

### **Energy & Utilities**

RITIATEGY AND RUSINESS IMPROVEMENT CONSULTIN

# **Growth Opportunities For Minority-Owned Businesses**

MED Week 2001



#### **This Report Was Written And Produced For:**

**U.S. Department of Commerce** 

**Minority Business Development Agency** 

**Ronald N. Langston** 

**National Director** 

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### U.S. DEPARTMENT OF COMMERCE

### **Project Charter**

**Create An Industry Report That Identifies The Growth Opportunities For Minority-Owned Businesses In The Energy & Utilities Industry** 

### It should place emphasis on the following:

- Industry trends and issues within the industry
- Identify market opportunities for growth
- Growth strategies and critical success factors
- Identify opportunities for partnership between Minority Businesses and Utilities

The Asaba Group Retained To Identify Growth Opportunities

### U.S. DEPARTMENT OF COMMERCE

### **Project Approach**



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### **Executive Summary**

#### Industry undergoing deregulation and restructuring of the value chain

- Consolidation, Convergence, Globalization, and Divestitures occurring among industry players
- New and dynamic competitive rules emerging in every segment of the industry

#### \$86 Billion of sourcing opportunities currently exist in the Industry

Opportunities will require unique capabilities and sharpened strategic focus to be successful

## New electricity infrastructure build-out occurring and will provide opportunities for Minority Business growth

- Limited generating capacity and transmission line constraints will increase capital expenditures
- Stringent environmental standards and efficiency requirements will drive new plant equipment upgrades
- Build-out may be comparable to the last 5 years in the Telecommunications Industry

## Challenge is how to engage new and existing players at each stage of the value chain to drive minority inclusion

#### Need to develop new paradigm in driving Minority Business growth

 From seeking sourcing opportunities with industry players to partnering with them to drive revenue growth and shareholder value 6

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### **Key Industry Trends**

### Deregulation and restructuring occurring in the industry

- Industry undergoing transformation from a highly regulated and integrated into a more competitive market
- A state-level process characterized by different approaches to timing and pace

## Consolidation, convergence, globalization and divestiture occurring in the industry. Fewer but larger players are emerging

- Consolidation among industry players to achieve critical mass and leverage economies of scale
- Convergence of electricity and natural gas participants to become total energy providers
- Globalization by industry players in an attempt to leverage expertise and capabilities in new markets
- Divestiture of assets driven by regulatory requirements or by embracing new competitive position

#### Customers' choice emerging as deregulation begins to accelerate

- Utilities beginning to view energy consumers (not regulators) as customers
- Future growth will occur with residential and commercial customers
  - Higher margins compared to industrial customers

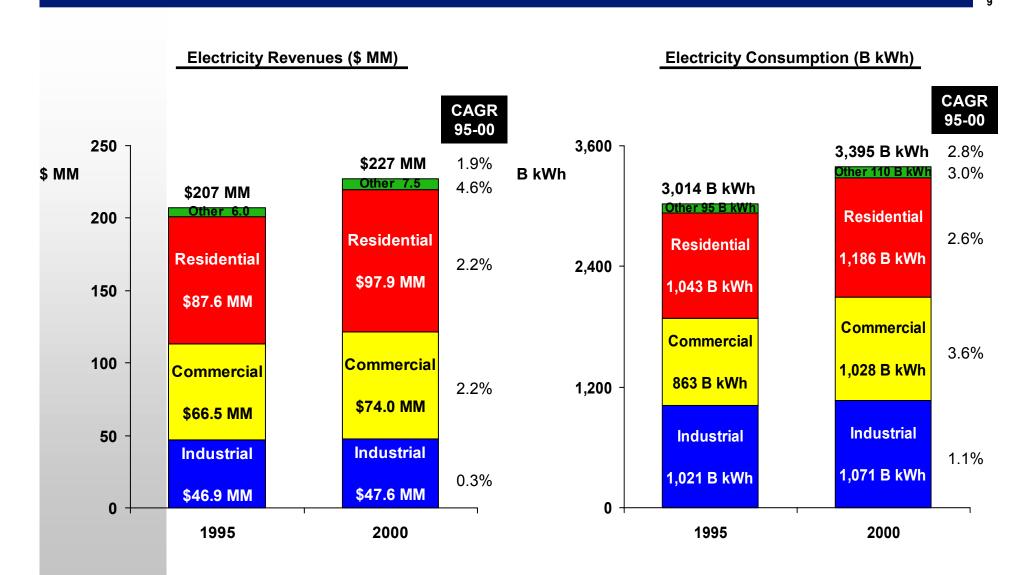
#### Significant uncertainties still abound in the industry

- California power crisis raising questions about pace and thrust of deregulation
- Legal challenges to FERC Order 888; currently in the U.S. Supreme Court

## **Electric Energy Industry Has Seen Modest Growth During Last Five Years**



Residential And Commercial Segments Have Driven Industry Growth



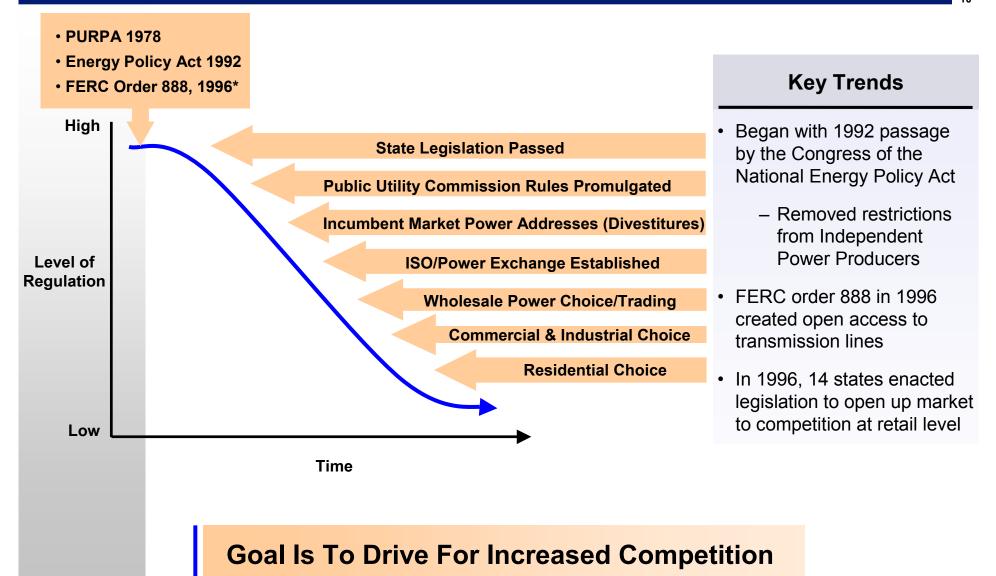
Other: Street lights, railways, public transport

