



# Investing in Smart Grid Technology

Metropolitan Washington Council of  
Governments

Energy Advisory Committee

November 17, 2011

# Topics of Conversation

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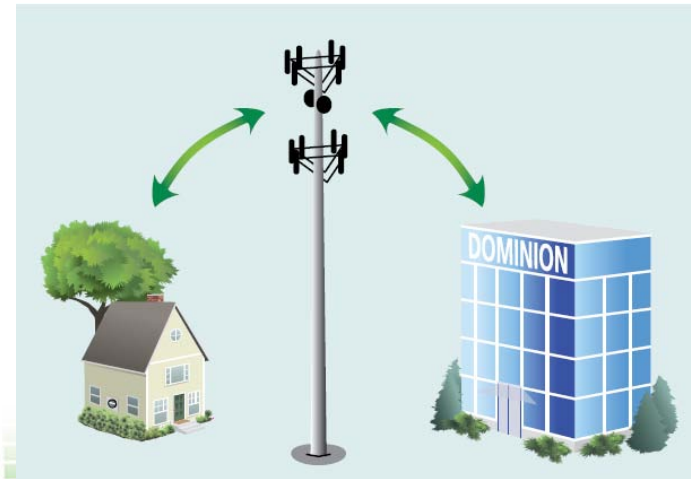
- Smart Meter Demonstrations
  - Demonstration areas
  - Meter capabilities and benefits
- Electric Vehicles
- Energy Conservation Programs
- Additional Resources

# What is a smart meter?

- Meter equipped with added communication features
- Foundation for Smart Grid
- Provides benefits for customers and Dominion



## How it Works



# The Difference is “Under the Glass”

Smart meters may look similar to regular meters on the outside, but it's what's inside that makes a big difference.

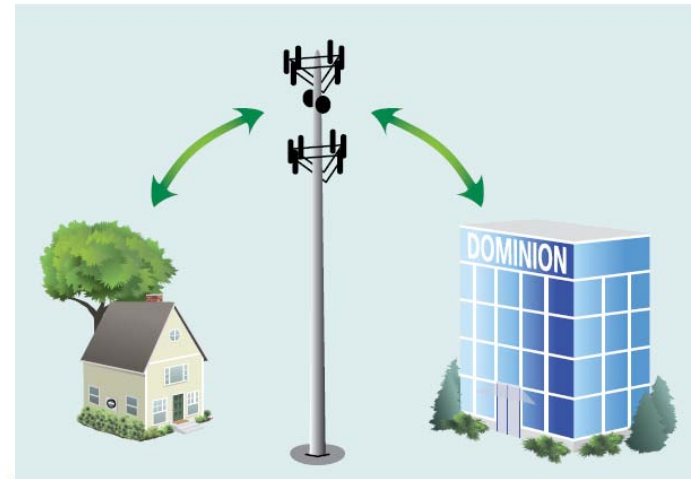
## Current Meter

- One-way communication
- Monthly meter reading using drive-by technology



## Smart Meter

- Two-way communication
- Remote meter reading using cellular communication



# Smart Meters: Transforming the Customer Experience

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## Customer Benefits

- Improved outage communications
- Enables remote connect and disconnect
- Flexible billing dates
- Reduces off-peak energy consumption
- Enhanced pricing and conservation options
- Improved reliability

## Dominion Benefits

- Improves outage analysis and service restoration
- Resolves meter service orders without site visits
- Reduces billing and collections costs
- Reduces vehicle and fuel costs while improving employee safety
- Establishes foundation for future Smart Grid initiatives

# Demonstration Areas

## Current Demonstrations

Richmond

- 6,700 meters
- Suburban

Charlottesville

- Over 50,000 meters
- Rural

Northern Virginia

- 34,000 meters
- Alexandria City, City of Falls Church, Arlington County, Fairfax County
- Urban

