



## **Energy & Utilities**

STRATEGY AND BUSINESS IMPROVEMENT CONSULTING

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

*MED Week 2001*

**The  
Asaba  
Group**

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

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**U.S. Department of Commerce**

**Minority Business Development Agency**

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**National Director**

**By:**

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This analysis on the energy industry was prepared by The Asaba Group and is the Group's interpretation of the economic trends of the energy industry. The study is not a Commerce Department report, but was developed for the sole purpose of discussion amongst industry experts. The conclusion and analysis of the report do not necessarily reflect the views of the U.S. government..

## **Express Gratitude And Acknowledgement For Contributions To The Project:**

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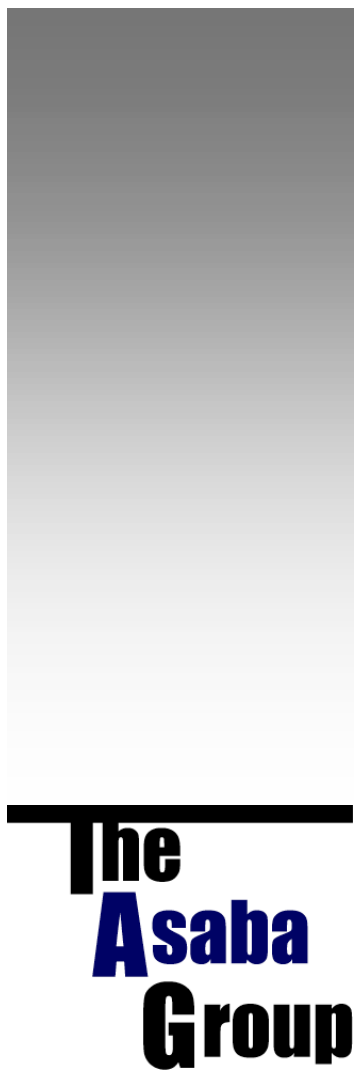
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## **Project Charter**

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**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**

# Project Approach

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## **Executive Summary**

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### **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

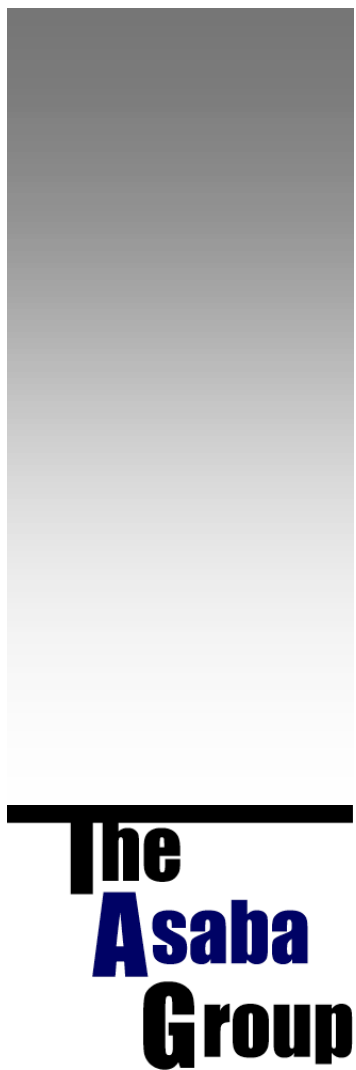
### **New electricity infrastructure build-out occurring and will provide opportunities for Minority Business growth**

- 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



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# Key Industry Trends

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## **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

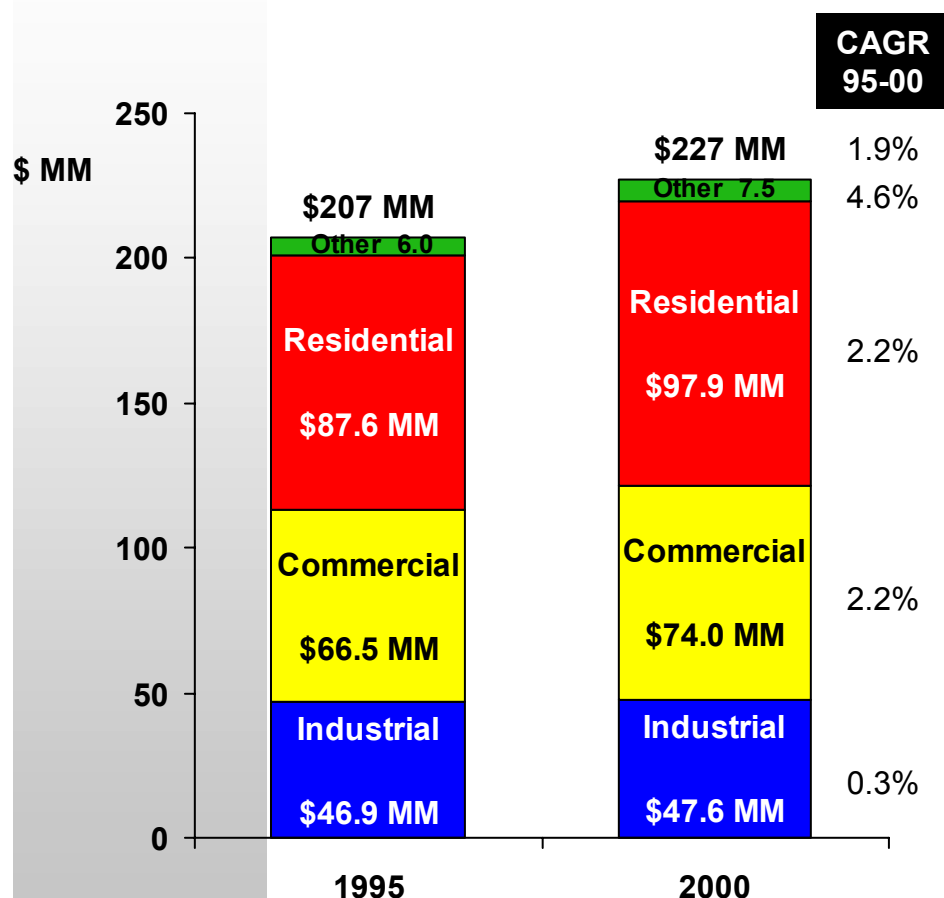
## **Significant uncertainties still abound in the industry**