SOURCE: Energy Information Administration, Edison Electric Institute



## Typical Path Towards Deregulation And Industry

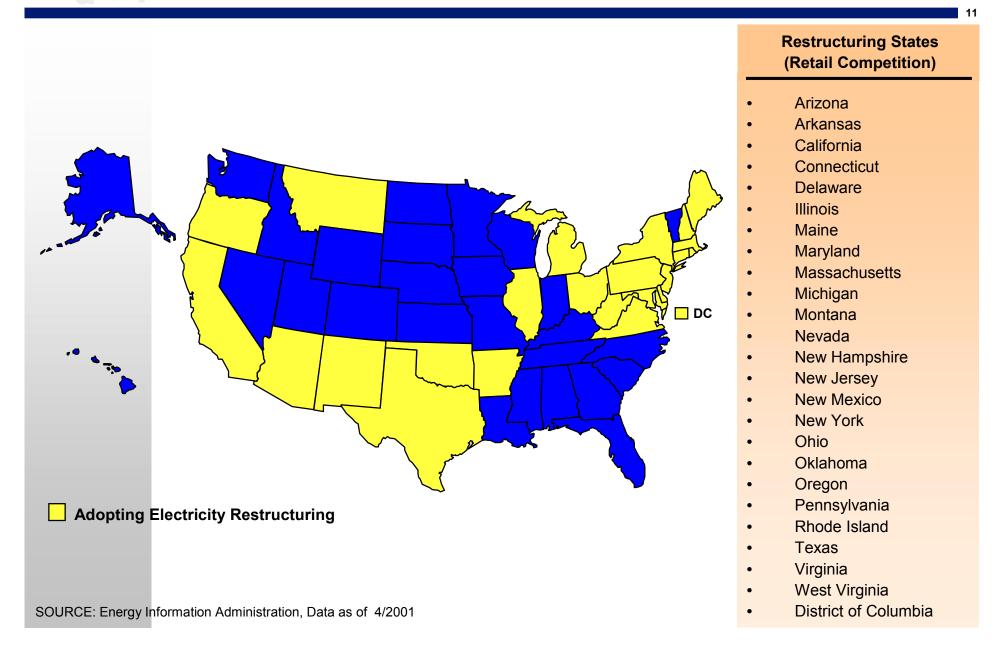




\* FERC Order 888 under legal considerations in the U.S. Supreme Court

### U.S. DEPARTMENT OF COMMERCE

# Today Sixty-Two Percent Of Americans Live In States That Have Adopted Electric Retail Competition





### **Deregulation Driving Competition In The Value Chain**

Generation Transmission Distribution Generation Wholesale Transmission Distribution Retail Services

#### **Dominant Regional Monopolies**

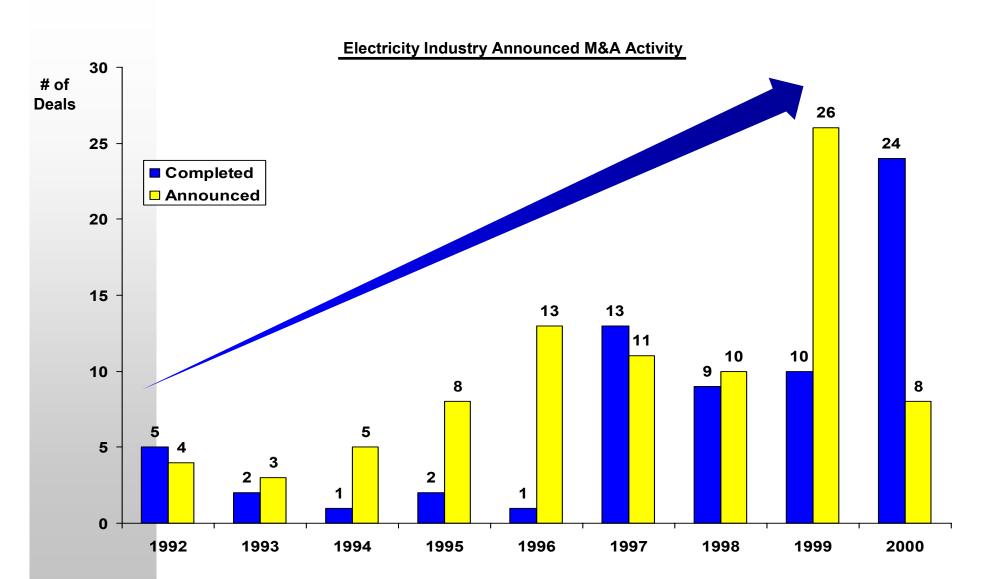
- Captive consumer markets
  - Especially residential and commercial accounts
  - Little or no bargaining power
- Pricing as a function of cost recovery and fixed rate of return
- Minimal level of innovation

#### **Deregulated Value Chain**

- Competition in most areas of the value chain
- Pricing as a function of supply and demand
- Environment which fosters innovation

**Has Led To Unprecedented Levels of M&A Activities** 





SOURCE: Edison Electric Institute, Asaba Group Analysis

# Underlying M&A Rationale Has Been To Unlock Shareholder Value And Meet Regulatory Requirements

#### **Consolidation (regional)**

- Boston Edison and Commonwealth Energy System N-Star
- Nevada Power and Sierra Pacific Resource

#### **Convergence (Electricity and Natural Gas)**

- Enova and Pacific Enterprises SEMPRA
- Long Island Lighting Co and Brooklyn Union Gas Keyspan Corp

#### Globalization

- Pacific Corp acquired by Scottish Power UK
- New England Electric acquired by National Grid UK

#### Mergers

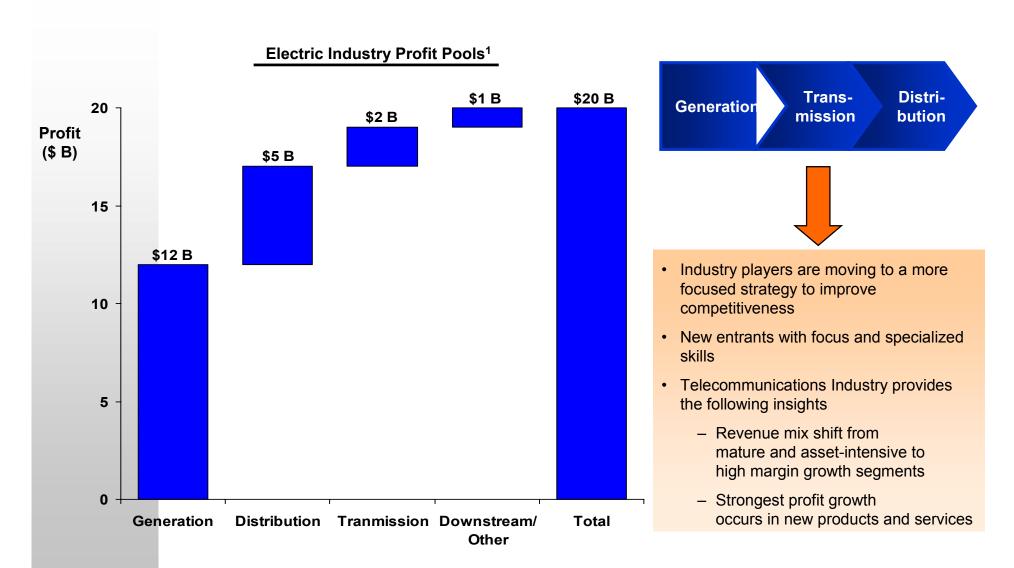
- Dynegy and Illinova
- PECO Energy and Unicom Exelon

#### **New Entrants**

- IPP CALPINE; AES Corporation acquires Indianapolis Power and Light Co (IPALCO)
- Trading Goldman Sachs invests in Constellation Energy







1. 1995 Industry "Profit Pools" SOURCE: McKinsey and Company, Asaba Group Analysis

