

# Houston's Smart Grid: Transforming the Future of Electric Distribution & Energy Consumption





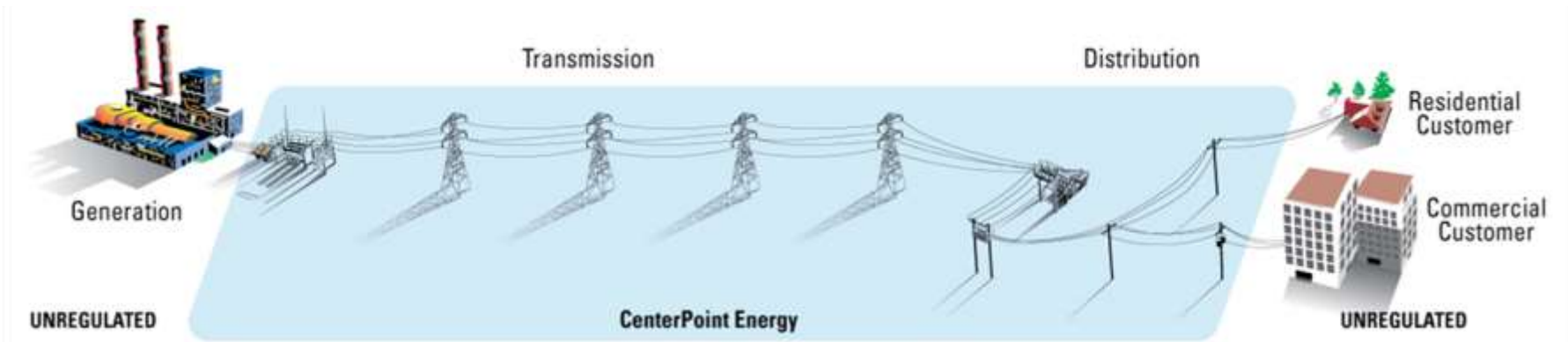
# What is the “Smart Grid”?

Visit [YouTube.com/CenterPointEnergyVid](https://www.youtube.com/CenterPointEnergyVid) –  
[Energy InSight Center virtual tour part 2](#)



**“Smart Grid” is a commonly-used term for a system of integrated technologies, including smart meters, designed to transform the purchase, delivery and use of energy.**

# The Texas electric system



## Generation

- Large, centralized power plants generate electricity

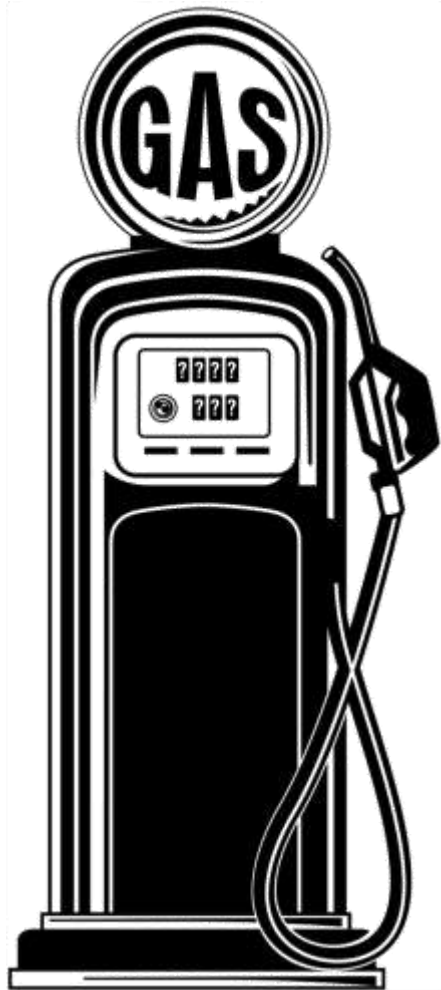
## Transmission & Distribution

- CenterPoint owns and maintains overhead and underground transmission and distribution lines

## Retail Electricity Provider (REP)

- Texas residents and business must purchase their electricity from a certified "Retail Electric Provider" (REP)

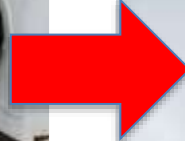
# What if gasoline were like electricity?