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

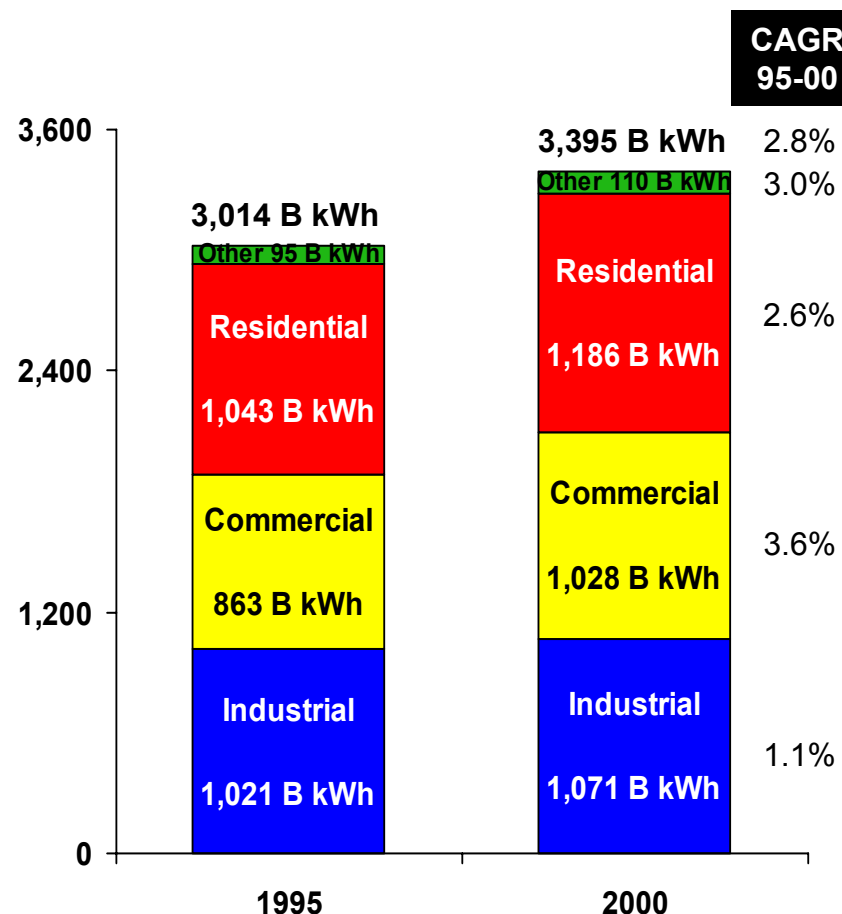
# Electric Energy Industry Has Seen Modest Growth During Last Five Years

Residential And Commercial Segments Have Driven Industry Growth

**Electricity Revenues (\$ MM)**



**Electricity Consumption (B kWh)**

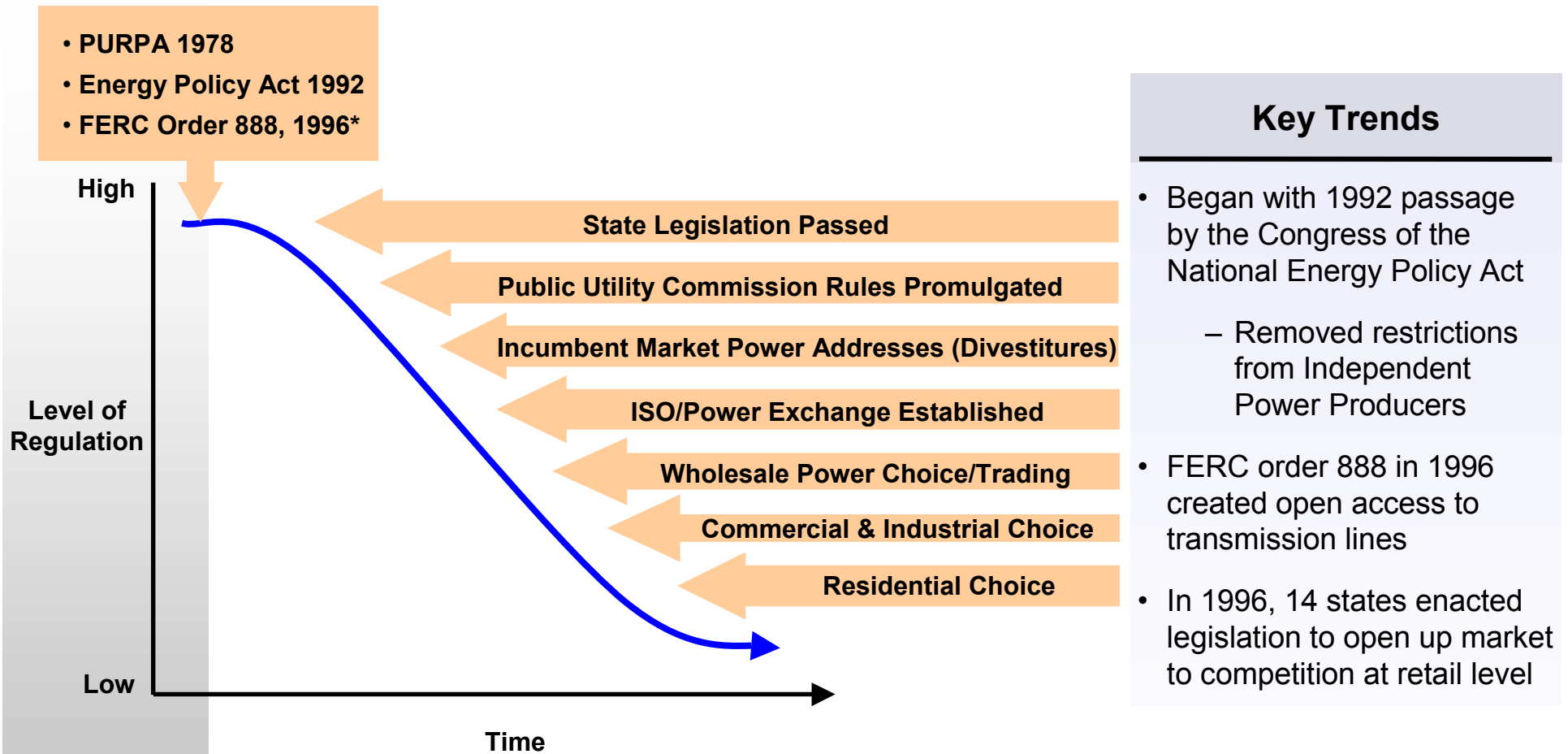


Other: Street lights, railways, public transport

SOURCE: Energy Information Administration, Edison Electric Institute

# Typical Path Towards Deregulation And Industry Restructuring

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**Goal Is To Drive For Increased Competition**

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

SOURCE: Energy Information Administration, Data as of 4/2001

- Arizona
- Arkansas
- California
- Connecticut
- Delaware
- Illinois
- Maine
- Maryland
- Massachusetts
- Michigan
- Montana
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Rhode Island
- Texas
- Virginia
- West Virginia
- District of Columbia