## **Emerging Electric Energy Value Chain Resulting From Deregulation**



Including Focused And Specialized Competitors

Retail/ Raw Material/ **Power Trading** Distribution/ Power Marketing **Equipment Supplie** Generation (wholesale) **Delivery** Services Plant Equipment/ **Independent Power Power Traders Utilities Energy Market Services Producers (IPP) Turbines** Citizen Power Ilinova Energy Partners N-Star General Electric Sithe Energies CMS Energy DTE/Probyn Energy Solutions BG&E Alstom Calpine Avista Energy PECO PEPCO Small-Scale **Ancillary Products/ Services** Merchant Generators **Generators**  AES Corporation N-Star (RCN Corp) Caterpillar Mirant Broadband NEES/National Grid **Fuel Sourcing Utility Generators**  Leased fiber access Glasgow Electric · Multiple gas/coal PG&E Gen Cable TV Constellation Energy suppliers Portfolio Global Asset Focus Enron Power Enron Enron Enron Enron Marketing (Construction/ Energy **Energy/Fuels**) Services Entergy Power Entergy (Nuclear Entergy Domestic **Power Group)** Marketing Utility Southern Co. Southern Co Southern LINC (Southern Nuclear) (5 Utilities) Duke Trading Duke Energy N.A. Duke Power Duke Energy Management & Marketing



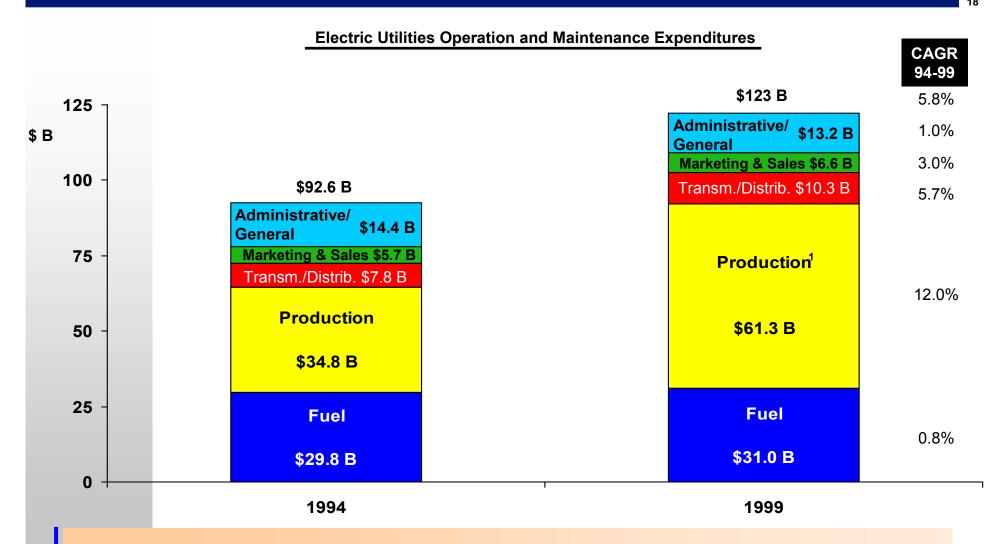
## Industry's Structural Changes Present Significant Opportunities To Minority-Owned Businesses

#### Opportunities In all areas of the value chain

Retail/ Raw Material/ **Power Trading** Distribution/ Power Marketing **Equipment Supplie** Generation (wholesale) **Delivery Services**  Turbines Distributed Power Marketing Remote Metering Services Installation, Reading, Installation Generation Trading Monitoring Street lights and Data Capture Brokering All fuel Plant - Risk **Suppliers** Management management Transmission Billing and Collections Cogeneration Line build-out facilities Standby/Ready Customer Contact Reserve Production O&M Centers · Operations and - Rolling/Cold Call centers Maintenance Reserves Information Technology Balancing CRM/Database Energy Management Brokers/ Aggregators Services

Significant Opportunities For Minority-Owned Businesses

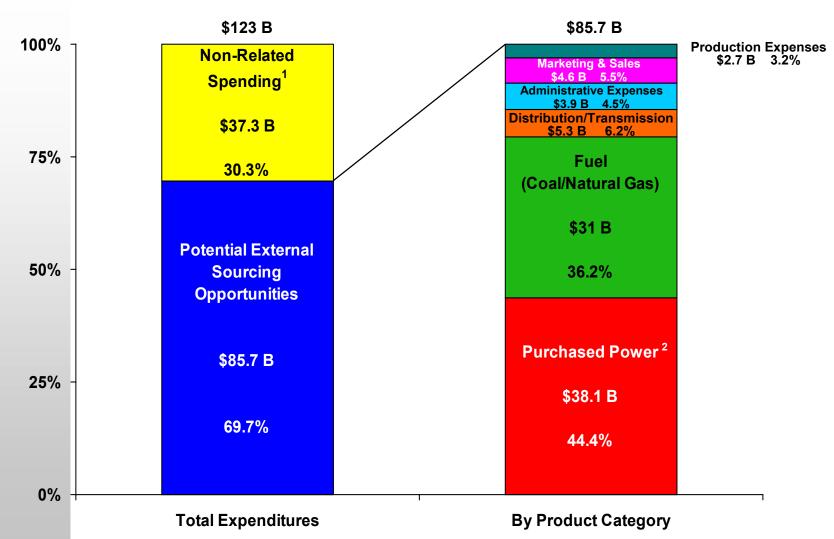




**Expect Industry Restructuring To Change Mix of Total Expenditures** 

<sup>1.</sup> Reflects costs associated with Environment-related upgrades SOURCE: Center for Advanced Purchasing Studies, Asaba Group Analysis, Edison Electric Institute Yearbook





- 1. Includes wages, benefits, nuclear expenses, physical overheads
- 2. Does not represent total consumption, but Fuel and Power trading reselling SOURCE: Energy Information Administration, Edison Electric Institute, Asaba Group Analysis





**Power Plant** (Equipment/ Construction)

Wholesale Power/Fuel Marketing

**Power** Generation

**Production O&M Expenses** (MRO)

**Transmission** and **Distribution** (Equipment/ **Construction**)

Customer Contact Management

Information **Technology** 

**Emerging Technologies** 

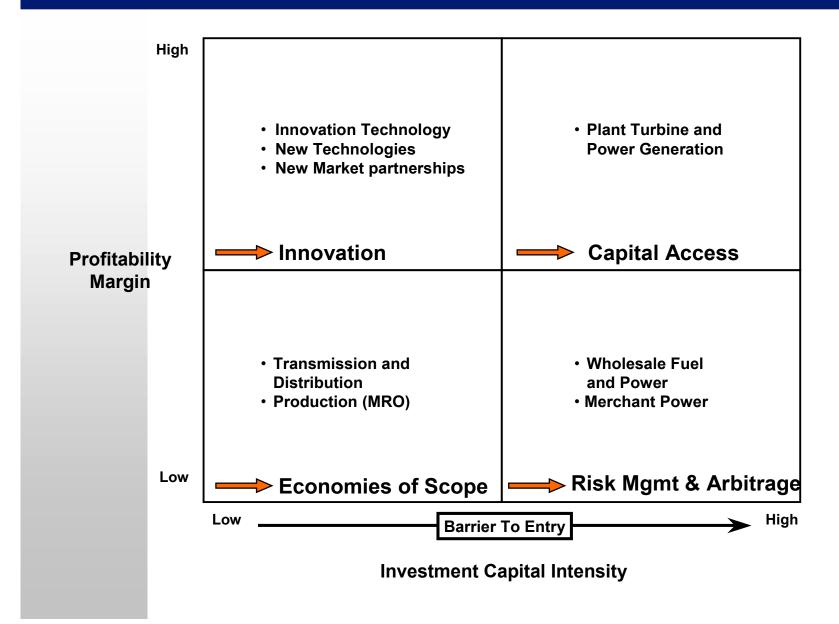
**New Market Partnerships** 

**Each Requires Unique Core Capabilities And Strategic Focus** 

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## Different Strategic Focus Required To Extract Value From Identified Opportunities