- Smart meters help show you how much electricity you are using as you use it
- Getting a clearer picture of your usage can help you better monitor, manage and conserve energy
- Retail electric providers can offer pre-paid service, “time of use” rates (free nights and weekends), energy analysis tools and other new products
- Remote meter reading and energy conservation are good for the environment

# How Smart Meters Work

Visit [YouTube.com/CenterPointEnergyVid](https://www.youtube.com/CenterPointEnergyVid) –  
Energy InSight playlist “More than a Smart Meter”



# How to Read a Smart Meter

[Visit YouTube.com/CenterPointEnergyVid](https://www.youtube.com/CenterPointEnergyVid) –  
Energy InSight playlist “How to Read a Smart Meter”



01H

Residential/commercial  
electricity usage



03A

Commercial Kva demand



029

Distributed generation



# Consumer Benefits of Smart Meters

[Visit YouTube.com/CenterPointEnergyVid](https://www.youtube.com/CenterPointEnergyVid) –  
[“Customers Praise Smart Meters”](#)





- **Remote meter reads, service connection/disconnection**
  - Consumers save \$25 million per year in eliminated fees
  - Environment avoids CO<sub>2</sub> emissions = powering 1300 homes per year
- **Energy efficiency and savings**
  - Visit [SmartMeterTexas.com](http://SmartMeterTexas.com) to see usage down to 15-minutes
  - Some consumers cut usage up to 50%, save up to \$100 / month
- **New products and services**
  - > 700,000 Texans on time-of-use rates (free nights & weekends) or peak-time rebates according to ERCOT
  - About 4,300 Houstonians get near-real-time data from IHDs
- **Automatic outage notification - Power Alert Service**
  - Sign up for email/text/voice alert at [CenterPointEnergy.com/PowerAlertService](http://CenterPointEnergy.com/PowerAlertService)
- **Smart homes**
  - Remote control of thermostats, appliances in a Home Area Network “HAN”



## Report Option

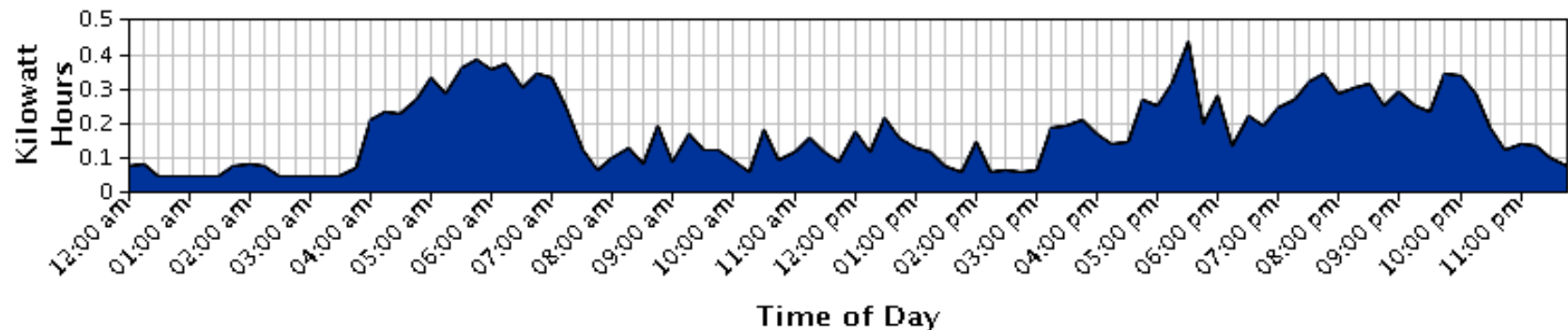
Report Type:

Start Date:  

End Date:  