# Deregulation Driving Competition In The Value Chain

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## Before



### 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**

## Future

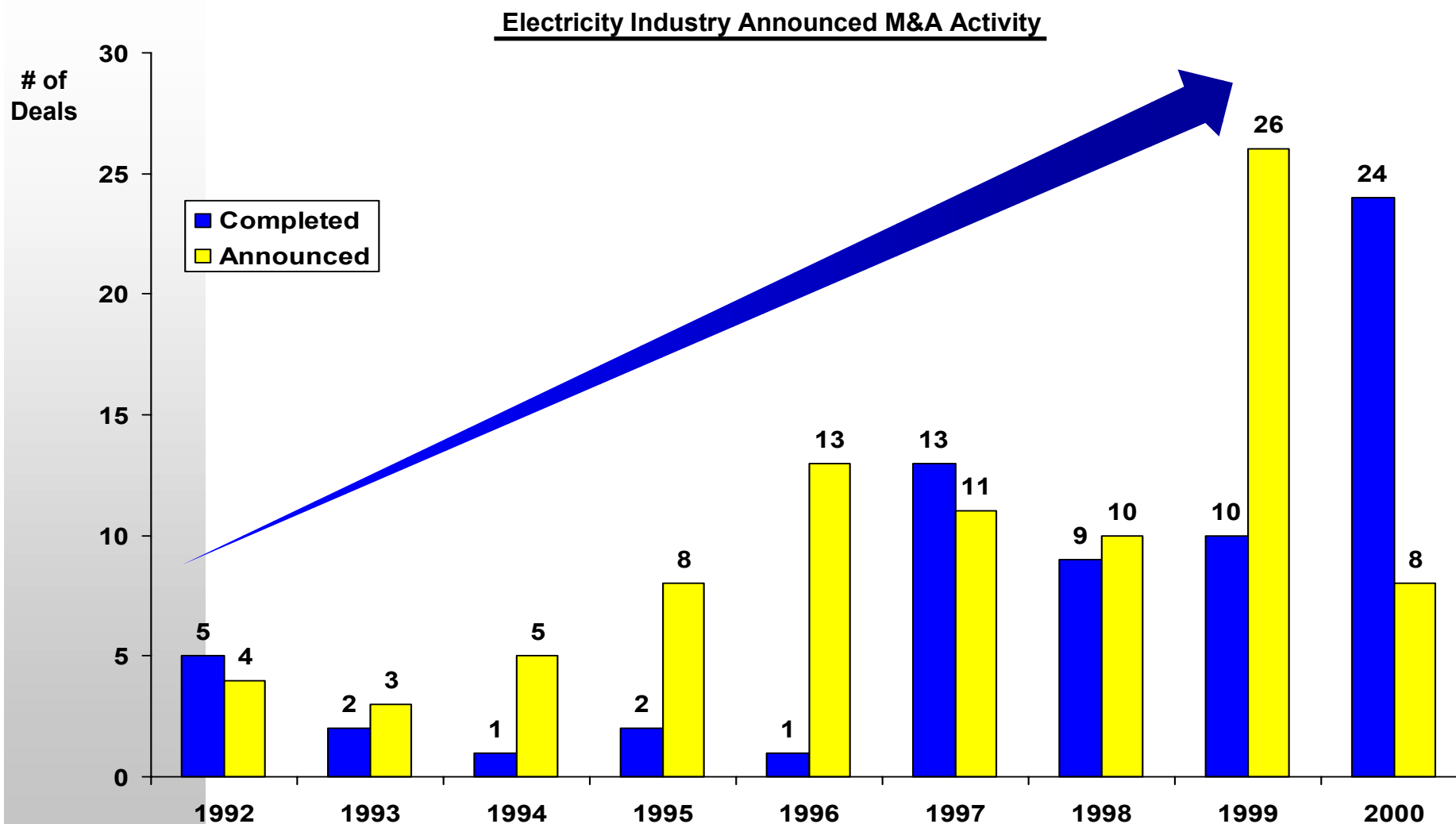


### Deregulated Value Chain

- **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**

# Deregulation Has Accelerated M&A Activities Within The Industry



SOURCE: Edison Electric Institute, Asaba Group Analysis

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

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## **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