## 2<sup>nd</sup> Technology Evaluation – Demonstration Expansion

Richmond

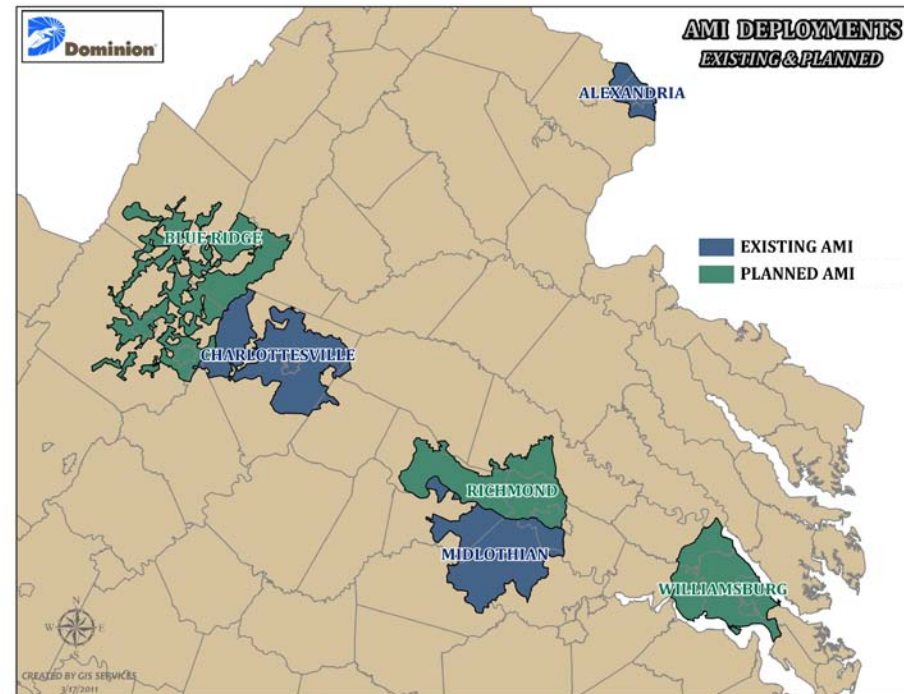
- 2,500 meters
- Test downtown area

Blue Ridge

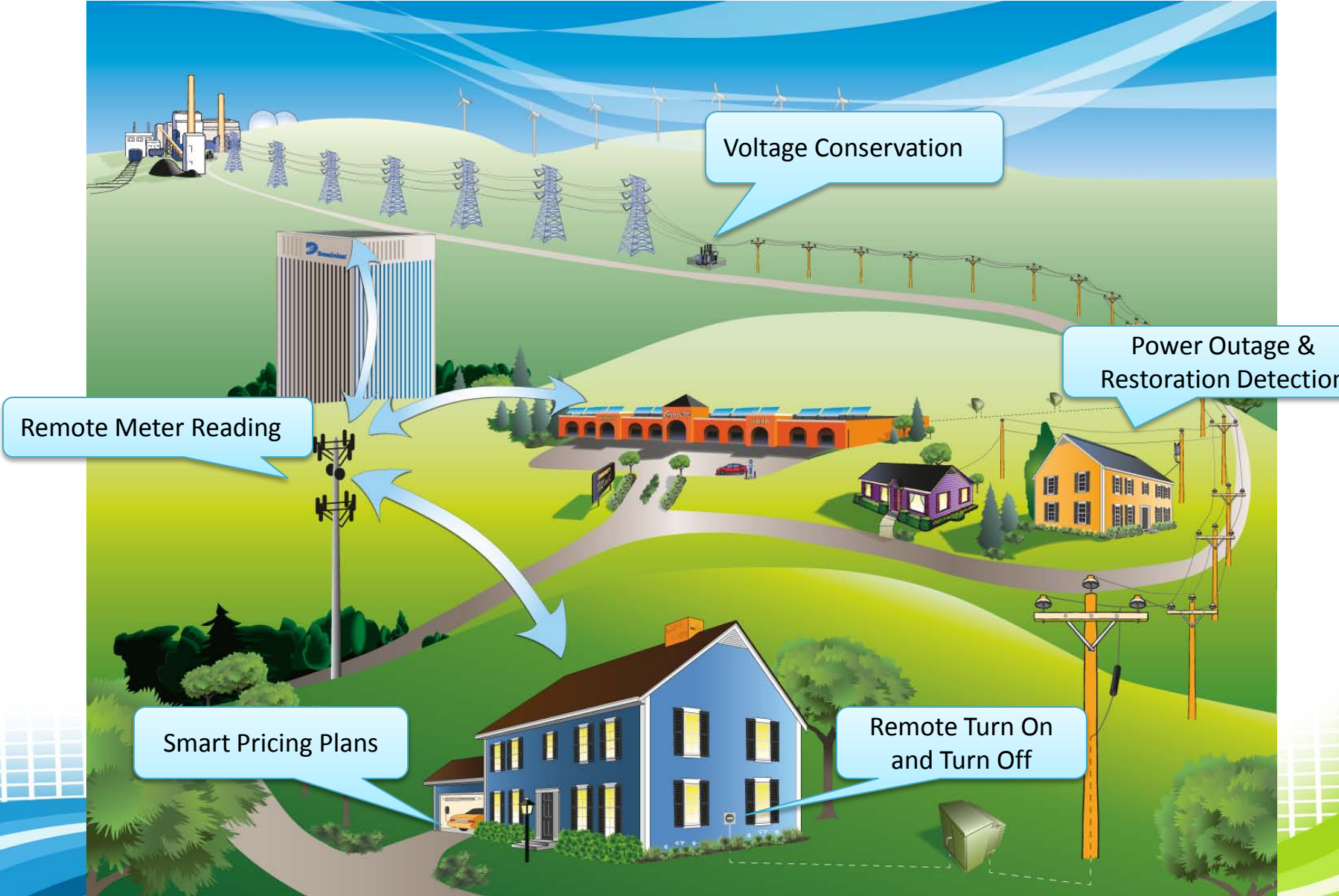
- 2,100 meters
- Test rural application

Williamsburg

- 4,300 meters
- Test suburban environment.