## Daily Usage (each 15 minutes) - Kilowatt Hours for 01/26/2011

Use of Electricity Each 15 Minutes



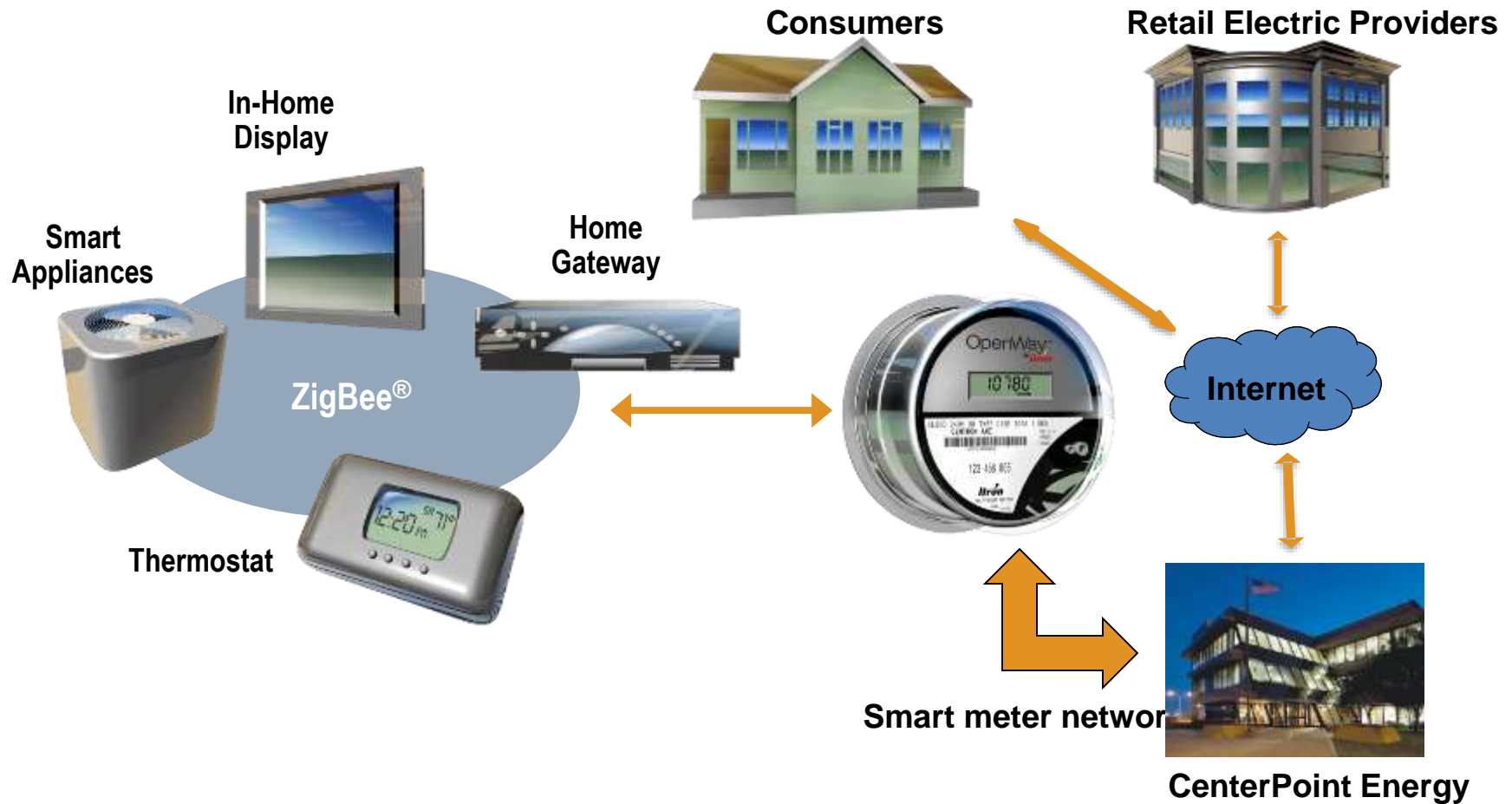
# In-Home Displays

[Visit YouTube.com/CenterPointEnergyVid](https://www.youtube.com/CenterPointEnergyVid) –  
[Energy InSight Center virtual tour part 3](#)

