

# **Integrated Resource Plan**

TVA'S ENVIRONMENTAL AND ENERGY FUTURE

## **Energy Efficiency Program Development**

Frank Rapley, General Manager  
TVA Energy Efficiency Program  
Design



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Chattanooga, Tennessee

# Today's Discussion

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## **Purpose:**

Provide background and insight into how TVA approached its initial efficiency program development, including:

- Program Selection Process
- Program Development Process
- New Energy Efficiency Program Designs
- Development Plans for FY 2010
- Key Insights

## **Goal:**

Your understanding of the development of TVA EE programs and future plans will help you provide meaningful, interest-specific feedback to TVA during the IRP process.

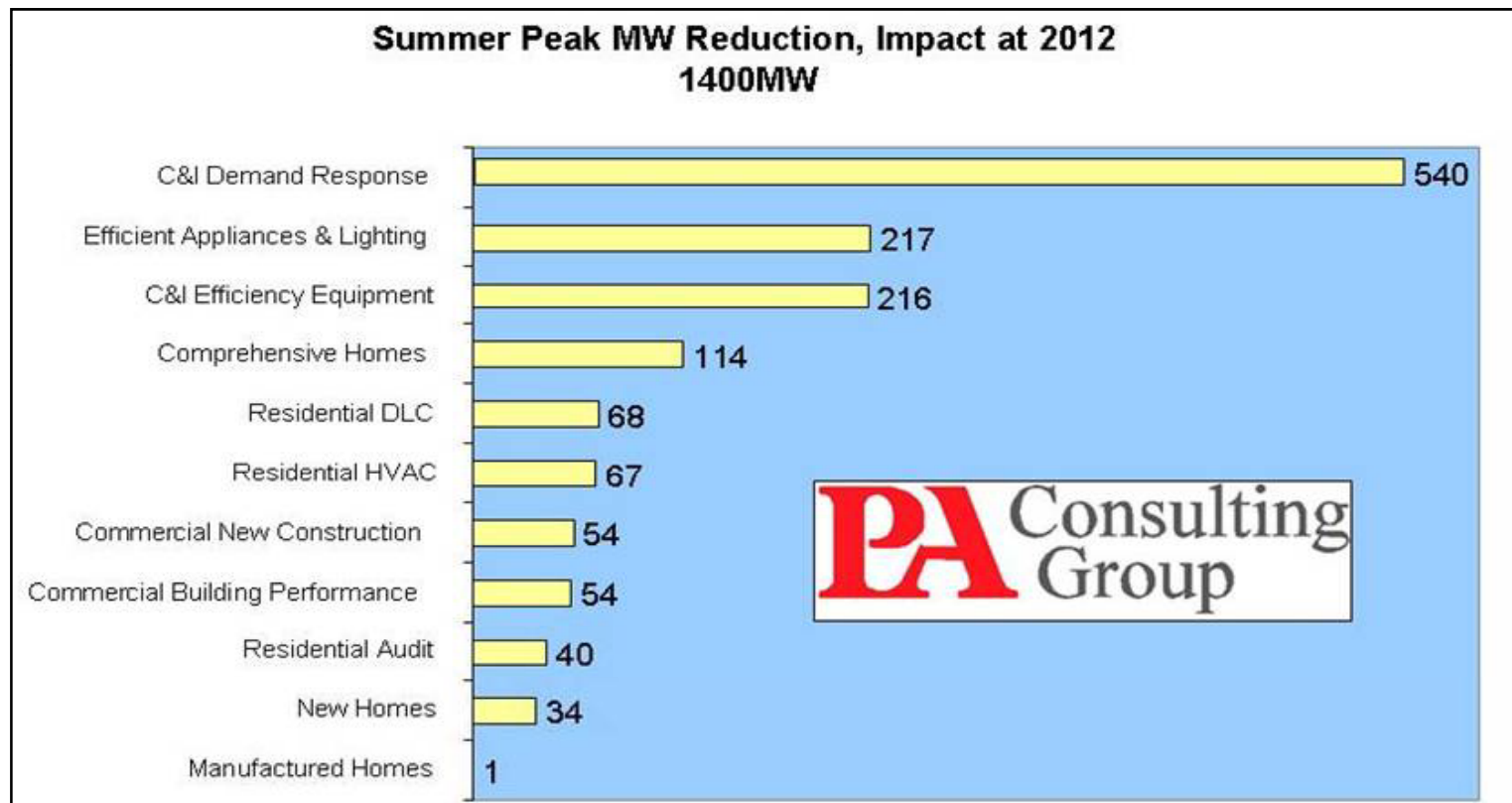


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# Program Selection Process

# TVA PA Program Concepts

- PA Consulting developed 11 potential program concepts that provided a path to meet TVA's 1,400 MW goal
- To take programs from concepts to reality, TVA first had to identify the most promising designs for initial development



# Project Selection Criteria

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- The initial program development schedule called for three to four programs to be fully developed and test marketed in FY 2009
- TVA assessed each potential program concept against nine key factors:
  - Peak Demand Reduction Potential
  - Energy Reduction Potential
  - End-User Needs
  - Distributor Needs
  - Cost per kW
  - Existing Expertise/Capacity within the TVA System
  - Speed to Market
  - Ability to Verify
  - Potential to Become Self-Sustaining Over Time