Defined By The Key Drivers Of Profitability



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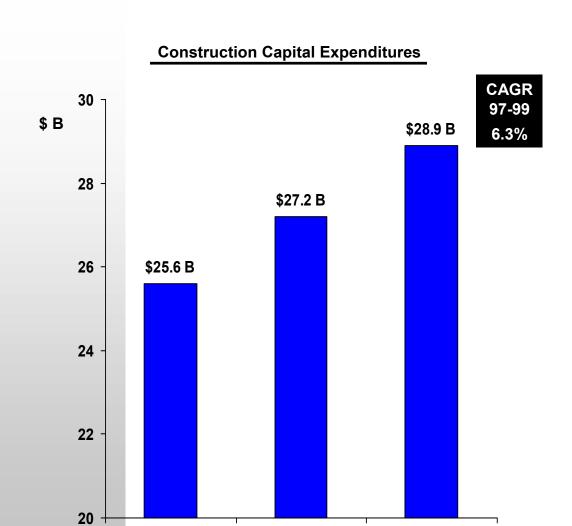
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## Growth In Construction Capital Expenditures For New Plants Provides Attractive Opportunities



1997

#### **Future Spending Drivers**

- New plants construction to increase supply
  - Estimated range from 1,300 to
     1,900 new power plants over next
     20 years
- Distribution and transmission build-up
  - Estimated 38,000 miles of new pipes
  - Expansion of transmission grid
- Energy efficiency standard
  - Drive plant equipment upgrades

1999

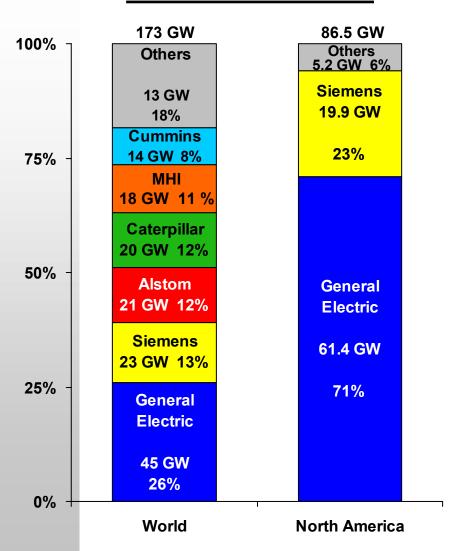
1998

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## Power Plant Turbines Are A Significant Share Of These Expenditures

A \$40 Billion Market Worldwide





#### **Key Trends**

- Utilities and Independent Power Producers renewing aging electricity generation equipment
  - Similar to Telecom fiber optics build-out
  - Typically gas and steam turbines and related equipment
- Power generators adding "second steam cycle" to existing gas-fueled plants
- Environmental pressures demanding clean, environment friendly and more efficient turbines
- Service agreement contracts account for 50% or revenues

SOURCE: Data Monitor, Financial Times



# **Generation Capacity Margins Have Declined From**

storical Levels (Approximately 25%)	
IIS Consoity Margin Analysis	

	U.S. Capacity	Margin Analysis	
	Electricity Demand (GW)	Electricity Generation (GW)	Capacity Margin
Eastern Grid	501.4	582.2	13.9%
Texas Grid	53.4	69.8	23.4%
Western Grid	114.8	141.1	18.6%
U.S. Total	669.6	793.1	15.6%

Has Led To Increased "Wheeling" Of Power Across Regions

### **Cross Regional Transmission Transactions Have Increased Significantly**

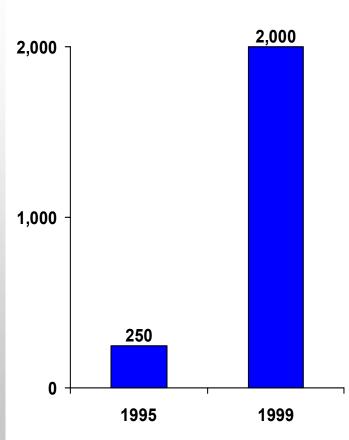


Transmission Capacity Becoming A Scarce Resource

**Cross-Regional Transmissions** 



## Number of **Transactions** (000)



#### **Trends Which Favor Transmission Build-out**

- Supply and demand not matched regionally
  - Need to "wheel" power between regions
- Regional price differences
  - Cheap source of power in the Northwest compared to California
- Not likely regional capacity will be built soon
  - Plant site decisions made too slowly
    - → Subject to review by several state-level agencies and stakeholders
    - → "Not in my backyard" issues
- Ultimately a function of economic trade-offs between generation and transmission

**Expect Increased Construction Expenditure** In Transmission Infrastructure

SOURCE: USA Today 5/1/2000, Edison Electric Institute

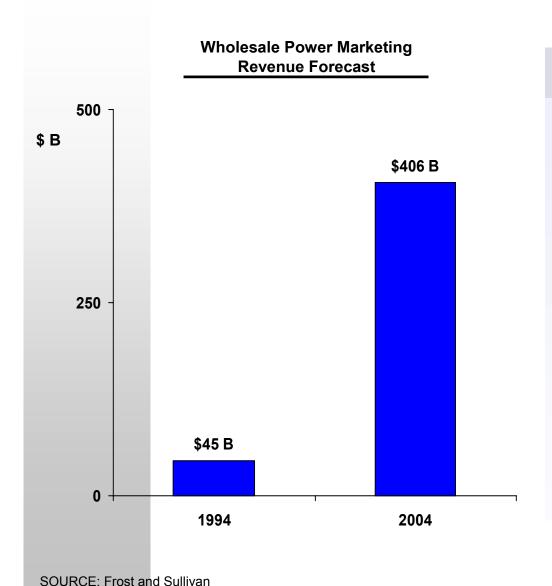
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### **Wholesale Power Marketing Experiencing Strong Growth**

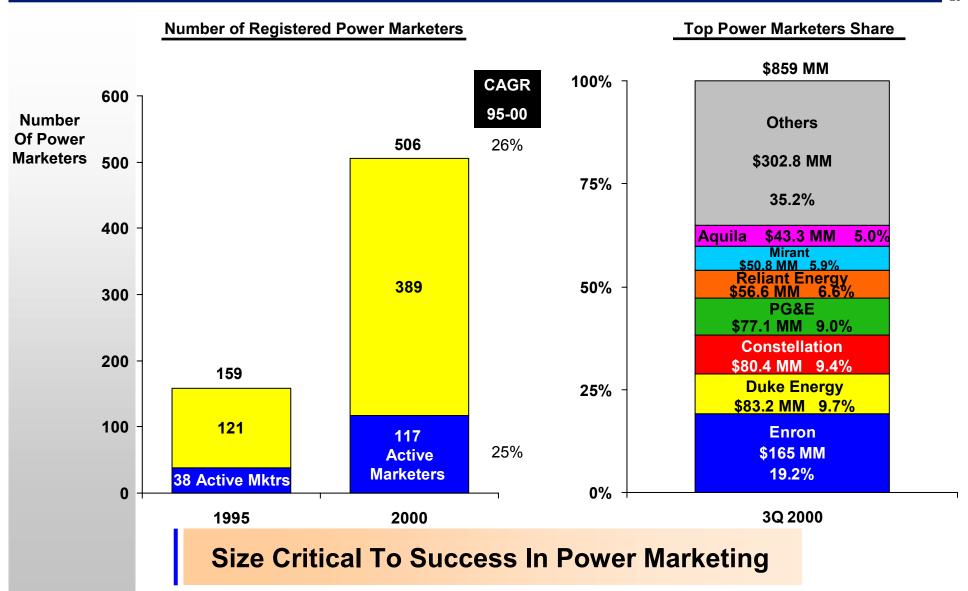


#### **Key Trends**

- Very Volatile Commodity
  - Driven by fragmented transmission, structural changes with supply and instability of market players
- Power marketers evolving to "Wall Street" type trading houses
  - Professional risk managers and quantitative experience
- Market participants consolidating as trading margins decline
  - Significant exits also occurring
- Marketers taking advantage of convergence
  - Measuring the value of trading and arbitrage opportunities