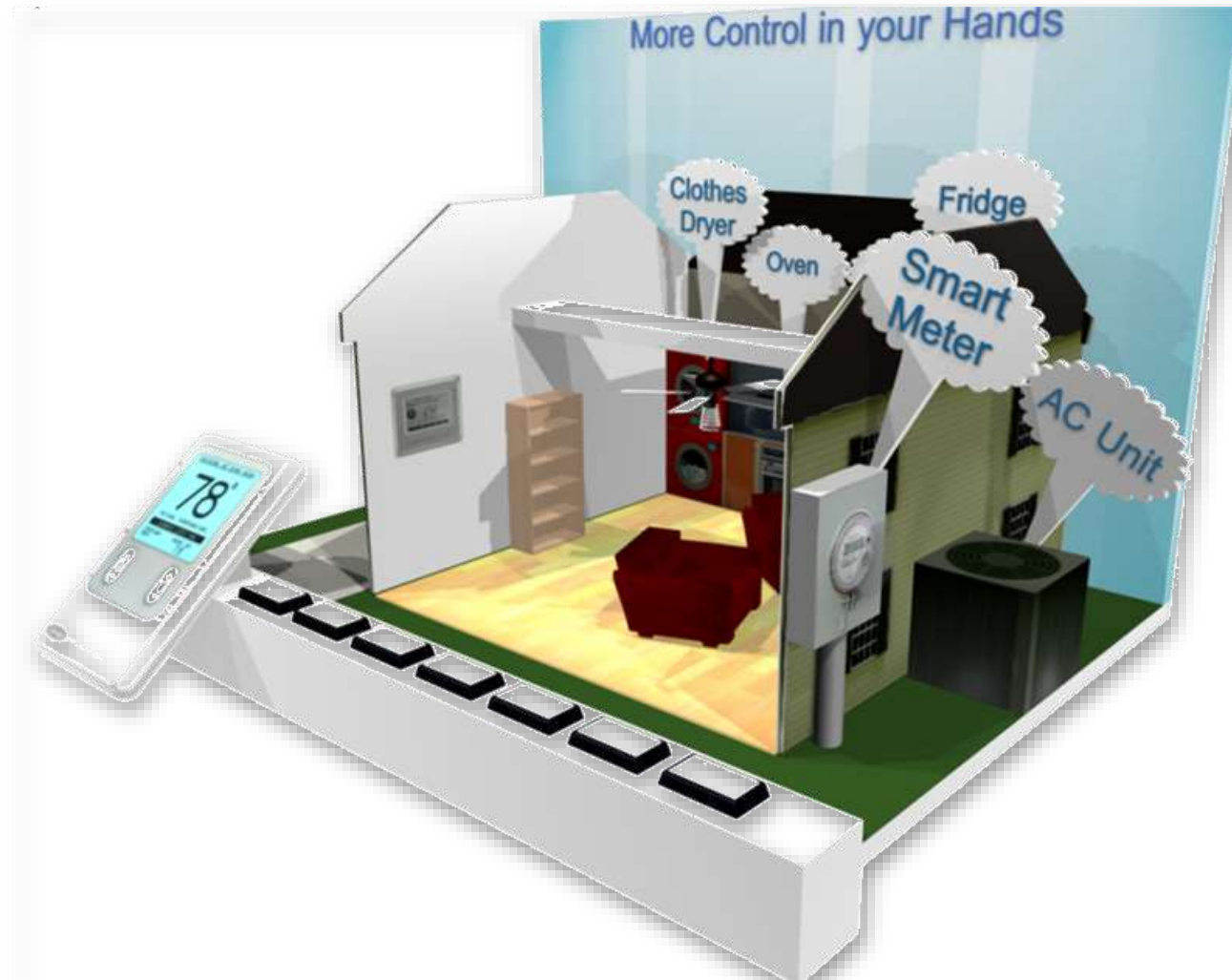


# Home Area Network (HAN)

[Visit YouTube.com/CenterPointEnergyVid](https://www.youtube.com/CenterPointEnergyVid) –  
Energy InSight Center virtual tour part 5



