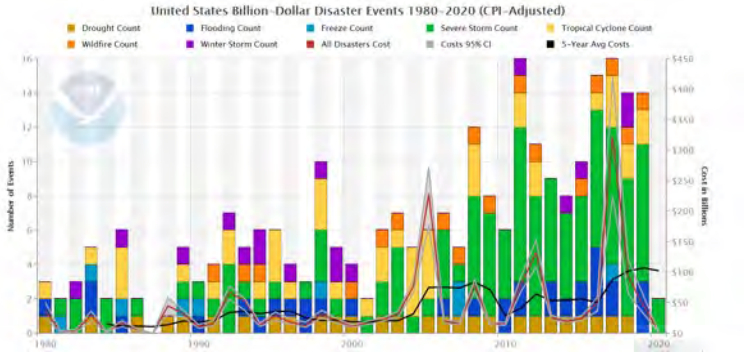
1. Presentation KRWA 2019

Navigating Environmental Events with Advanced Metering Infrastructure

Disaster Preparedness: 2019 Survey Findings

DESCRIPTION

- In 2019, there were 14 separate billion-dollar weather and climate disaster events across the United States, with a total cost of $45.0 billion. The total cost over the last 3 years (2017-2019) exceeds $460.0 billion.
- Utilities are challenged by increased frequency of extreme weather events but also because the solutions to the climate crisis (EVs, DERs, environmental standards) puts pressure on the grid.



Billion-Dollar Disaster Event Types by Year (CPI-Adjusted)[1]

SURVEY RESULTS[2]

88%	Of utility executives are very or extremely concerned about more frequent disasters
86%	Of utility execs are extremely or very concerned about integrating renewables
85%	Of utility execs are extremely or very concerned about EVs
90%	Of utility executives are very or extremely concerned about meeting environmental mandates
47%	Of consumers say their utility is extremely or very prepared for future challenges

1. NOAA Billion-Dollar Time Series 2. Itron 2021 Disaster Preparedness Survey

Storm Response: Hurricane Harvey

DESCRIPTION

- CenterPoint Energy (CNP) serves approximately 2.4M metered electricity and 3.3M gas customers across Arkansas, Louisiana, Minnesota, Mississippi, Oklahoma, and Texas
- Hurricane Harvey was a Category 4 storm with 130 mph sustained winds, 52” of rain (more than the 10 year average) and ~42k lightning strikes
- The use of real-time AMI data to assess, monitor and resolve cases aided in developing better situational awareness and allowed CenterPoint to correlate weather and flooding information with outages, providing operations with critical decision-making tools

AMI technology was used to comply with a Mayoral order to disconnect all customers in a mandatory evacuation zone that was impacted by flooding

RESULTS[1]

1.3M	Customers restored
45k	Remote orders at 97% performance during event
352k	Outage notifications delivered
700k	Meters billed with actual readings during event

EEI Emergency Response Award 2018

1. Source: ERCOT Board of Directors - CenterPoint Energy’s Response to Hurricane Harvey, Centerpoint Webinar on Harvey Storm Response, EEI Awards 2018

Increasing Extreme Weather from Climate Change

ComEd
An Exelon Company

DESCRIPTION

- In August when a derecho of historic magnitude directly struck the entire ComEd service territory, knocking out power to approximately 800,000 customers. This storm produced 13 tornadoes, hurricane force winds with gusts over 90mph, golf ball sized hail and many lightning strokes.
- In addition to AMI, Comed has 7k DA Devices (Reclosers, Capacitor banks and FCIs) with plans to more than quadruple those counts in the future

August 2020 Derecho over Chicago

RESULTS

700k Additional customer outages avoided due to smart grid and other technology

500k Customers restored within 24 hours

1. ComEd 2020 Reliability Report

Tropical Storm Isias: Faster Restoration

Orange & Rockland

DESCRIPTION

- Orange & Rockland (O&R) serves 300k customers in NY and NJ and is wholly owned by Consolidated Edison
- In August 2020, Tropical Storm Isaias strengthened well beyond forecasted levels hours before landfall, requiring Orange & Rockland Utilities (O&R) to ramp up communications to customers quickly

Damage from Tropical Storm Isias

RESULTS[1]