## Growth Has Attracted A Lot of New Entrants, But Becoming Concentrated



SOURCE: Federal Electrical Regulatory Council (FERC), Edison Electric Institute Power Marketers Yearbook, Energy Information Administration



#### **Access to Market Knowledge**

- Knowledge to create and price new products
- Enhanced ability to balance a portfolio of different risks
  - RTO's need proof of significant assets/strong balance sheets

#### **Signals Prestige and Supply Power**

- Ability to attract top talent
  - Trading desk and risk management are at a premium
  - Similar to Wall Street commodity trading capabilities

#### **Essential in developing "Staying Power"**

Ability to withstand losses on trades that will be offset by gains on future trades

#### Ability to gain customer credibility

- Purchase and supply contracts given to companies with reputation of being capital and delivery risks
  - New Fund Transfer Agent (FTA) agreement tools available to MBE's

#### **Increase** profits

- Shrinking margins from increased number of participants and liquidity
- Ability to leverage fixed cost over large volumes significant driver of profitability

"We look for vendors that can do business in at least five states"

Power Commodity Manager
 Electric Utility

### **Critical Success Factors For Winning In Power Marketing**

Substantial Capitalization – Strong balance sheet, credit rating and access to capital

"Had a supplier go bankrupt on me and cost us a bundle. We only need suppliers with A-rated financial or very strong financial backing."

- Automotive OEM

 Need to leverage the Fund Transfer Agent (FTA) agreement and ensure it gains acceptance with the marketplace

#### Diversification into gas and other commodities

Critical in gaining scale and leveraging trading expertise

#### Define cultural niche in the category (strategic positioning)

Focused services that are value-added to customers

#### Acquire world class risk management and trading skills

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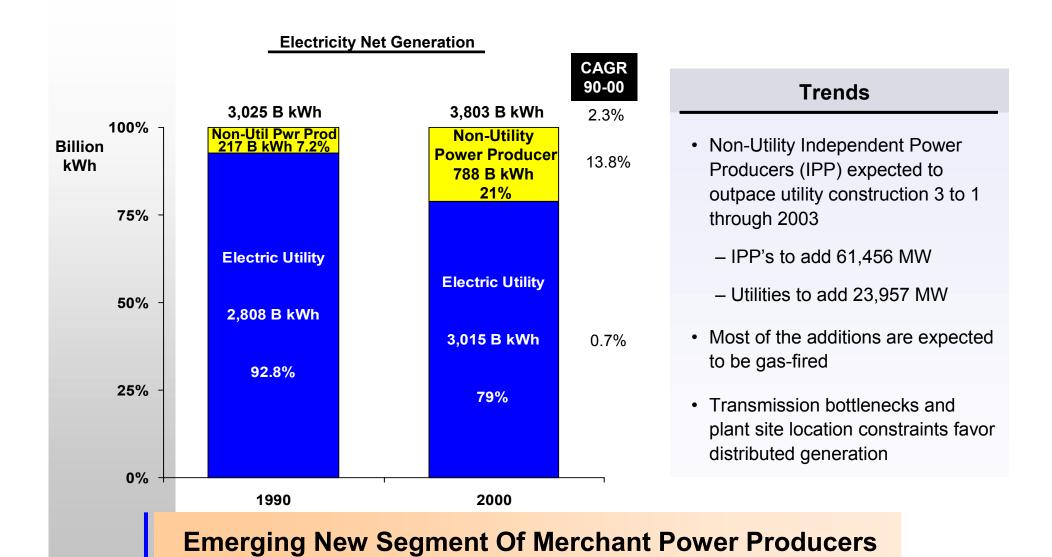
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Power Generation  Maintenance and Operations Related Expen	

## Non-Utility Power Producers Have Grown Presence In Generation



Largely A Function Of Electric Utilities' Divestitures

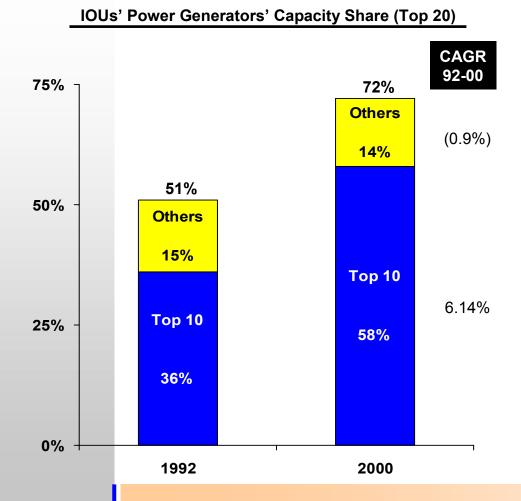


SOURCE: Energy Information Administration



## Consolidation Trend Also Occurring Among Power Generation Players

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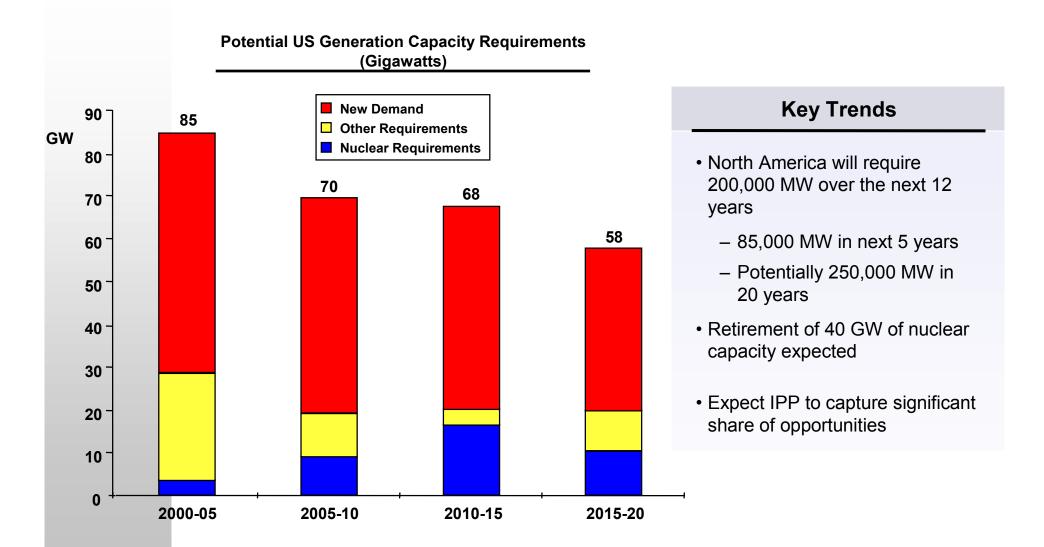
#### **Top Players In Power Generation**

- AES Corporation
- Mirant
- Calpine
- Sithe Energies
- NRG Energy
- Enron
- Reliant
- PG&E Generation
- Duke Energy
- Dynegy
- FPL Energy
- Entergy
- Dominion Energy