# Projects Selected

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- **TVA chose to develop a program concept for each market segment:**
  - Residential – In-Home Energy Audit
  - Commercial – HVAC and Lighting Program
  - Industrial – Industrial Process Improvement
  - End-Use Generation – Generation Partners Redesign
- **Additional considerations were factored into the final selections:**
  - Need to standardize the program development process and train staff
  - Need for a new Generation Partners pilot program contract

# Foundational Needs for Program Development

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**TVA had to build critical infrastructure to successfully develop and launch the four new program designs:**

- Expand the existing residential HVAC Quality Contractor Network to include weatherization contractors
- Create a new Preferred Partners Network of contractors for the commercial market
- Revise the existing TVA ESCO model
- Complete the initial EEDR staffing plan
- Secure program administration contract resources
- Further develop financial analysis tools and measurement and verification protocols
- Standardize the program development process



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# Program Development Process

# TVA's Situation is Analogous to U.S. Retail



# TVA Research and Concept Development

## March – April 2008

- PA Consulting completes market potential analysis
- TVA Draft EEDR Plan introduced
- Public meetings held across Valley to hear comments from stakeholders

## June 2008

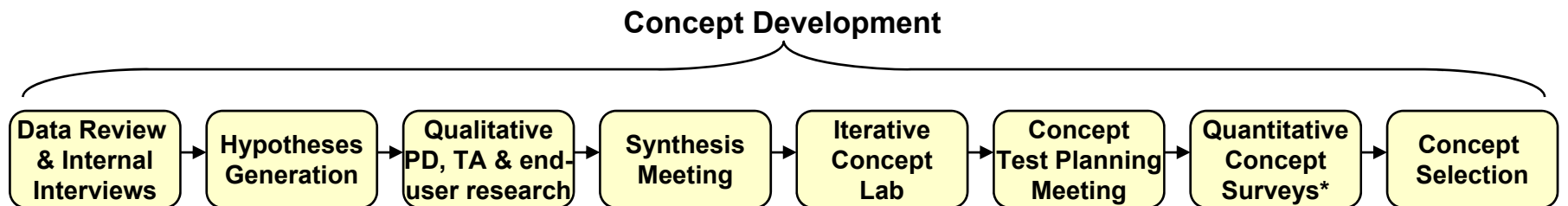
- Program selection process completed (TVA internal)

## August 2008

- Quantitative and Qualitative Market Research conducted across Valley
  - Focus Groups and In-depth interviews with 192 consumers, 62 Trade Allies, 26 Power Distributor
  - 4,800 consumers surveyed

## October 2008

- Final concepts selected



# Program Development

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## November 2008

- Program development begins
- Utilized data from research to build program mechanics
- Worked through power distributor committee process to develop service delivery mechanics

## April 2009

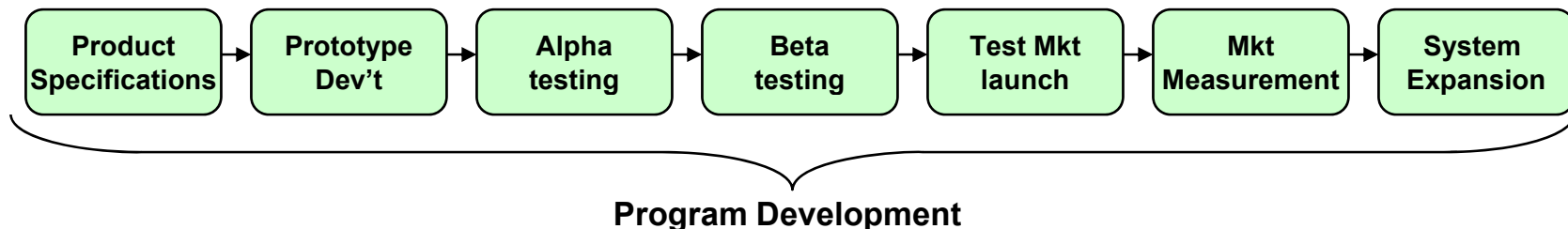
- TVPPA Energy Services Committee approves final program designs

## April 2009 through September 2009

- Market tests for In-Home Evaluation, Commercial Efficiency Advice & Incentives, Major Industrial Programs

## Ongoing

- Building program delivery infrastructure across seven-state region
- Developing measurement and verification protocol





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# New Energy Efficiency Program Designs