3000 Truck rolls avoided

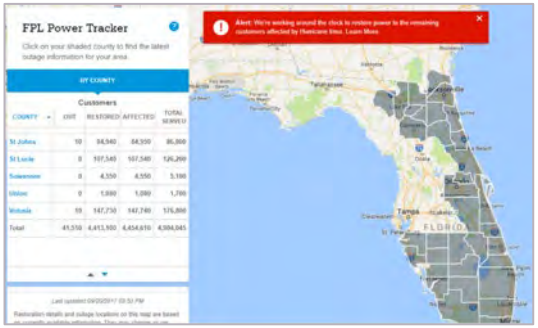
97% Restoration within 100 hours

1. The Edison Foundation: Electric Company Smart Meter Deployments: Foundation for a Smart Grid (2021 Update)

Historic Storm Restoration: Hurricane Irma

DESCRIPTION

- Hurricane Irma caused destruction and power outages across all of Florida in 2017. The natural disaster hit FPL's territories particularly hard, causing 4.4M outages
- Automated Feeder Switches rerouted electricity around faults, preventing customer outages
- AMI meters and Fault Indicators quickly identified where faults occurred, expediting power restoration



"The fastest restoration of the largest amount of people by any one utility in U.S. history." *Eric Silagy, President and CEO of FPL*[2]

FPL Power Tracker shows ~4.4M outages restored within ~10 days

RESULTS

546k	*Customer outages avoided helped by smart switches*[1]
2M	*Customer outages restored within one day*[1]
4.4M	*Customer outages restored in 10 days*[2]

STATEWIDE RESULTS[4]

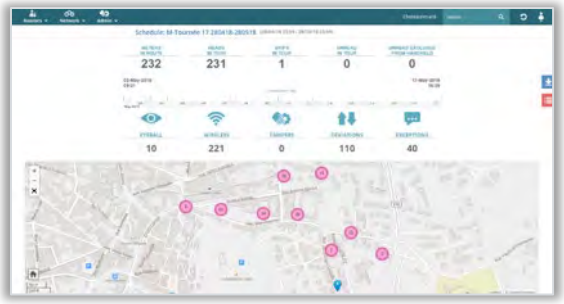
112M	*Customer interruption hours avoided*
$1.7B	*Benefits delivered from one single event*

1. Smart Grid Today 2. TD World article 3. News article ;
4. NIST Technical Note 2137 Quantifying Operational Resilience Benefits of the Smart Grid

Apparent Loss Reductions

DESCRIPTION

- Regideso is the national water utility of Burundi and has deployed Itron's Temetra solution for one DMA, serving 50k water connections
- Regideso wanted to identify the root cause of abnormal consumption as well as prioritize actions and optimize field work
- Temetra allowed an intelligent detection of abnormal consumption patterns and prioritize issues based on high cost or severity



Temetra dashboard

RESULTS[1]

12%	Decrease in non-revenue water
10%	Billing Gain
7k	Blocked meters detected and replaced
2.5k+	Connections Found

Source: Data provided by the Project team and Regideso

Monitoring and Managing Wastewater Flow

MIAMI-DADE COUNTY WATER AND SEWER

DESCRIPTION

- Miami-Dade is implementing wastewater technology to streamline operations, increase efficiency and support new residential and commercial development with technology from Itron, US3 and the Avanti Corp.
- The technology also assists in minimizing the number of sewer pipe blockages, breaks and spills
- Advanced analytics software imports water consumption and sewer flow data to determine if inflow and infiltration of wastewater systems is present
- Maintenance crews then make repairs in the right places

"With enhanced visibility into our operations, this program equips us to better serve … customers by ensuring our sewer collection system meets regulatory standards, improving level of service and in the future assisting in identification of sewer overflows and mitigation of Inflow and Infiltration into our Wastewater Collection System"
- Mark Serres, VP and CTO at Miami Dade Water & Sewer Dept.[1]

RESULTS

60% Reduction in truck rolls[2]

IoT Breakthrough Awards — Winner, IoT Breakthrough Awards Public Safety Innovation of the Year[3]

1. NASDAQ 2. Smart Energy Int'l 3. Itron Press Release

Quantifying Carbon Savings from AMI

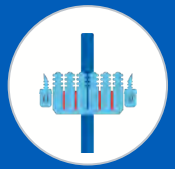
DESCRIPTION

» ComEd worked with the Citizen's Utility Board and Environmental Defense Fund to develop a practical measure of changes in GHG emissions attributable to smart grid functions enabled by AMI and related investments

RESULTS[1]

248 MT	From reduced 'Meter Reading' truck rolls
4605 MT	From reduced 'Outage & Maintenance' truck rolls
525 MT	From 'Peak Time Savings' energy savings
9820 MT	From 'Hourly Pricing' energy savings