**Expect Total Share To Decline As IPP's Gain Share** 

SOURCE: Asaba Group Analysis

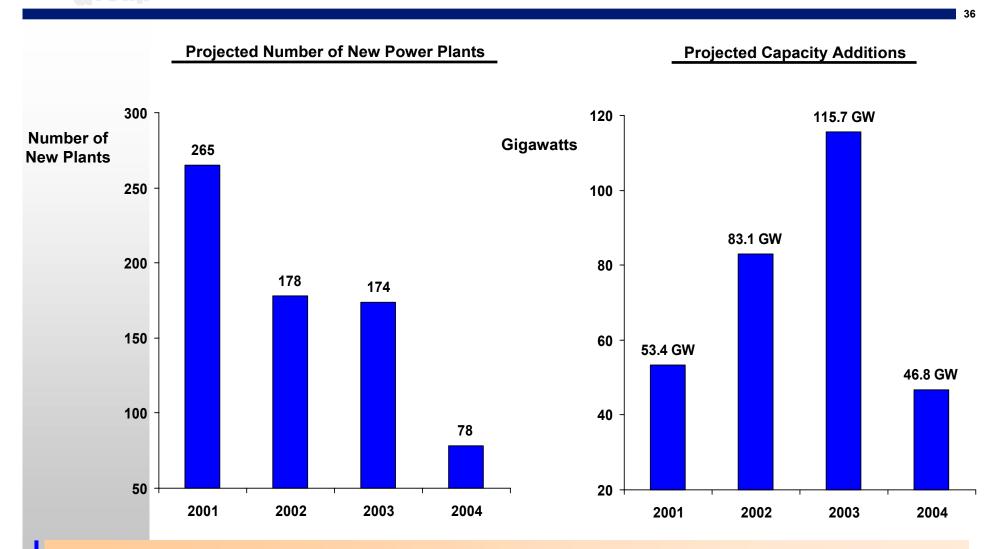
## Modest Demand Growth Combined With Baseload Capacity Reduction Will Increase Need For Generation



SOURCE: Energy Information Administration, Financial Times, Asaba Group Analysis



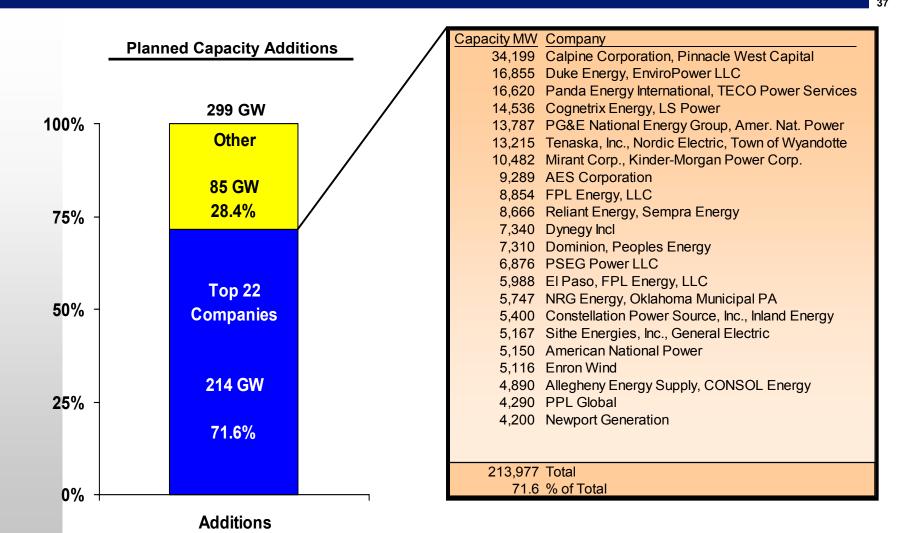
## **Most Planned Capacity Addition Through 2004**



Minority Businesses Need To Move Quickly To Capture Opportunities







**How Do We Engage These Companies For MBE Inclusion?** 



#### Regulated utilities had fiduciary duty to build power plants when the need arose

Typically demand existed in areas within monopoly market control

## Investor-owned power generators' planned capacity can be a function of speculative economics

- Willing to treat initial approval process as a call option
  - Regulatory permitting queues are speculative
- Viewed as a prudent way in managing risks with capital investment decisions

## Economic trade-off between transmission build-out and new generation will drive capital availability

Declining power prices will impact decisions on new capital investments

## U.S. DEPARTMENT OF COMMERCE

#### **Future Trends In Power Generation**

MBE's Must Be Aware Of These Emerging Trends

New power generation technologies – distributed generation application Typically small center power plants at or near their point of use



Micro turbines

- speed gas turbines in the 15-300kW range
- low emissions and low maintenance
- minimal vibrations and noise



**Fuel cells** 

- produce power electrochemically, similar to a battery
- quiet, low emission, and clean renewing
- environmentally appealing



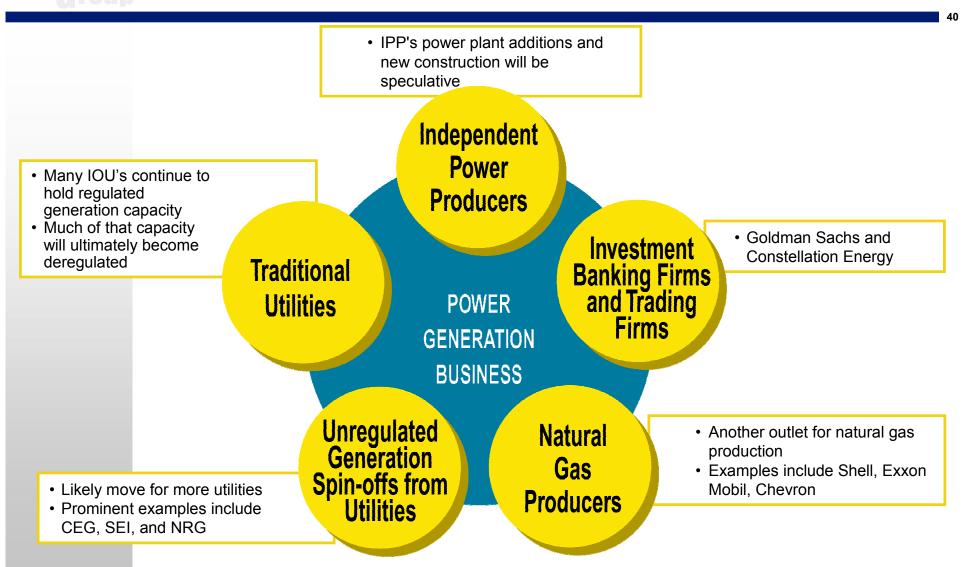
Photo Voltaic (solar power)

- power cells that use solar energy to produce power
- sited anywhere
- environmentally friendly

**New Technologies Begin To Address The Constraints Of Storing Electricity** 

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# A Broad Range Of Companies Are Looking For A Piece Of The Merchant Power Market



View As Potential Field For Strategic Alliances

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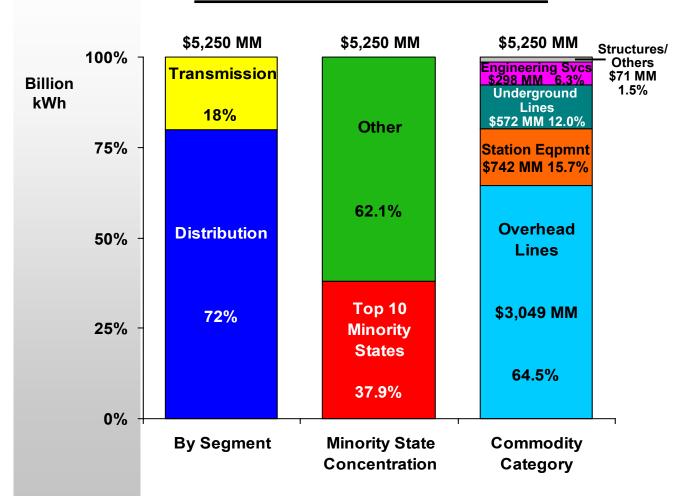
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# Estimated \$5.2 Billion Spent Nationally On Transmission and Distribution Maintenance Expenditures