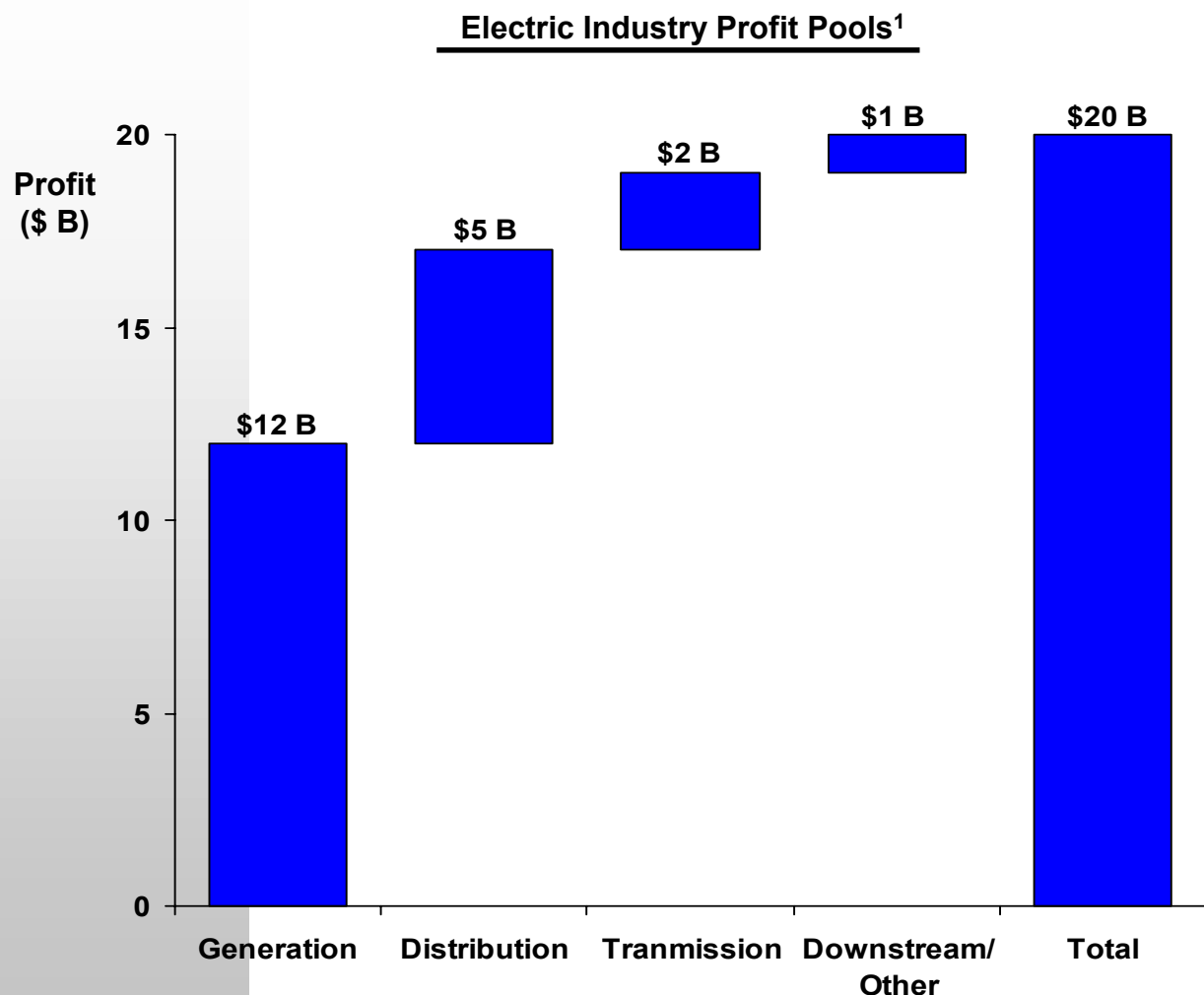
## **Mergers**

- 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

# Industry Restructuring Is Reconfiguring Historical “Profit Pools”



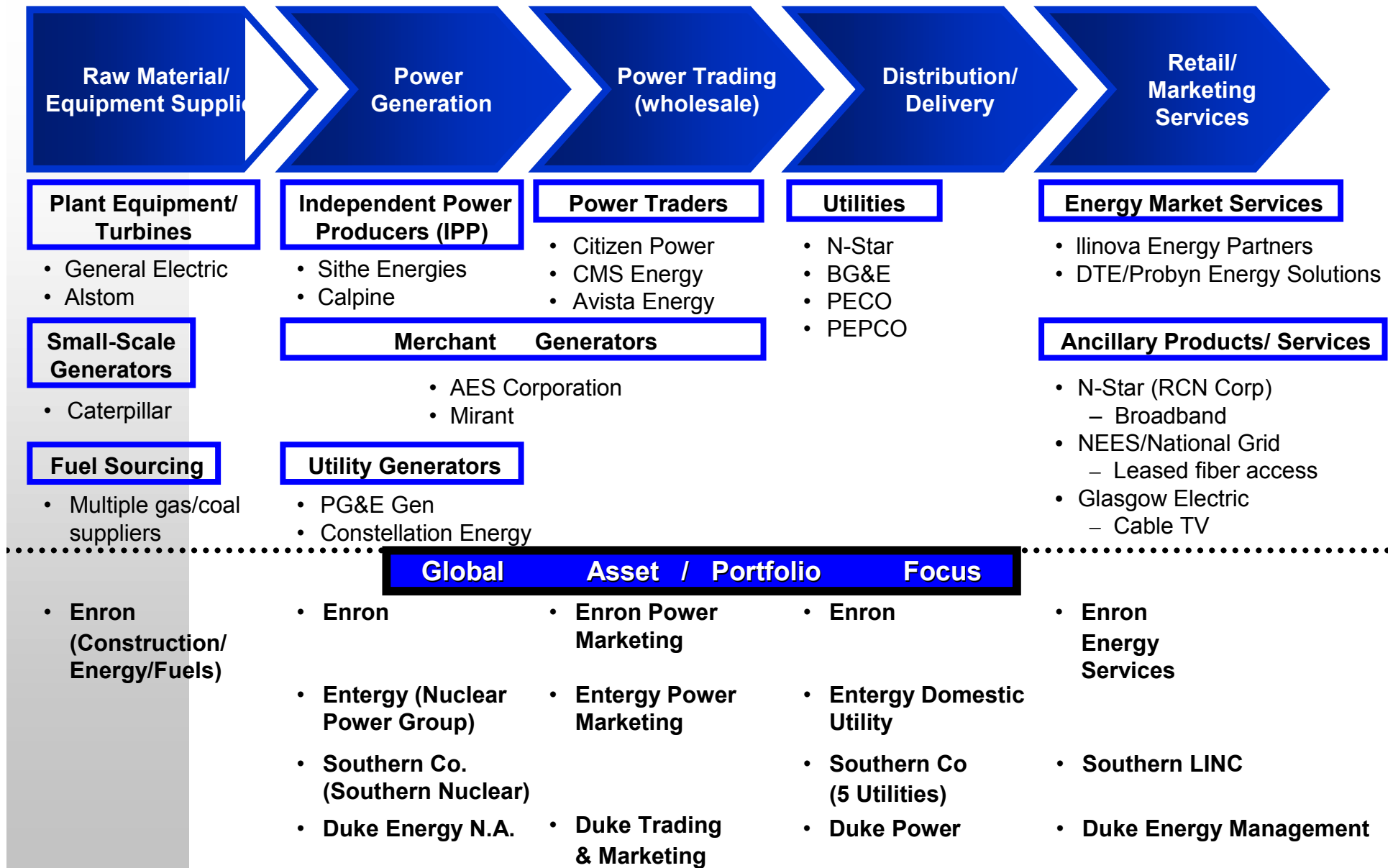
- Industry players are moving to a more focused strategy to improve competitiveness
- New entrants with focus and specialized skills
- Telecommunications Industry provides the following insights
  - Revenue mix shift from mature and asset-intensive to high margin growth segments
  - Strongest profit growth occurs in new products and services