1. ComEd Smart Grid Advanced Metering Annual Implementation Progress Report 2021



Distribution Automation

Benefits of Distribution Automation

RESILIENCE AND RELIABILITY

» Utilizes intelligent, connected deices and peer-to-peer communication to quickly pinpoint outages

» Helps predict outages before they occur

OPTIMIZATION AND EFFICIENCY

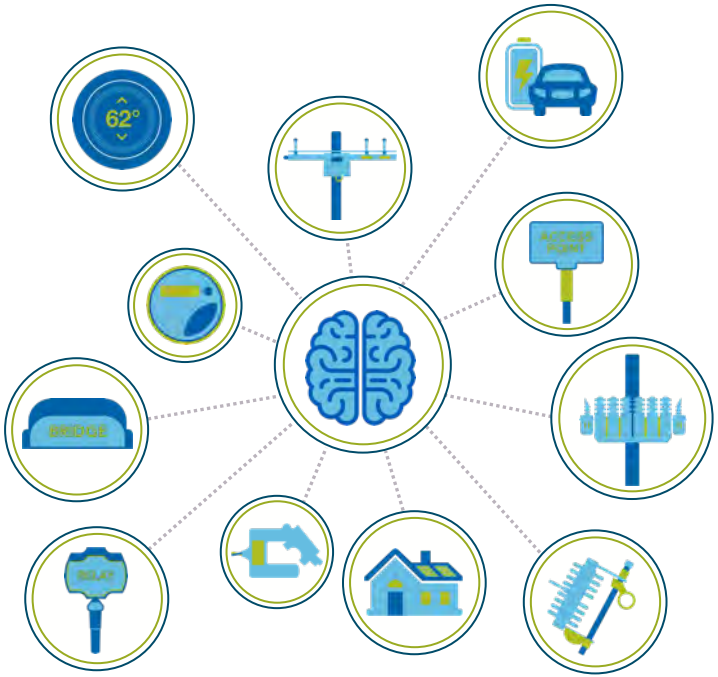
» Reduces operational expenses

» Optimizes grid operations

MONITORING AND ANALYSIS

» Works with AMI to improve system visibility

» Enables advanced energy management applications



ENABLING TECHNOLOGIES: Transformer monitors, capacitor banks, switches, smart meters, reclosers, protection devices, utility and SCADA systems, voltage regulators, photovoltaic inverters, line sensors, fault indicators, GIS/CIS systems, smart home devices, bridges/relays/access points, AMI management platform

Proven Distribution Automation Benefits

- 5.1M minutes of customer interruptions avoided per year
- $46M in estimated annual savings through FLISR

- 14% and 9% improvement in SAIFI and SAIDI, respectively
- $71M per year in societal benefits through faster power restoration

- Avoided 7.7M customer power interruptions
- 46% reduction in frequency of customer interruptions

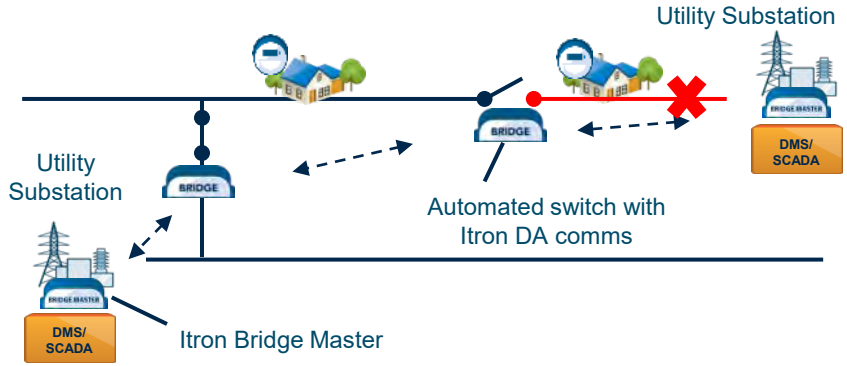
- 23% reduction in system customer outage hours
- $14 per customer in operational savings

- 87% less expensive and…
- 29 weeks faster to connect distributed generation to the grid

Automated Circuit Reconfiguration

DESCRIPTION

- Automated Circuit Reconfiguration deployed across 70 circuits
- Automatic detection of faults and rerouting of power
- More efficient operation and faster power restoration



INITIAL RESULTS[1]

~14% SAIFI Improvement

~9% SAIDI Improvement

BUSINESS CASE ESTIMATES[1]

~$71M per year Societal benefits[2]

1. AEP Ohio gridSmart Phase 2 filing
2. Based on value of service

Better Reliability with Multiple DA Applications

DESCRIPTION

Improved storm response and grid reliability with multiple distribution automation (DA) applications on a single network.