# Smart Meter Capabilities



# Remote Meter Reads

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## Customer Benefit

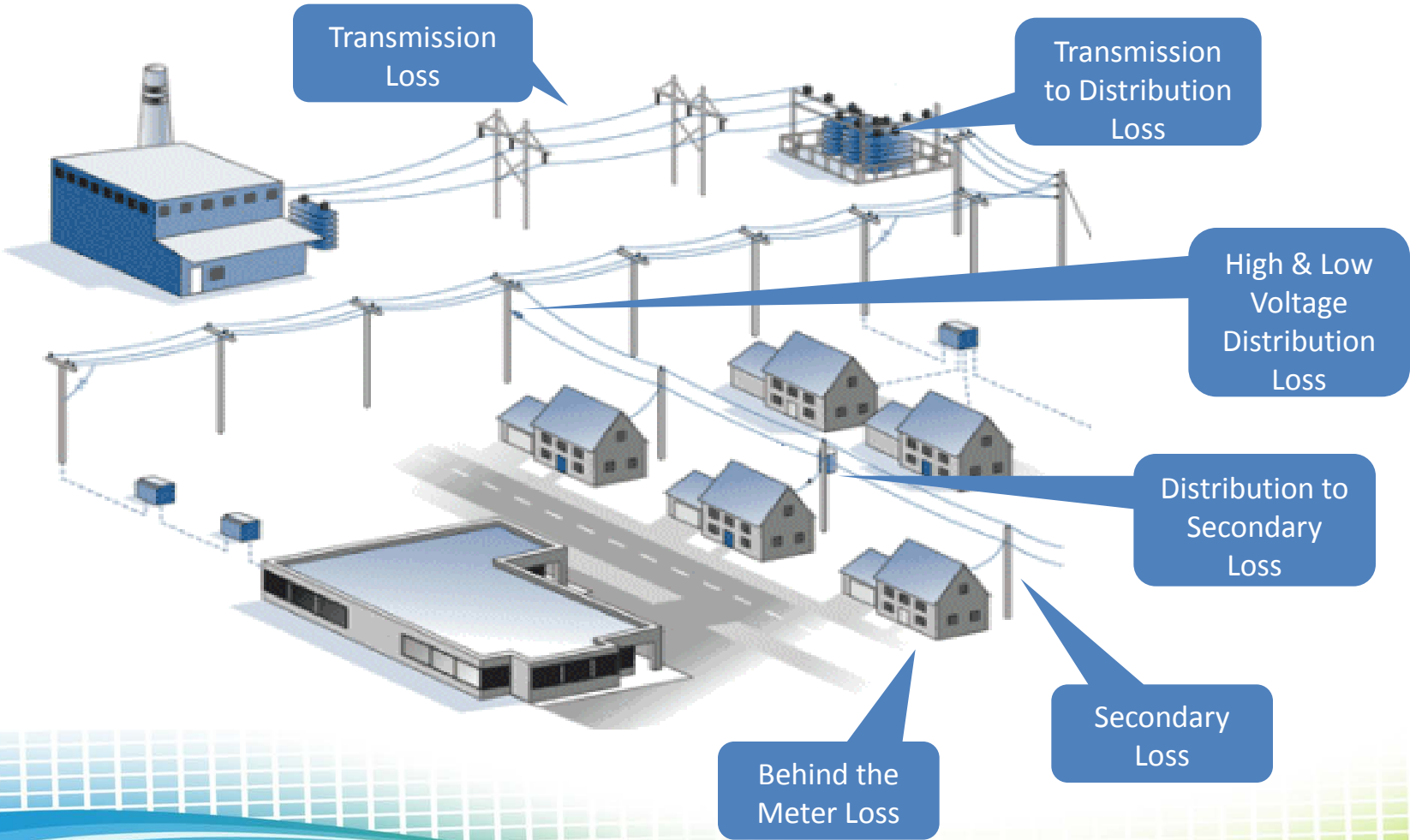
- More timely and frequent meter readings provide additional information about electricity usage and costs
- Dominion employee will no longer need to access property for meter reading purposes
- Customer can choose their own bill date (pilot)