72% Spent On Power Distribution-Related Expenditures

## Major Investor-Owned Utilities' Transmission and Distribution Expenditures<sup>1</sup>



#### Potential Opportunities/ Categories

- · Control systems and parts
- Transformers and high voltage cabling
- Power line installation and maintenance
- Outside structures
- Electrical components
- Engineering design services
- Street light monitoring and maintenance
  - Equipment and components

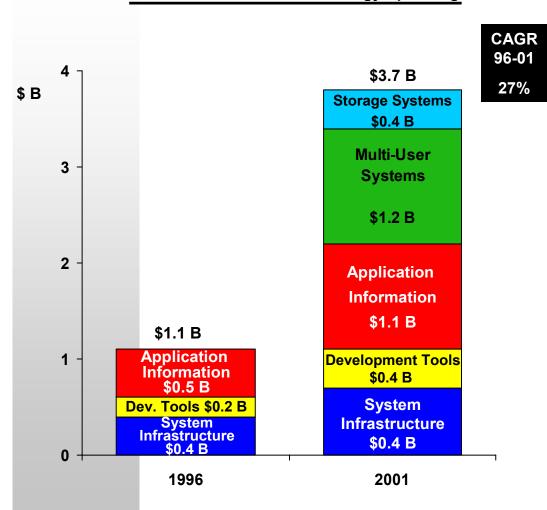
1. Does not include wages and certain internally-sourced operational spending SOURCE: Asaba Group Analysis, Edison Electric Institute, Energy Information Administration





## Information Technology Expenditures Expected To Increase Over Next Five Years

#### **Utilities' Information Technology Spending**



#### **Key Trends**

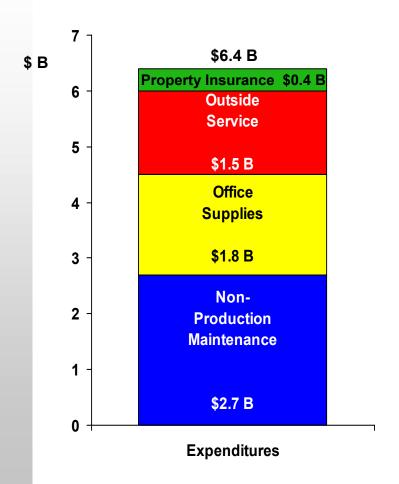
- Increased competition driving need for leading-edge technology
  - Local area networks (LAN)
  - Productivity Enhancing Tools
- Database reporting and operational application for energy management
  - Real-time information capturing and reporting
  - Field equipment control
  - Data acquisitions from remote locations
- Automated meter reading equipment and software
- Customer information systems
  - Data mining, service support and call center operation
- E-commerce application

SOURCE: Asaba Group Analysis, International Data Corporation



# Operations) Expenses Is A \$6.4 Billion Opportunity

#### **MRO Expenditures**



#### **Opportunities/Key Trends**

- Ability to provide total commodity management solutions
  - Economic ordering application
  - On-line auctions
- Provide services to multiple locations
- Great opportunities for MBE's seeking industry diversification of revenues
- Other opportunities exist in financial services
  - Leasing, pension plan management
  - Funding new construction/project financing
- Environment Services
  - Laboratory analysis, Field testing
  - Remediation and air monitoring

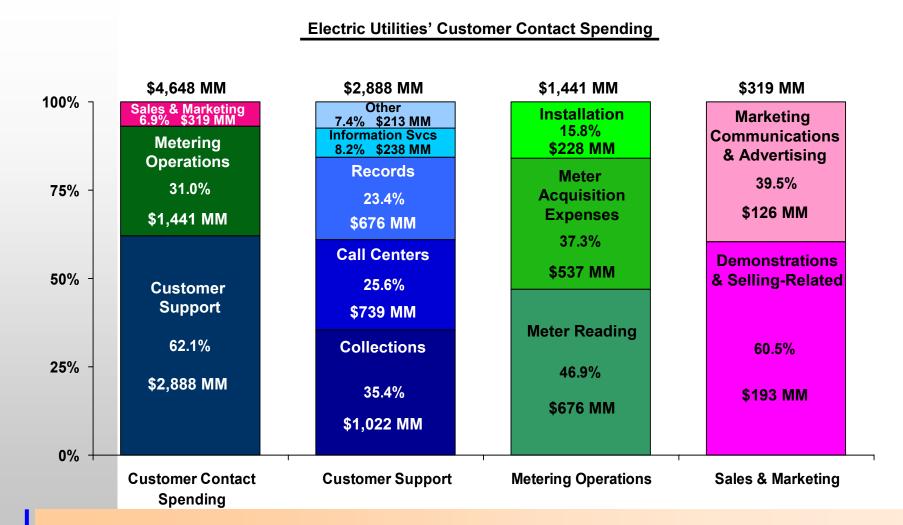
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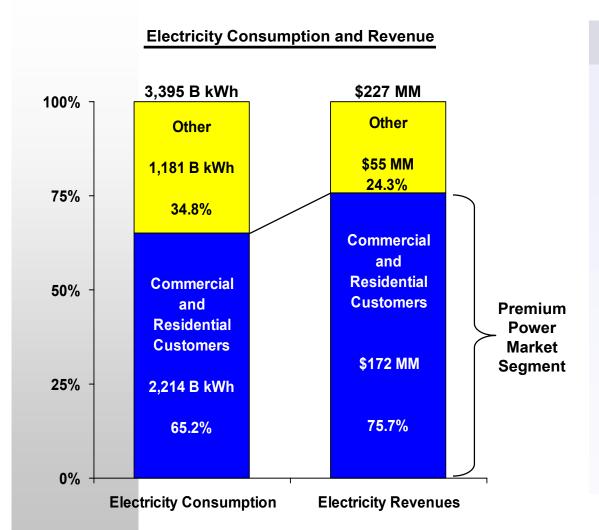


## **Business Processes**



**Expect Expenditures To Grow With Increased Retail Competition** 

# With Increased Competition, Retail Providers Must Focus On Building Customer Loyalty And Differentiation



#### **Key Trends**

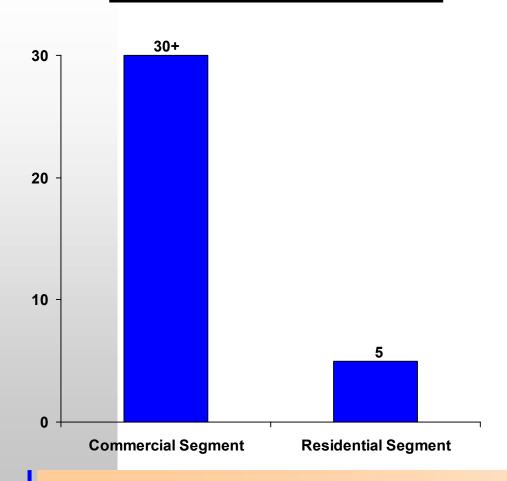
- Price, service and image most important criteria in customer purchasing decision
- Ability to meet customer needs will be key in preserving and increasing market share
  - Satisfied customers will be more loyal
- Premium power market has emerged
  - Customers to pay premium rates for quality and reliability
- Profitability will be a function of meeting needs and lowest possible cost of service
  - Potential to outsource related processes to effective partners



# Retail Providers Expect More Competition With Commercial Customers

Telecommunications Industry Provides Insights

#### Average Number of Competitors<sup>1</sup> (Telecom)



#### **Trends/Implications**

High cost of servicing for residential customers

- Transaction, search and service cost
- Can be leveraged by increasing economies of scope
  - More bundled services
- Requires a different mousetrap
  - Regional/Local density