- 5.0M smart meters
- 25,000+ intelligent line sensors[1]
- 5,000+ automated feeder switches, network protectors, capacitor bank and voltage controllers
- Predictive analytics

ANNUAL BENEFITS REPORTED

5.1M	Minutes of customer interruptions avoided per year[2]
$46M	Estimated annual opex savings[3]
10k	Customer outages avoided by detecting transformer issues
>100k	Avoided field visits[3]

TOTAL BENEFITS REPORTED

25%	Improvement in service reliability since 2010[4]

1. IUW 2019 Customer Presentation, 2. U.S. DOE Report – Innovations from Across the Grid, Edison Foundation, Dec. 2014, 3. Metering & Smart Energy, 4. InternationalSmart Grid Today

Proactive Energy Management

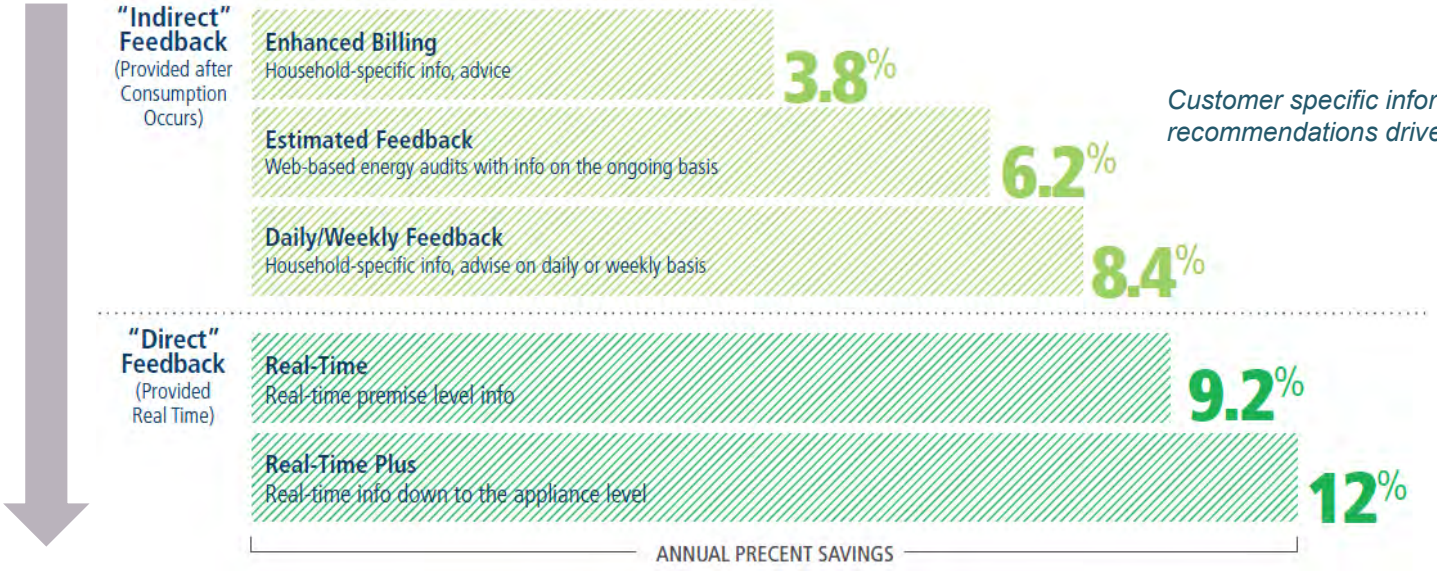
Benefits for consumers and utilities

Energy Awareness Reduces Energy Consumption

Meta study: Energy Conservation (Efficiency) from Feedback

AVERAGE HOUSEHOLD ELECTRICITY SAVINGS BY FEEDBACK TYPE[1]

Percent reduction from average electricity use; 36 pilots represented



Customer specific information and recommendations drives more energy efficiency

1. American Council for an Energy-Efficient Economy – "Advanced Metering Initiatives and Residential Feedback Programs"

Saving Customers Money with Demand Response

ComEd
An Exelon Company

DESCRIPTION

- With ~300k participating customers, peak-time savings (PTS) offers a $1 credit for every kWh saved during PTS hours
- Enrolled customers receive bill credits for reducing their electricity use during PTS Hours events, which are typically announced when demand for electricity is high
- There is no cost to enroll, no requirement to own specific home energy management technologies, and no penalty for not reducing energy use
- ComEd funds PTS bill credits by participating in PJM's capacity market as a curtailment service provider;
  All PJM auction revenue is ultimately paid to PTS participants