# Residential: In-Home Energy Evaluation Program

<b>Description</b>	<ul style="list-style-type: none"><li>• Whole-house energy evaluation by a trained professional. Detailed report provided.</li><li>• Reimbursement of evaluation cost and reimbursement of cost or financing for cost of applicable improvements implemented as a result of the evaluation.</li><li>• Documentation, verification of installation, and energy savings verifications are functions included in this turn key program.</li></ul>
<b>Target Market</b>	<ul style="list-style-type: none"><li>• Residential single-family homeowners interested in saving money by making energy efficiency improvement to their homes.</li></ul>
<b>Goal</b>	<ul style="list-style-type: none"><li>• Educate and incent the consumer to make needed improvements on his or her home to save energy.</li></ul>
<b>Incentive</b>	<p>Homeowners have the option to elect to receive cost reimbursement or financing to help make recommended efficiency improvements. Under the reimbursement option:</p> <ul style="list-style-type: none"><li>• TVA will reimburse the homeowner \$150 the cost of the energy evaluation if they spend \$150 or more on approved improvements. They also could receive up to a 50 percent reimbursement on improvement costs up to \$500.</li><li>• Under the financing option, the consumer can finance the cost of the improvements up to \$20,000 if they meet the credit requirements.</li></ul>



# Commercial: Efficiency Advice and Incentives Program

<b>Description</b>	<ul style="list-style-type: none"><li>•Commercial customers receive varying levels of facility energy assessments. (ADVICE)<ul style="list-style-type: none"><li>-Initial Assessment</li><li>-Preliminary Energy Audit</li><li>-Detailed Energy Study</li></ul></li><li>•Financial incentives are available for projects that help reduce power consumption during TVA's peak period. (INCENTIVE)</li></ul>
<b>Target Market</b>	<ul style="list-style-type: none"><li>•Eligibility - Commercial customers with 50 kW or greater peak demand</li><li>•Design Target – Aimed at large commercial customers with a billed demand &gt;250 kW such as:<ul style="list-style-type: none"><li>-Hospitals</li><li>-Universities and Schools</li><li>-Large offices</li><li>-Warehouses</li></ul></li></ul>
<b>Goal</b>	<ul style="list-style-type: none"><li>•Reduce power demand during TVA's critical peak period.</li></ul>
<b>Incentive</b>	<ul style="list-style-type: none"><li>•Lighting- \$200 per summer peak kW reduced</li><li>•HVAC- \$200 per summer peak kW reduced</li></ul>



# Major Industrial Program

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<b>Description</b>	<ul style="list-style-type: none"><li>•This program is designed to encourage electric energy efficiency improvements in a large industrial facility that has a contract demand of &gt; 5 MW</li><li>•Program applies to both direct served &amp; distributor served customers</li></ul>
<b>Target Market</b>	<ul style="list-style-type: none"><li>•Approximately 250 customers throughout the valley</li><li>•37 direct served</li><li>•210 distributor served customers</li></ul>
<b>Goal</b>	<ul style="list-style-type: none"><li>•Achieve 10% peak demand reduction at each facility in 4 years</li></ul>
<b>Incentive</b>	<ul style="list-style-type: none"><li>•In general, the incentive is \$100/kW for projects bundled which have &gt; 2 year payback</li></ul>

# Existing *energy right*® Programs

- TVA continues to operate its existing *energy right* suite of residential programs
- Additional programs will be added in FY 2010

Plan	Description
Paper & Online Home e-Valuations	Free evaluation allows homeowners to get started saving energy in their homes. Homeowner receives a personalized report and a free energy efficiency kit to begin making improvements.
Heat Pump Retrofits (SEER 13 Program) Heat Pump Retrofits (> 13 SEER)	Programs promotes the installation of high efficiency heat pumps in homes and small businesses. A Quality Contractor Network (QCN) maintains high installation standards. Ten-year financing for residential heat pumps with repayment through the consumer's electric bill.
New Homes <i>energy right</i> New Homes Platinum + Certified Multi-Family Homes <i>energy right</i> Multi-Family Homes Platinum + Certified	Promotes all-electric, energy-efficient new homes. All homes built <i>energy right</i> ® must be at least 7 percent better than the minimum rating , while homes built 15 percent better qualify as <i>energy right</i> ® Platinum or <i>energy right</i> ® Platinum Certified.
New Manufactured Homes <i>energy right</i> New Manufactured Homes Energy Star	Promotes the installation of high efficiency 13 SEER heat pumps in new manufactured homes and currently has over 40 percent of the market share in the Valley. Energy Star® Manufactured Homes pilot with MHRA (Manufactured Housing Research Alliance) to promote ENERGY STAR® homes.

# Expansion Timeline Targets

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- Residential
  - **24** distributors currently participating in market test
  - **50** additional distributors in October 2009
  - **1,500** audits in FY 2009
  - **20,000** audits in FY 2010
- Commercial
  - One Tennessee and 12 Mississippi distributors currently participating in market test
  - Expanding program Fall 2009, beginning with major metro areas
  - **1,700** energy assessments completed FY 2010
- Industrial
  - Currently being offered to all direct-serve and distributor-served customers that qualify



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# Development Plans for FY 2010

# Program Development Continues FY 2010

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- Under 5 MW Industrial Program
- Small Business Program
- HVAC Maintenance Program
- *energy right*<sup>®</sup> Program Redesign
  - HVAC
  - Water Heating
  - New Homes Program



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# Conclusions

## Key Insights

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- Infrastructure development is critical to long-term success
- As market tests continue, TVA will continue to refine program cost and impact data
- Initial infrastructure developed will allow TVA to increase speed-to-market in FY 2010 and beyond
- Focus dollars on best performing programs