Commercial accounts provide near-term opportunities

- Different segments
  - National accounts
  - Premium power users
  - Local/Regional accounts

**Expect Increased Spending In Servicing Commercial Customers** 

1. Long Distance

SOURCE: Asaba Group Estimates

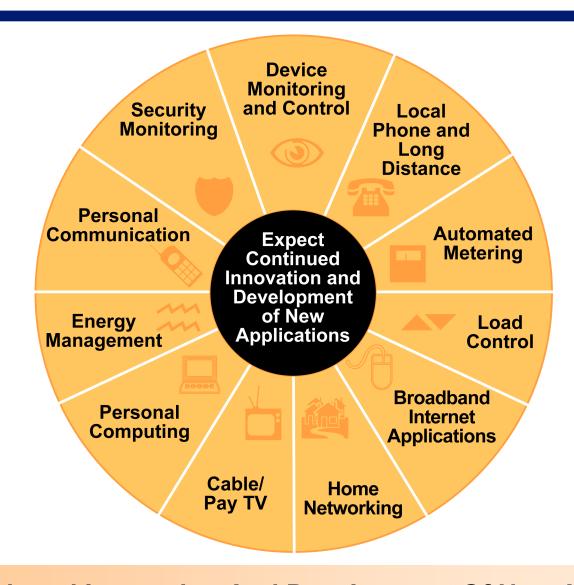
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# Convergence Of Energy, Gas, and Communication Will Create A New Retail Environment

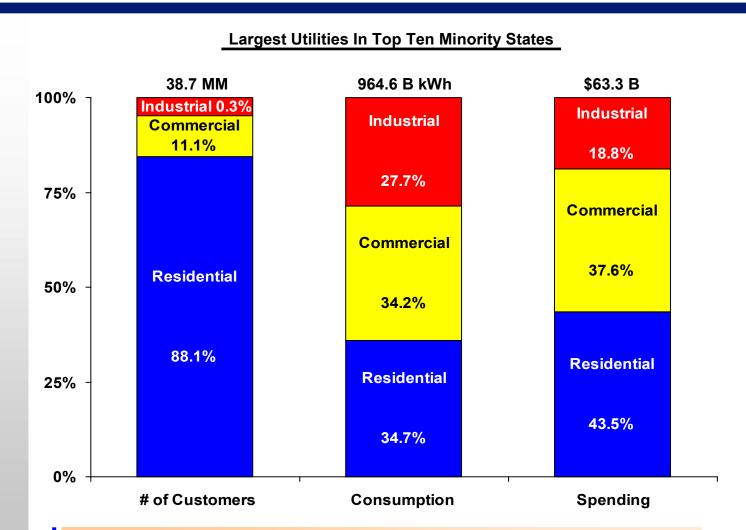


**Expect Continued Innovation And Development Of New Applications** 

#### **E**4

### Residential And Commercial Customers Important To Service Providers

Account For 80% Of Total Revenues In Top 10 Minority States



MBE's Must Begin To Identify New Approaches
To Create "Win-Win" Partnerships With Utilities

SOURCE: Department of Energy, Asaba Group Analysis

# MBE Partnering With Retail Service Providers To Increase Revenues From Other Products/Services



Leveraging Expertise in Customer Relationships and Aggregation

## Deregulating environments coupled with industry undergoing structural changes create a challenging situation for utilities

## Key challenge for utilities is avoiding Margin Implosion and declining earnings growth momentum

- Declining revenue and margin from increased competition
- High penetration within home markets, little room for growth through customer acquisition
- Need to reduce cost of operations cost to service current customer base

#### Most utilities core capabilities are in:

- Regulatory control
- Building and managing expansive networks
- Maintaining mobile workforces

## MBE's potentially can leverage utilities to grow ancillary products/services in major minority dominant markets

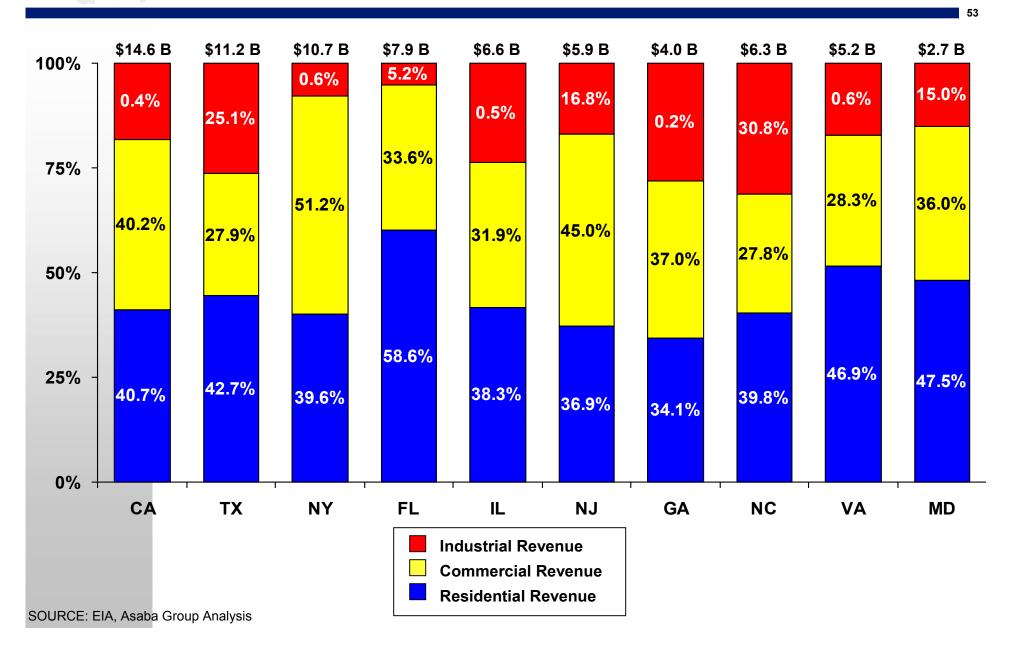
- MBE's can provide telecommunications services, security services, etc.
- Advantage with capital access from utilities
- Leverage "Right of way" network access by utilities

#### Opportunities for MBE's as Energy Service Companies (ESCO) and Marketers

Prevalent in New York and Georgia

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# Residential And Commercial Customers Account For Significant Share Of Revenues For These Utilities





## **MBE's Must First Identify Customers' Unique Needs**

Then Develop Tailored Solutions

#### Industrial customers may want

- Low price based on high quality
- Price hedging alternatives
- Co-generation make vs. buy decisions
- Energy management tools/services

#### Commercial customers – typically a premium energy market

- Extensive billing information
- High quality and reliability during peak hours
- E-Commerce applications

#### **Residential Customers**

- Bill consolidation
- Bundled services and applications
- Time of day pricing

5



## **Possible Segments: Illustrative Example**

**Need Based Segments** 

Traditional Segments	Quality Seekers	Off-Peakers	Low Users
Industrial	Chip Manufacturer	Laundry Service	Hand Crafted Factory
Commercial	Hospital	Database Management Firm	
Local Business	Internet Provider	Local Bakery	Local Gas Station
Residential			Residents
Desires of Need-Based Segment	<ul><li>Non-interruptible power</li><li>"Clean" power</li><li>24 hour steady demand</li></ul>	• Time of day billing     • Outage insurance	<ul><li>Interruptible power</li><li>Billing financing</li></ul>

MBE's That Can Develop Unique Value Propositions To Target Segments And Develop Winning Partnerships With Utilities

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