Peak Time Savings

2020 RESULTS[1]

$5.3 M	Collectively earned bill credits in 2020
$15.5M	Collectively earned bill credits since 2015
$14.4	Median season credit earned in 2020
35.8 MW	Average curtailment per even hour (2019)

1. ComEd Smart Grid Advanced Metering Annual Implementation Progress Report

Leveraging Flexible Rate Structures

ComEd
An Exelon Company

DESCRIPTION

- ComEd residential customers whose homes have smart meters have a choice between three supply electricity rates from ComEd: the *standard fixed-price rate*, *hourly pricing*, and *time-of-day pricing*
- Customers selecting hourly pricing can save money versus the fixed-price rate by shifting their electricity consumption away from high-priced periods, like summer afternoons, to lower-priced periods, such as mornings, nights and weekends
- The program participants grew 7% in 2020 due to target marketing campaigns and increased awareness

Hourly Pricing

2020 RESULTS[1]

37k	*Hourly Pricing Participants*
$27M	*Energy Savings*

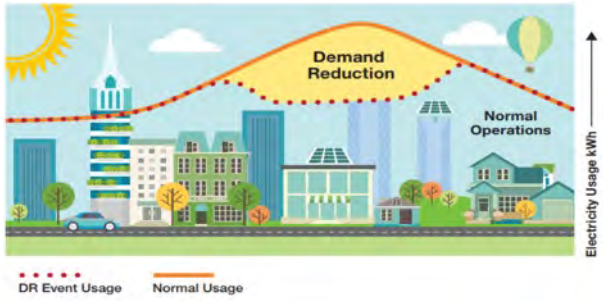
1. ComEd Smart Grid Advanced Metering Annual Implementation Progress Report

Reducing Peak Load while Increasing Customer Options

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

DESCRIPTION

- Southern California Edison implemented a mass market demand response (DR) enabled by their Itron smart meters and Itron's IEE MDM
- The DR programs included peak-time rebates, critical peak pricing, and time-of-use rates
- The programs provided customers more options while helping Southern California Edison deliver cost-effective energy
- The programs have grown to be one of the largest in the country, achieving enrollment >965k across all DR programs



RESULTS SINCE 2012[1,2]

31 / 57	Reduction in MW load (Save Power Day Incentive / Time-of-Use Rates)
$9.5M	Annual financial benefits from DR programs
965k	Number of service accounts enrolled in DR programs

1. Unless specified, results are aggregate across SoCal Edison's 3 demand response programs: Save Power Day Incentive, Critical Peak Pricing, Time-of-Use Rates in 2016
2. 2017 Edison SmartConnect® Demand Response and Energy Conservation Annual Report

Driving Demand Response Across a Full-Service Territory

DESCRIPTION

- OGE's Positive Energy SmartHours dynamic pricing program
- More than 130k participants enrolled with target of ~150k (20% of customers)
- Itron's smart grid platform-enabled ecosystem of devices and software


PCT


Smart Meter


Customer Portal

Consumer Engagement & Marketing

"Oklahoma Gas and Electric is empowering its customers to enroll in smart metering that uses electricity when it's cheaper, not when it's most expensive." - *President Obama*[1]

RESULTS TO DATE

$152	Average savings per residential customer[1]
$305	Average savings per commercial customer[1]
155 MW	Current capability of peak demand reduction[2]
40%	Participants' average peak load reduction[3]

1. Remarks from President Obama at National Clean Energy Summit 2. OGE Smart Hours Presentation, Mike Farrell, OGE, 2015
3. FERC 2017 Assessment of DR and Advanced Metering – Staff Report

AMI to Empower Customer Savings

DESCRIPTION

- The State of Michigan requires all natural gas and electric utilities to implement Energy Waste Reduction programs for their customers to reduce overall energy usage (Act 295)
- To that end, Consumers employs different tools that leverage
  - *Web portal and Home Energy Reports* provide personalized reports, bill forecasting and alerts, comparisons with similar households and targeted savings tips based on their energy use patterns
  - *Critical Peak Pricing program* which applies smart meter data to determine bill credits based on actual reductions during demand response events and to generate a feedback loop with customers
  - Prepaid program: offers customers better insight into their energy use and costs on a daily basis, providing customers with greater payment control and flexibility by allowing them to pay for energy on their own schedule