## Dominion Benefit

- Elimination of trucks on the road for meter reading purposes
- Elimination of trucks on the road for move-in and move-out events
- More accurate load forecasting
- Increased safety, reduced vehicle accidents, lost time, personal injuries

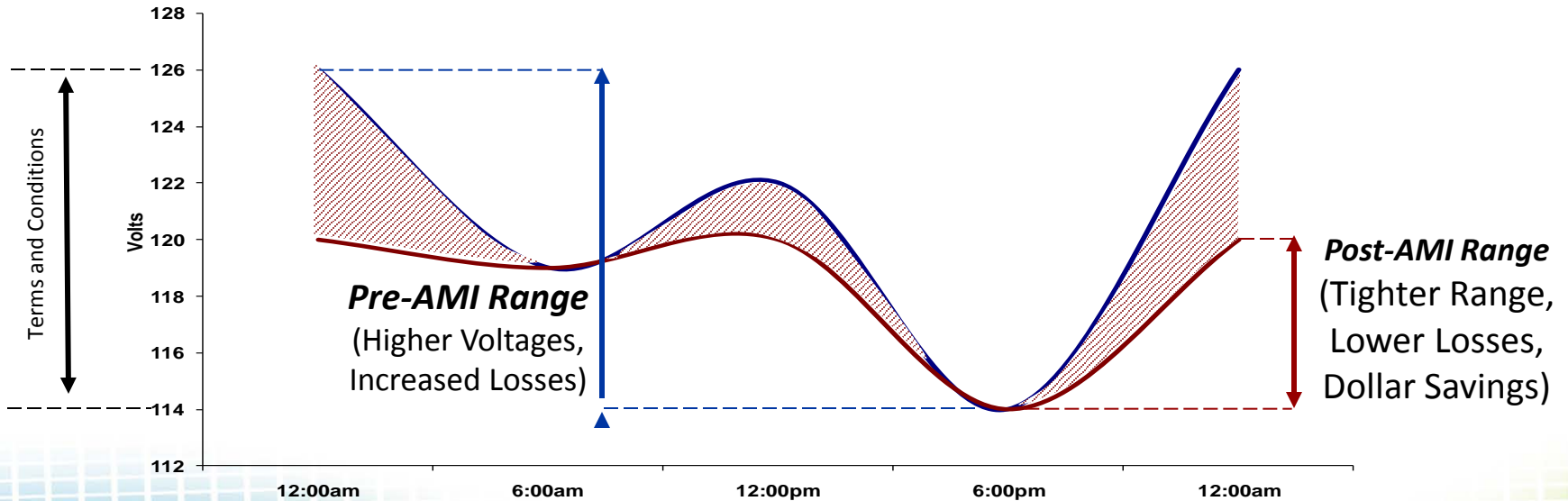


# Voltage Conservation

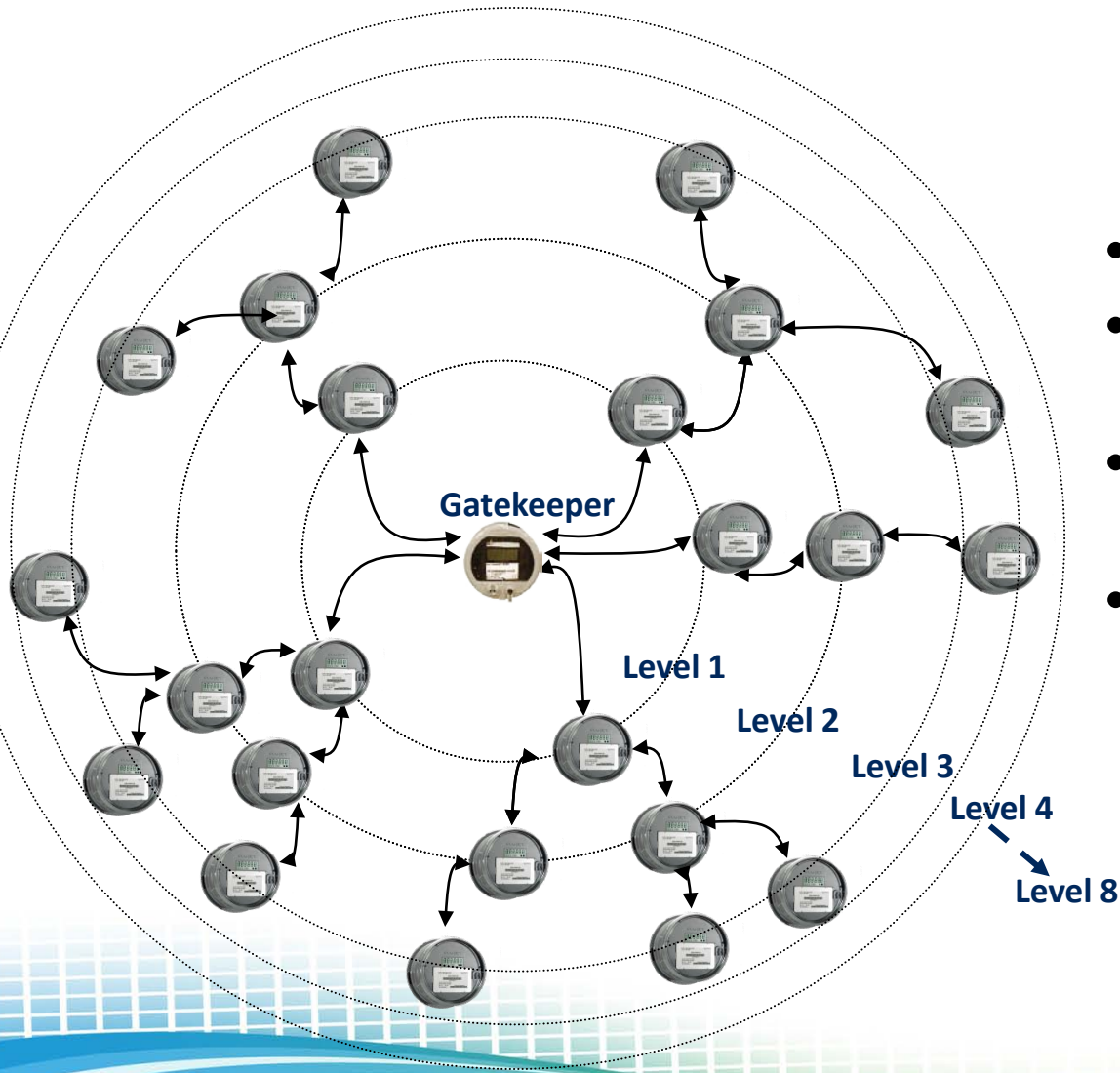


# Voltage Conservation

- Precise delivery of power
- Provides individual customer voltage level and energy use data to operate the distribution system within a tighter tolerance
- Manages lowest voltage customers and allows more efficient operation of customer voltage ranges



# Outage & Restoration Notifications



- More outage data for analysis
- Enhance outage communications capability
- Confirmation of “lights on” after storm
- Reduce need for customer call-back with “ping” process

# Remote Turn On / Turn Off

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## Customer Benefits

- Customers do not need to schedule time for utility employee to access property for turn-on/turn-off
- Customer may be able to resolve inquiry or schedule service with fewer touch points
- Convenience of more same day requests fulfilled
- Customer is able to request service through self-service Manage Your Account online platform

## Dominion Benefits

- Allows service personnel to focus on other functions
- Fewer trucks on the road improve safety and reduce emissions