# Home Area Network (HAN)



# HAN Devices Available To The Public



## IHD/ Gateway



[rainforestautomation.com](http://rainforestautomation.com)  
[swesmarts.com/products](http://swesmarts.com/products)

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## IHD

[aztechmeter.com](http://aztechmeter.com)

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## Gateway/ Load Control

[buy.jetlun.com](http://buy.jetlun.com)

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# Smart Meters are Accurate and Secure

Visit [YouTube.com/CenterPointEnergyVid](https://www.youtube.com/CenterPointEnergyVid) –  
Energy InSight playlist [“No Test Anxiety for Smart Meters”](#)



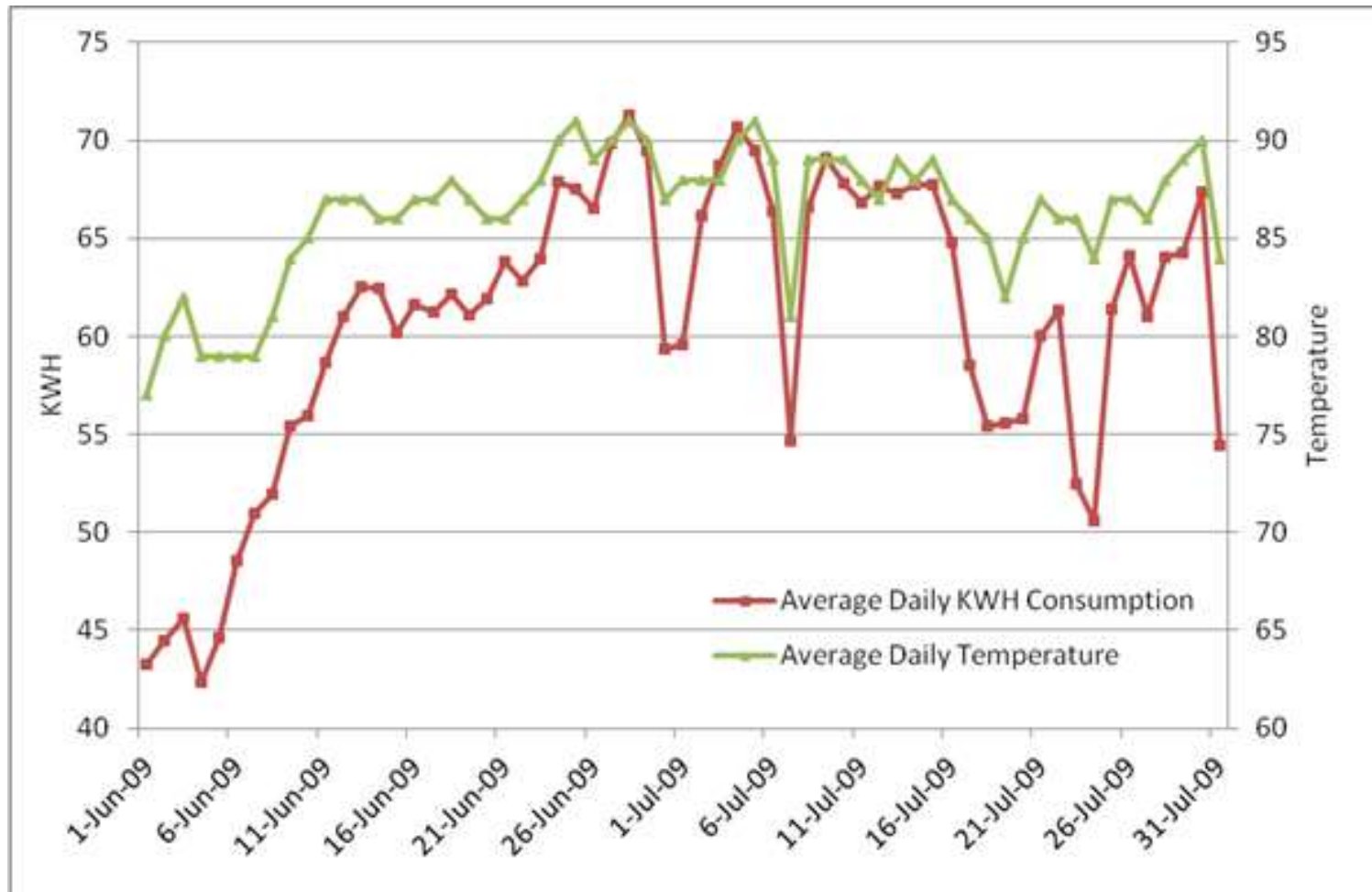
*CenterPoint Energy takes the accuracy of its meters very seriously, which is why we have in place a rigorous testing and quality assurance process:*