BENEFITS (EST., 2020-2023)[1]

18.9 GWh	Annual electricity savings from portal usage
8.4k therms	*Annual gas savings from portal usage*
24.78 GWh	Annual electricity savings from Home Energy Reports
20k therms	Annual gas savings from Home Energy Reports

1. Consumers Energy 2020-2023 Energy Waste Reduction Plan

Enabling Energy Savings for Customers

DESCRIPTION

- In May 2020, Consumers Energy was able to quickly provide 100,000 households with smart thermostats at no cost to help Michigan residents power through the COVID-19 pandemic by saving energy and money while protecting the environment
- Smart meter data is used to determine bill credits based on actual reductions during demand response events and to generate a feedback loop with customers. Analytics driven by smart meter data were very effective in targeting customers to engage in this initiative

BENEFITS[1]

90%	Engagement rate
15k	Thermostats deployed per week
14 MW	Demand reduction potential

1. IEI: Electric Company Smart Meter Deployments

Greater Insights Encourage Energy Savings

DESCRIPTION

- The *Pay My Way* program was a prepay pilot launched by Consumers in 2018-2019 with over 5,000 participants, offering customers better insight into their energy use and costs on a daily basis
- The program utilizes remote disconnection and reconnection functionality and followed the same disconnection and reconnection standards that are utilized for post-pay customers

Example of a personalized customer report

BENEFITS REPORTED FROM PILOT[1]

+5000	Pilot participants
3%	Net energy savings per participant
37%	Reduction in number of customers hold net debt
19%	Increase in customer satisfaction due to improved communication and clarity about the program

1. Consumers Energy 2020-2023 Energy Waste Reduction Plan (p.303-305)

Putting Customers in Charge

DESCRIPTION

- With AMI deployment, AEP Ohio launched several smart energy programs and services to help customers take control of their home energy usage.
  - All customers can access AEP's Energy Dashboard, a collection of customized energy graphs and charts.
  - A dedicated mobile app can be paired with an in-home device that connects to the smart meter through Zigbee communication allows to view minute-by-minute usage, control smart home devices and participate in DR programs.
  - Other options: Home Energy Reports, High Bill/Usage Alerts and Weekly Energy Breakdowns.

BENEFITS REPORTED (2019)[1]

300k	Customers participating in High Bill Alerts
164k	Customers enrolled in Home Energy Reports
+3	Minutes spent on average per session of AEP's Energy Dashboard

BENEFITS REPORTED (2017)[2]

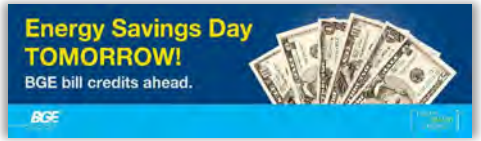
8%	Energy savings claimed by participants with an energy bridge

1. Smart Energy Customer Engagement Stories: AEP Ohio (SECC, 2019) 2. EEI Features Powerley Customer Success Stories – AEP and DTE (2018)

Successful Energy and Peak Power Savings

DESCRIPTION

- The *Smart Energy Manager* program allows customers to better manage energy usage through several features enabled by smart meters, such as web portal, mobile app, home energy reports, high usage alerts, neighbor comparisons and play-and-save gamification pilot
- *Smart Energy Rewards* is one of the largest dynamic programs in the US.
  - Customers are notified of an “Energy Savings Day”
  - If they respond to the event, they receive a bill credit of $1,25 per kWh saved
  - Post-event communications include a home comparison savings feature to motivate customers to save more next time



RESULTS (2020 SMART ENERGY MANAGER)[1]

193 GWh	Reduced electricity use with Smart Energy Manager
3.5M therms	Reduced gas use with Smart Energy Manager
630k	Customers enrolled in high bill alerts

RESULTS (2019 SMART ENERGY REWARDS)[2]

4719 MWh	Reduced peak demand from two events
67%	Participation rate for a total of 1.1M customers eligible
$5.98	Ave. bill credit received per participant