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



# Emerging Electric Energy Value Chain Resulting From Deregulation

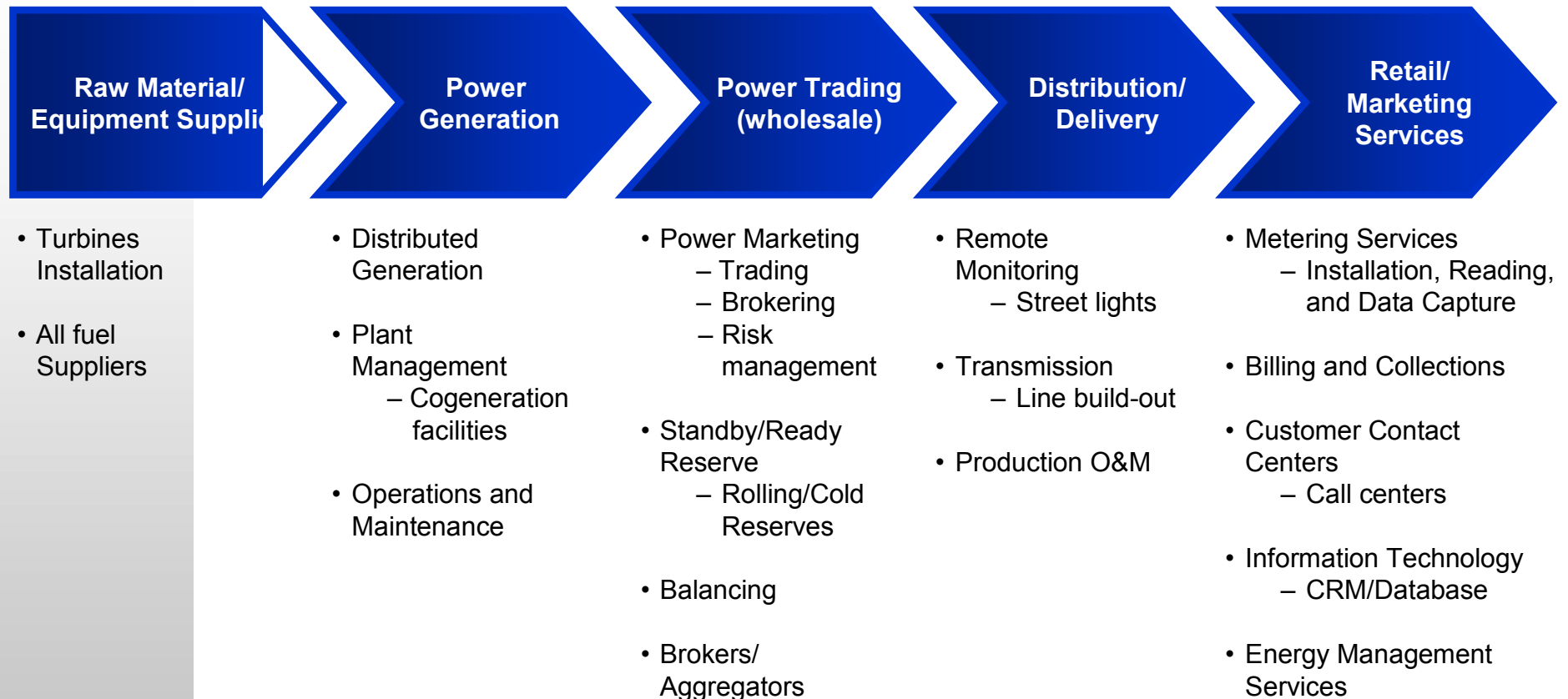
Including Focused And Specialized Competitors



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

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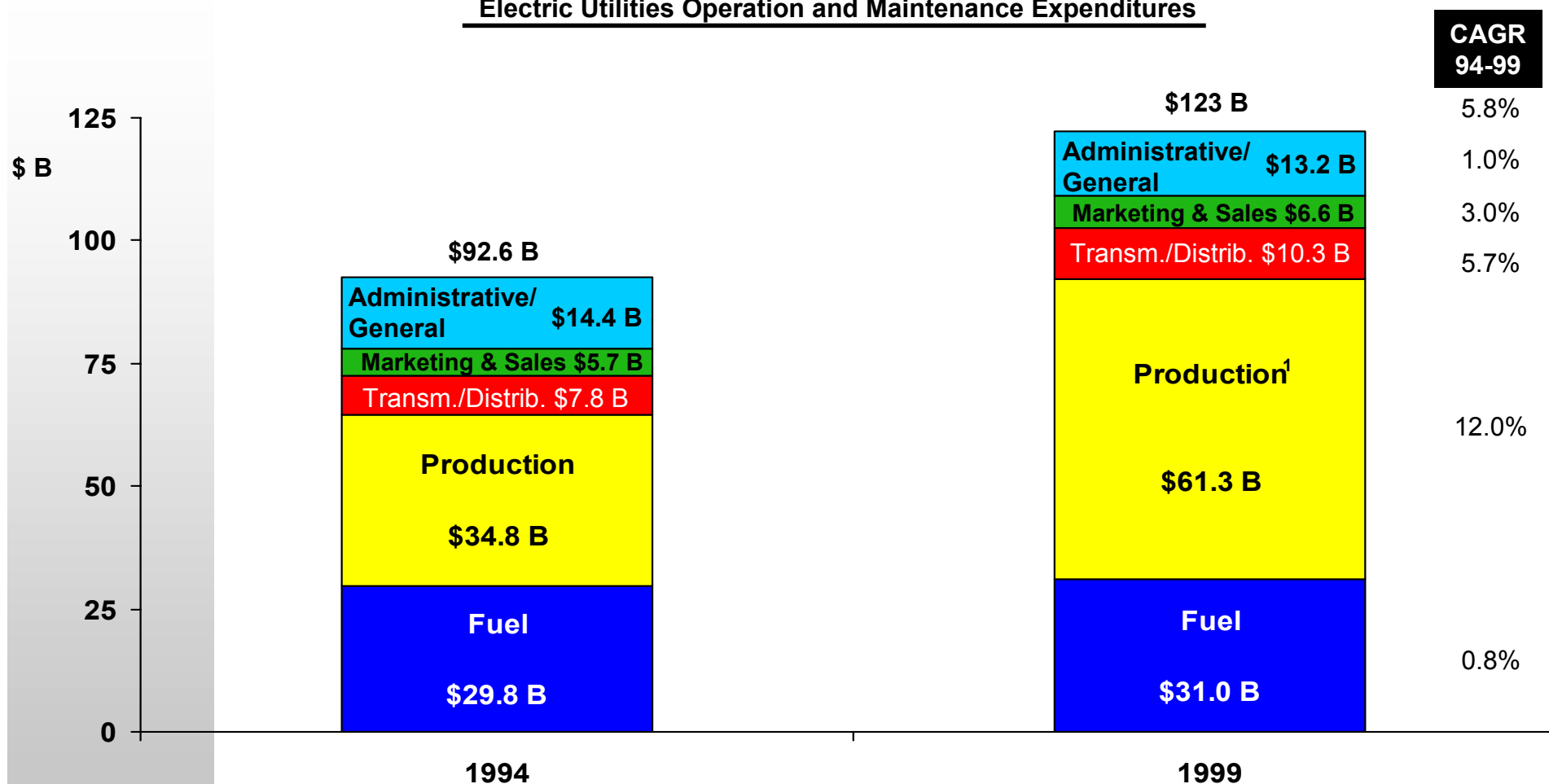
## Opportunities In all areas of the value chain