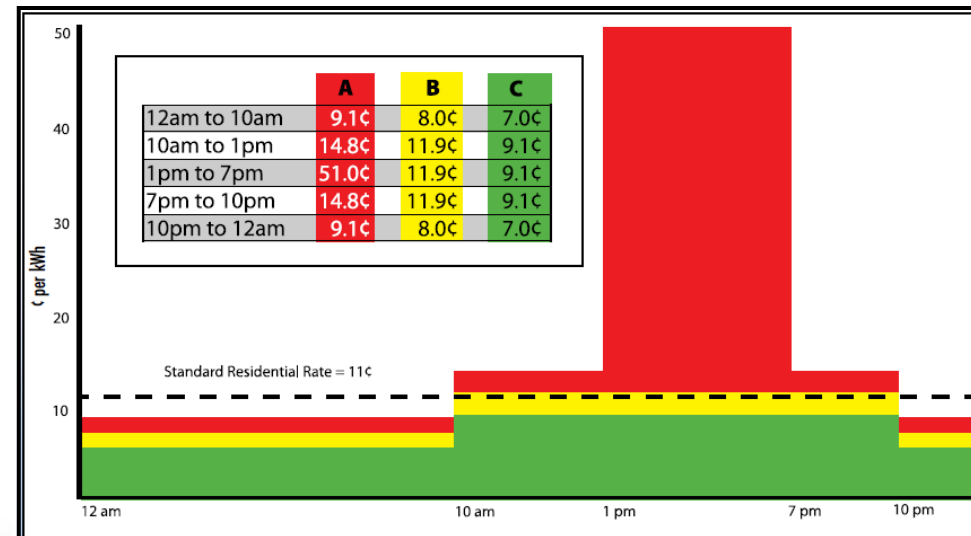
# Smart Pricing Plan

# \$SMART PRICING PLAN

- Identify behavior change to the pricing signals
- Home and business customer option
- Voluntary pilot; requires a smart meter

## How many days at each price?

<u>Days</u>	<u>Count</u>
High Price (A)	30
Medium Price (B)	55
Low Price (C)	280



\* Rates effective July 1, 2011.

\*\* Chart illustration represents prices for April 16 - October 15.

# Preparing for the Electric Vehicles

- Electric vehicles rolling off production lines of major manufacturers
- Dominion Virginia Power:
  - Encourage off peak charging with EV pricing plans
  - Conducting DVP Prius and Chevy Volt demonstrations



# Energy Conservation Programs

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## Home

- Smart Cooling Rewards
- Home Energy Improvement
- Lighting Program

## Business

- HVAC Rewards
- Lighting Rewards

Choose to enroll in Dominion Green Power to support renewable energy for as little as \$2 a month.



# Additional Resources

The screenshot shows the Dominion Energy website. At the top, there is a navigation bar with links for "Manage Your Account", "Sign In", and "Register". Below this is the Dominion logo and a search bar. A secondary navigation bar includes "Customers", "Products", "Investors", "News", "Careers", "Civism", and "About Dominion". The breadcrumb trail reads "Dominion Corporate > About > Conservation > Smart Meter Deployment".

The main content area is titled "Smart Meter Deployment" and features a large image of a smiling couple sitting on the steps of a house. The text overlay on the image reads "Energy is Getting an Upgrade New Smart Meters Installed". Below the image, a text box states: "Dominion Virginia Power has installed smart meters in portions of northern Virginia, [Midlothian](#), and [Charlottesville](#) as part of the company's multi-phased evaluation and ongoing testing of smart meters."

On the left side, there is a sidebar menu with the following items: "Your Bill", "Your Service", "Power Outages", "Energy Conservation" (expanded), "We're Here to Help You Save", "Energy Conservation Programs", "VA Green Power", "Smart Meter Deployment" (highlighted), "Energy-Saving Tips and Information", "Energy Calculators", "Energy Conservation Blog", "Be an Energy Star Kid", "Environment", "Rates & Tariffs", "Rates Education", and "For Businesses".

Below the main text, there are two columns of links. The left column is titled "About Smart Meters" and contains the text: "Smart meters use digital technology to enable two-way communication between the meter and Dominion's electric distribution system. Dominion will utilize its electric distribution, communications and information technology infrastructure to promote energy conservation and environmental responsibility, and improve customer service and utility operations in this smart.grid effort." The right column is titled "Information and Projects" and contains links for "Smart Meter FAQs", "Smart Meter PDF", "SmartGrid Charlottesville", and "Smart Pricing Plan".

## Website

[www.dom.com](http://www.dom.com)

- [Smart Meters](#)
- [Conservation Programs](#)
- [Green Power](#)



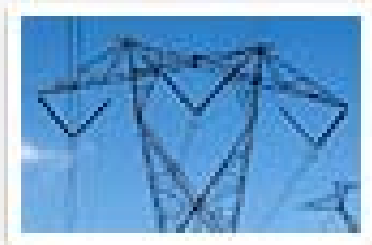
# Powering Virginia



Conservation



Customers



Energy Transportation



Clean Coal



Nuclear



Natural Gas

Questions

Thank you