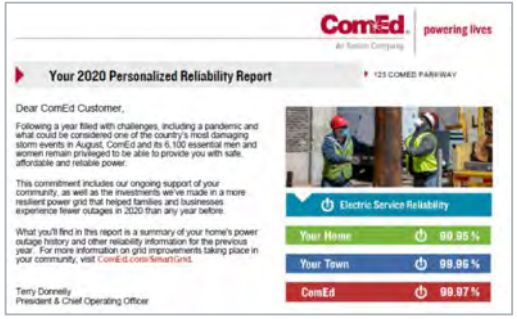
1. IEI: Electric Company Smart Meter Deployments (2021 update) 2. BGE 2020 Empower Report (p33) 3. BGE 2019 Empower Report (p32)

Increasing Customer Satisfaction through Reliability Improvements

ComEd
An Exelon Company

DESCRIPTION

- ComEd has 4M electric customers
- In March 2021, ComEd began sending personalized reliability reports to its customers with their monthly bills
- The uptime reports show the positive impact ComEd's smart grid investments have had on electric service
- Comed has 7k DA Devices (Reclosers, Capacitor banks and FCIs) with plans to more than quadruple those counts in the future


ComEd powering lives

Your 2020 Personalized Reliability Report

123 COMED PARKWAY

Dear ComEd Customer,

Following a year filled with challenges, including a pandemic and what could be considered one of the country's most damaging storm events in August, ComEd and its 6,100 essential men and women remain privileged to be able to provide you with safe, affordable and reliable power.

This commitment includes our ongoing support of your community, as well as the investments we've made in a more resilient power grid that helped families and businesses experience fewer outages in 2020 than any year before.

What you'll find in this report is a summary of your home's power outage history and other reliability information for the previous year. For more information on grid improvements taking place in your community, visit ComEd.com/SmartGrid.

Terry Donnelly
President & Chief Operating Officer

Electric Service Reliability

Your Home 99.95%

Your Town 99.96%

ComEd 99.97%

Example of a personalized customer report

RESULTS

56%	CAIDI Improvement vs pre-EIMA[1]
58%	SAIFI Improvement vs pre-EIMA[1]
50%	Reduction of customers experiencing an 12h outage during storms[1]
17M	Avoided service interruptions since 2011[2]
$3B	Societal savings from avoided outages since 2011[2]
87%	Decrease in Reliability Inquires/Complaints vs pre EIMA[1]

1. ComEd 2020 Reliability Report 2. ComEd Press Release

Energy Usage Data Critical to Customer Needs

DESCRIPTION

- DTE has 2.8M electric and 1.2M gas customers (35% indoors)
- When the COVID-19 pandemic hit the US in Spring 2020, residential energy consumption increased by 12%. Utility customers actively sought solutions to keep their home energy costs in check
- DTE's Insight App, powered by smart meter data, became critical to addressing changing customer needs. In March & April of 2020, the average number of app downloads increased by 51%
- Since then, customer energy engagement has increased:
  - Energy budget tracking is up 78%
  - Connection rates for smart homes devices are up 45%
  - Visits to Energy Advisor are up 34%
  - Energy Visualizations are up 20%

BENEFITS REPORTED (2019)[1]

5%	Energy savings, on average
99.8%	Accuracy of energy usage data

1. IEI: Electric Company Smart Meter Deployments

Smart Cities

Leveraging one network for streetlights and other applications

Streetlight Benefits

- Lighting control system provided by Itron's Streetlight.Vision software
- Expected 70% energy savings from LEDs + controls ($57 per light per yr)
- Includes dimming from 11:30pm to 6:00am
- Reduced maintenance costs and calls

- Lighting control system provided by Itron's Streetlight.Vision software
- 52% energy savings from ON/OFF switching control and scheduled light level adjustment on high pressure sodium lights with electronic ballasts
- Eliminated night patrols

- Lighting control system provided by Itron's Streetlight.Vision software
- 52% energy savings from LED luminaire and controls (adaptive lighting)
- With financing, energy savings pays for LEDs + controls in 3 years

Sourced from internal Itron document

Reducing Bills and Improving Service

DESCRIPTION

- TECO has 266k streetlights and was facing an aging HID infrastructure with 20-25% failure rates, high operating and maintenance costs, dependency on customers to identify and report failures, poor efficiency and decreased luminescence
- TECO wanted to improve reliability, restoration times and the customer experience. At the same time they wanted to reduce the cost of service and enable the next generation of smart city services by deploying a city-wide canopy of smart streetlights

TECO is leveraging their streetlight network to do a Traffic Counting Pilot

RESULTS[1]

$3M	Annual base revenue increase
$2M	Annual O&M reduction
$0.5	Average Monthly Bill reduction
Pilot	Traffic Counting Pilot