**Significant Opportunities For Minority-Owned Businesses**

# Industry Operations and Maintenance Expenditures Provide Some Insights On Size Of Opportunity Dollars

## Electric Utilities Operation and Maintenance Expenditures

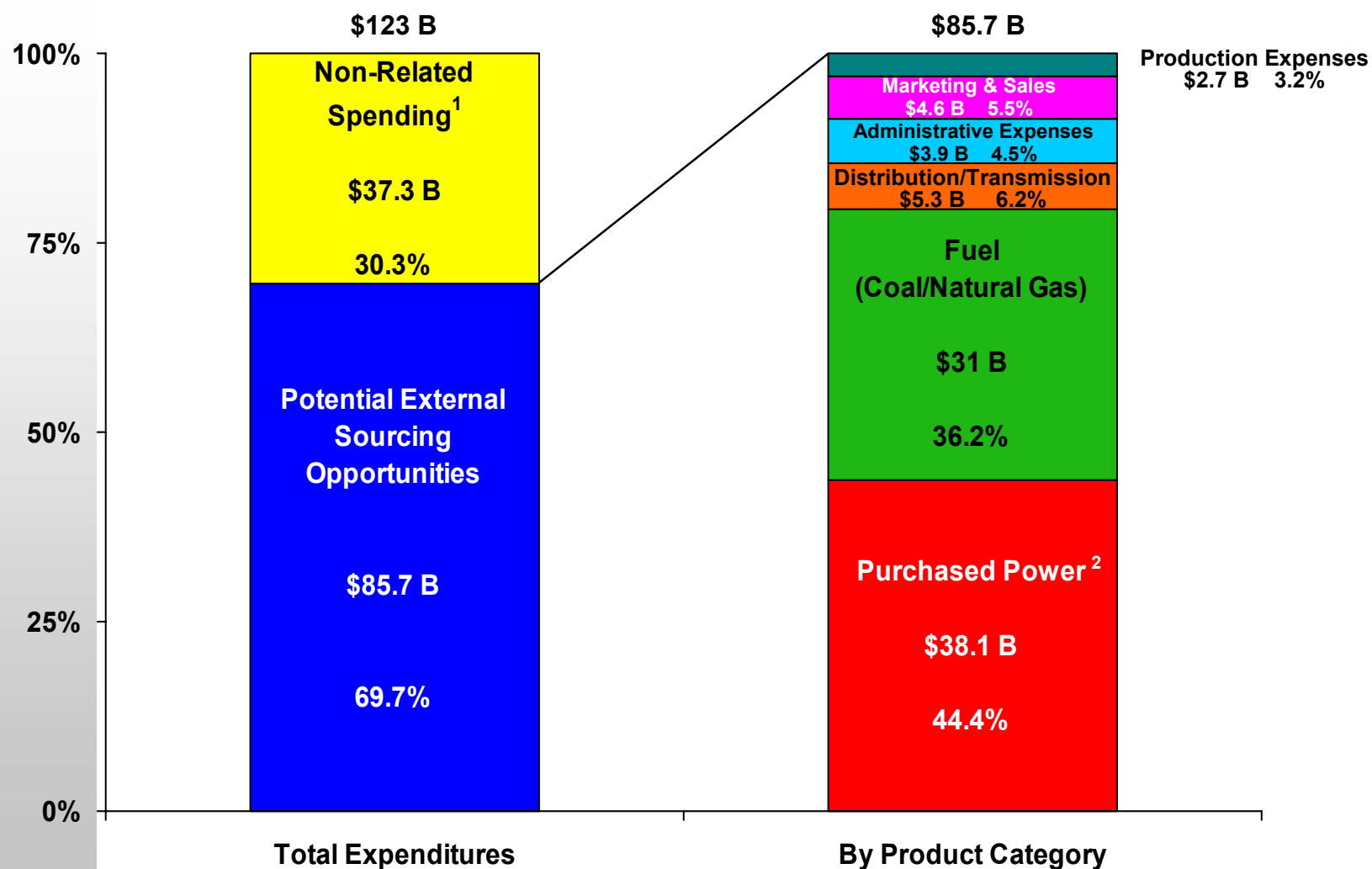


**Expect Industry Restructuring To Change Mix of Total Expenditures**

1. Reflects costs associated with Environment-related upgrades

SOURCE: Center for Advanced Purchasing Studies, Asaba Group Analysis, Edison Electric Institute Yearbook

# \$86 Billion Worth Of Sourcing Opportunities Exists For Minority Businesses



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

# Identified Minority Business Opportunities In Energy And Utilities Industry

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**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**