- Meter testing by the manufacturer at the plant and by CenterPoint Energy
- Comparison testing of smart meters vs. traditional meters
- Independent third-party accuracy tests
- Digital photos of removed meters to verify final readings
- Individual smart meter accuracy tests upon customer demand
- Independent meter software review
- Comprehensive cyber security program based on national standards
- Energy usage data belongs to the consumer:
  - shared only when authorized in writing by the customer
  - or authorized by regulatory authorities as necessary to conduct business (such as for billing).
- Most likely cause of high bills is increased usage (e.g. heating/cooling)

# Energy Usage Drives High Bills



Visit [YouTube.com/CenterPointEnergyVid](https://www.youtube.com/CenterPointEnergyVid) –  
Energy InSight playlist [“How much is that AC in the Window?”](#)



# The Intelligent Grid

[Visit YouTube.com/CenterPointEnergyVid](https://www.youtube.com/CenterPointEnergyVid) –  
[Energy InSight Center virtual tour part 8](#)



Combined with back office computer systems, our IG technology will automatically identify the location of power outages, isolate faulted sections of the network and re-route power from other sources, essentially “healing” the system.





# Meters + Intelligent Grid = Smart Grid

[Visit YouTube.com/CenterPointEnergyVid](https://www.youtube.com/CenterPointEnergyVid) – “How automatic power restoration works”



# CNP is being recognized as a leader in Smart Grid



**Southeastern Electric Exchange Industry Excellence Award**  
for Program-Based Implementation of Enterprise Risk Management

**WALL STREET JOURNAL**  
Willcom - CenterPoint Energy, PG&E and SOGAS at Head of Smart Grid Maturity Curve in North America, According to New GTM Research Report

**GTM Research Report**  
**CenterPoint Energy at Head of Smart Grid Maturity Curve in North America**

**Smart Grid Consumer Collaborative:**  
**Four Utilities Leading in Customer Service**

**FOR US UTILITIES**  
**Leading**  
in customer service

Greentech Media  
Networked Grid Utility Award

**Top 10 North American Utilities**

eMeter/Siemens Smart Grid

**New Frontier Partner Award**

Utilities Telecom Council

**Apex Award**



## What they say about CenterPoint Energy's Smart Grid Program

*"Houston is at the point of the spear in teaching the rest of the United States and the world how we can work with consumers to enhance their electrical usage ..."*

— Ken Salazar, U.S. Secretary of the Interior

*"CenterPoint is a true leader in the industry, well ahead of the industry in understanding the future and educating other utilities to help serve the industry as a whole."*

— Joe Lang, System Planning Engineer,  
Lincoln Electric System

*"If you are interested in reducing your energy bill, an in-home energy monitor makes it quick and easy. We reduced our energy usage enough to save almost \$400 in the first year."*

— CenterPoint Energy, In-Home Display pilot participant

Houston's Smart Grid:

# Transforming the Future of Electric Distribution & Energy Consumption

[www.CenterPointEnergy.com/smartmeters](http://www.CenterPointEnergy.com/smartmeters)

[www.Facebook.com/CenterPointEnergy](https://www.facebook.com/CenterPointEnergy)

[Twitter.com/energyinsights](https://twitter.com/energyinsights)