1. TECO IUW 2019

Leveraging Data to Improve City Services

DESCRIPTION

- Glasgow is integrating data from multiple city services into a common, open platform. Objectives include reducing energy costs, increasing road safety and promoting cycling to help drive health benefits.
- The open data platform empowers developers to build new solutions to address the city's challenges. Itron is streaming lighting, traffic, noise and air quality data to the city's open data platform.
- Multiple applications on the same network including smart streetlights and traffic control increase the project ROI

RESULTS[1]

60% Energy savings from smart streetlights

63% Small-to-medium-sized businesses that have attracted additional business

1. Itron Case Study

Energy and Operational Savings from Smart Streetlights

DESCRIPTION

- Itron, together with the Chicago Department of Transportation (CDOT), the Chicago Infrastructure Trust (CIT) and the Department of Innovation and Technology are installing 270k smart streetlights in Chicago. 100k Streetlights have already been upgraded.
- The lighting management system for the new LED lights will alert the City when lights need service, which will eliminate the need for residents to call the city to report outages

Map of the first 100k SL upgrades in the City of Chicago

PROJECTED RESULTS[1]

$100M Savings over 10 years

"By converting our streetlights to LED technology, we are modernizing Chicago's infrastructure, creating new jobs and saving taxpayers more than $100 million over the next decade."
- Rahm Emanuel, Mayor of the City of Chicago

1. Press Release

Savings from Networked Streetlights

City of Copenhagen

DESCRIPTION

- Copenhagen, one of the world's most sustainable and smartest cities, has set the ambitious goal of becoming the first carbon neutral capital city by 2025.
- The city has installed more than 20k networked LED's which have improved energy efficiency, lowered operational costs, enabled remote management, and improved citizen safety through dynamic lighting via motion and occupancy sensors, advanced controls for remote dimming and scheduling

RESULTS[1]

76%	Energy Savings
50%	Operations and Maintenance Savings

1. Itron Case Study

Building an IoT-Ready City

GUANGZHOU

DESCRIPTION

- The City of Guangzhou has deployed 95k smart LED streetlights and is piloting smart poles with integrated air quality sensors, pedestrian counters, traffic sensors, noise sensors, and motion sensors
- Itron's Streetlight.Vision provides a unified head-end for managing multiple lighting deployments
- The city has a vision to deploy additional advanced sensors, including tilt sensors for vegetation management, sewer level sensors, traffic monitoring using radars, traffic signal timing using smart cameras, pedestrian counters, smart parking sensors, and air quality sensors

RESULTS[1]

75% Energy savings through smart streetlights

28% Reduction in streetlight maintenance costs

1. Smart Cities World Whitepaper

Saving Energy and Connecting Services

DESCRIPTION

- Paris has committed to reduce public lighting energy consumption by 30 percent over the next 10 years while ensuring quality lighting for residents.
- At the same time, the city wanted to reduce the cost of service and enable the next generation of smart city services by deploying a city-wide canopy of smart streetlights

BACKGROUND & APPLICATIONS

- *Project Pilot*: Quickly demonstrated improved lighting efficiencies by starting with a tightly scoped city initiative
- *Smart street lighting and traffic control*: IoT network canopy connecting 180k street and traffic lights across the city
- *IPv6-based multi-application network*: Creating a platform for future services

RESULTS[1]

5k	Devices deployed in first 6 months
99.5%	Or greater reliability for real-time streetlight switching
30%	Energy savings
30%	Maintenance cost reduction

1. Itron Case Study

Operational Benefits from Smart Streetlights

DESCRIPTION

- FPL's smart city deployment showcases the true power of the solutions set—FPL is now home to the largest multi-application smart city network in the world, connecting 500,000 smart streetlights
- In addition to energy efficiency, FPL has realized significant O&M benefits from having networked street lighting. The smart lighting allows the utility to:
  - Know the operating status of lights
  - Identify failed devices before customer complaints
  - Improve asset tracking via GPS to eliminate field surveys and reduce truck rolls
  - Enable preventative maintenance
  - Accelerate service restoration following hurricanes
  - Protect turtles during hatching season

Examples of storm damage after Hurricane Irma

RESULTS[1]

500k	Smart streetlights deployed
0	Patrol days needed to identify failed lights after a storm (was 5 days)
2	Days to fulfill work order tickets (down from 28 days)
60%	Energy savings with smart streetlight technology

1. IUW 2019; 2. Itron Blog ; FPL: keep Sea Turtles in the dark

Thank You

Itron

www.itron.com