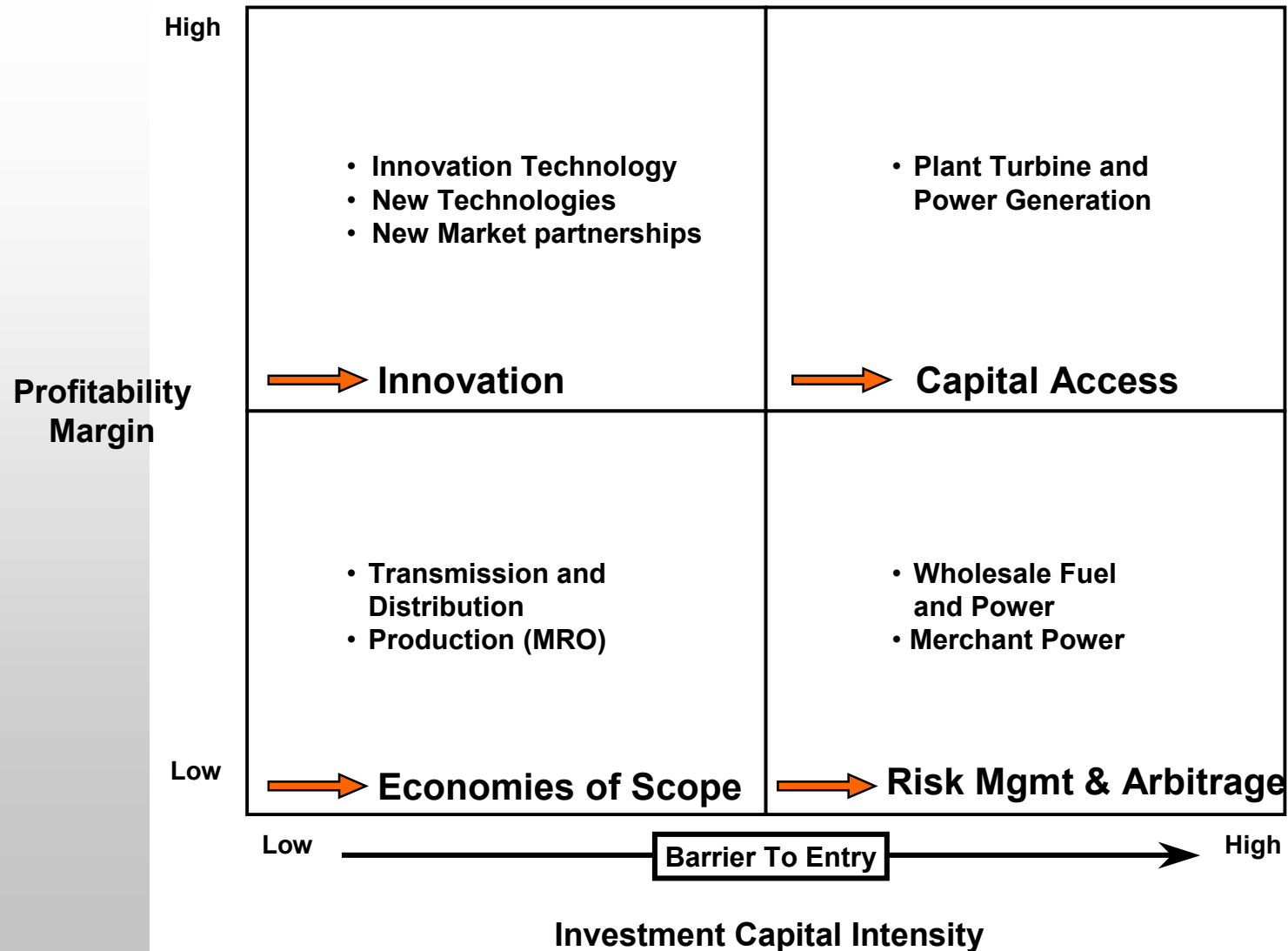
**Emerging  
Technologies**

**New Market  
Partnerships**

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

# Different Strategic Focus Required To Extract Value From Identified Opportunities

Defined By The Key Drivers Of Profitability



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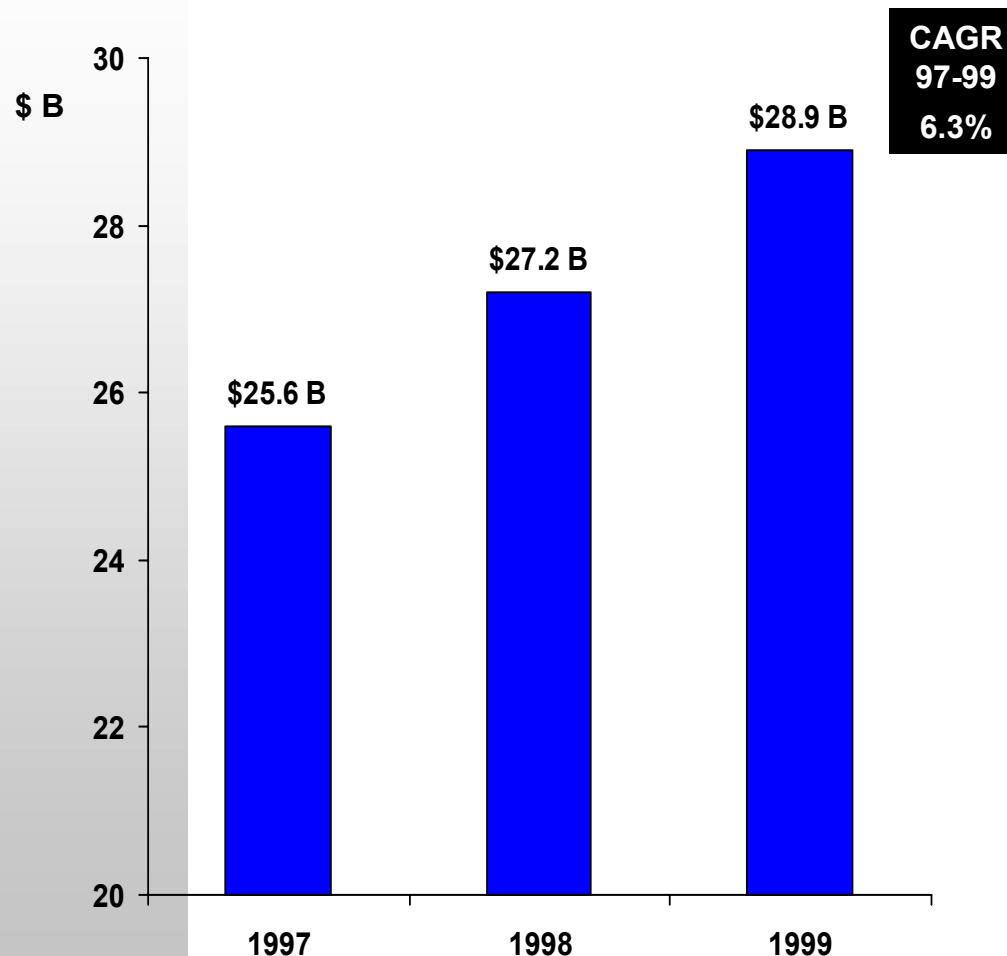
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# Growth In Construction Capital Expenditures For New Plants Provides Attractive Opportunities

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## Construction Capital Expenditures



## Future Spending Drivers

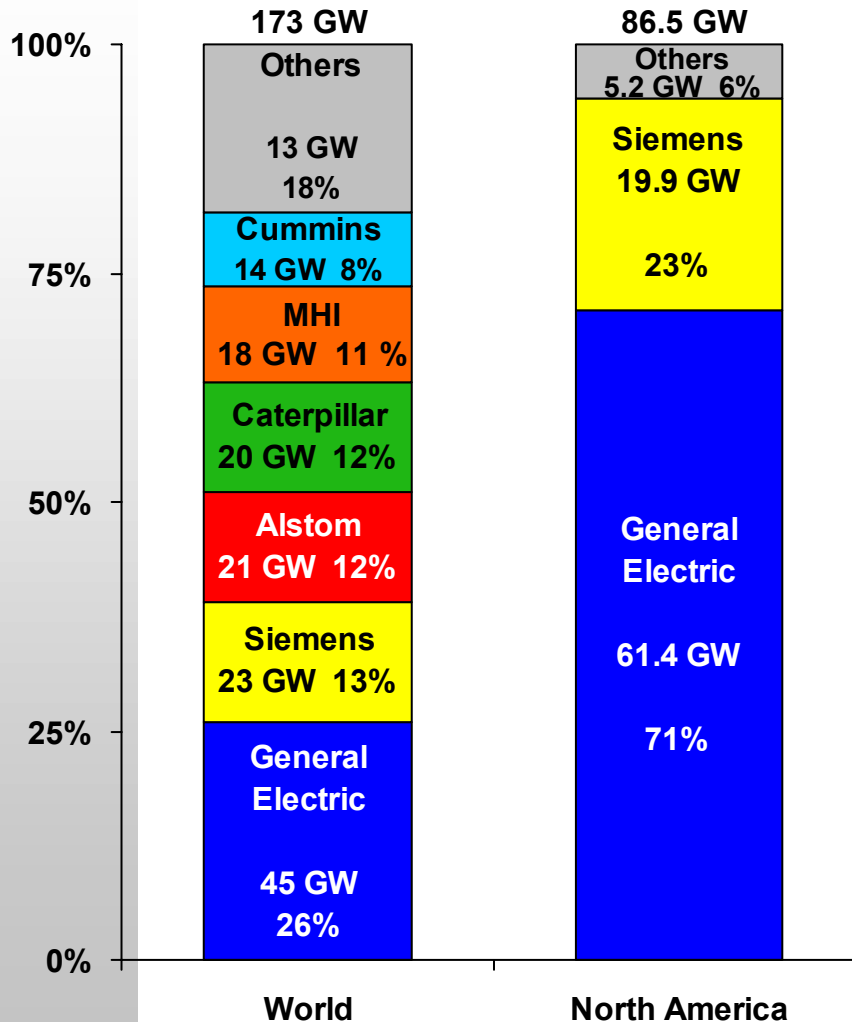
- New plants construction to increase supply
  - Estimated range from 1,300 to 1,900 new power plants over next 20 years
- Distribution and transmission build-up
  - Estimated 38,000 miles of new pipes
  - Expansion of transmission grid
- Energy efficiency standard
  - Drive plant equipment upgrades



# Power Plant Turbines Are A Significant Share Of These Expenditures

A \$40 Billion Market Worldwide

## Worldwide Power Plant Orders



## 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

# Generation Capacity Margins Have Declined From Historical Levels (Approximately 25%)

## U.S. Capacity Margin Analysis

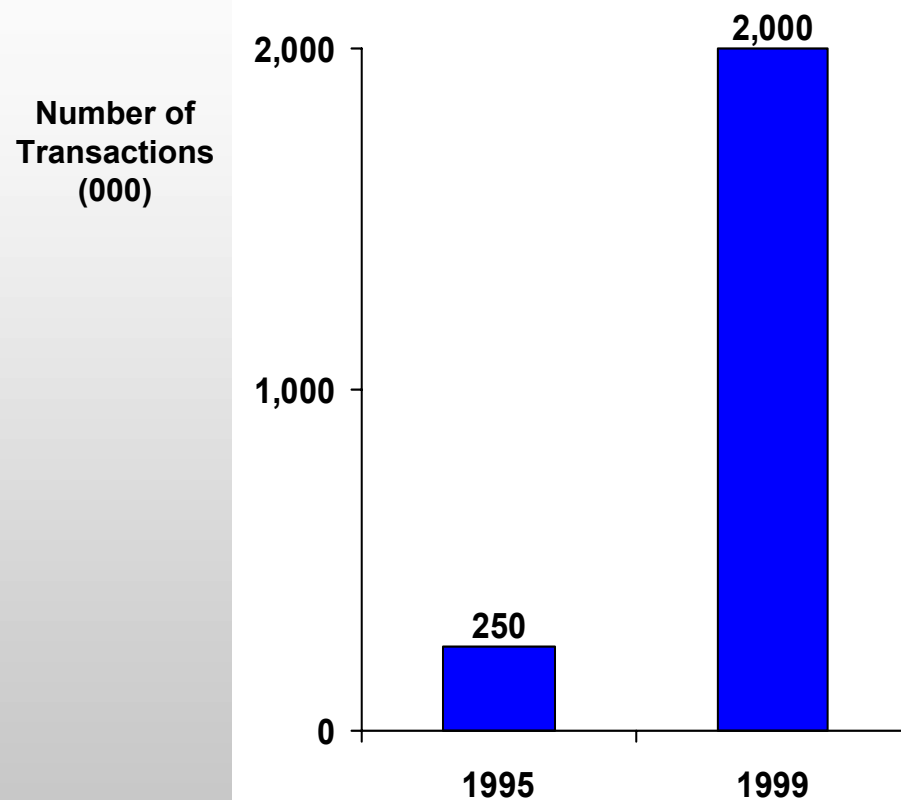
	<u>Electricity Demand (GW)</u>	<u>Electricity Generation (GW)</u>	<u>Capacity Margin</u>
Eastern Grid	501.4	582.2	13.9%
Texas Grid	53.4	69.8	23.4%
Western Grid	114.8	141.1	18.6%
U.S. Total	669.6	793.1	15.6%

**Has Led To Increased “Wheeling” Of Power Across Regions**

# Cross Regional Transmission Transactions Have Increased Significantly

Transmission Capacity Becoming A Scarce Resource

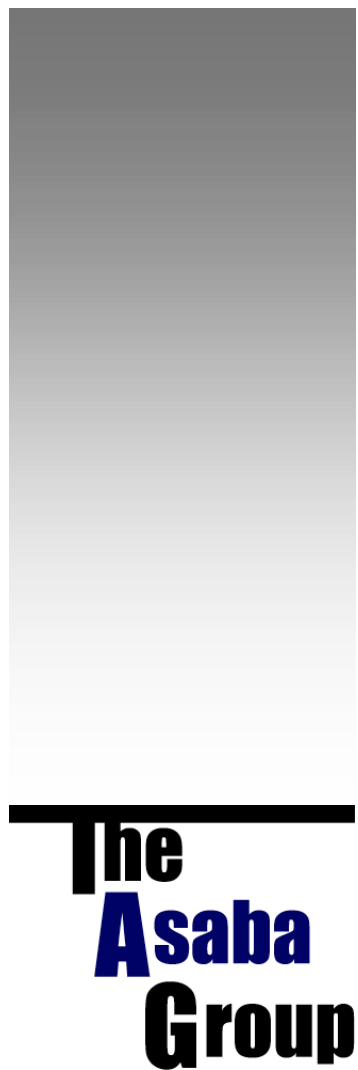
## Cross-Regional Transmissions



## 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**



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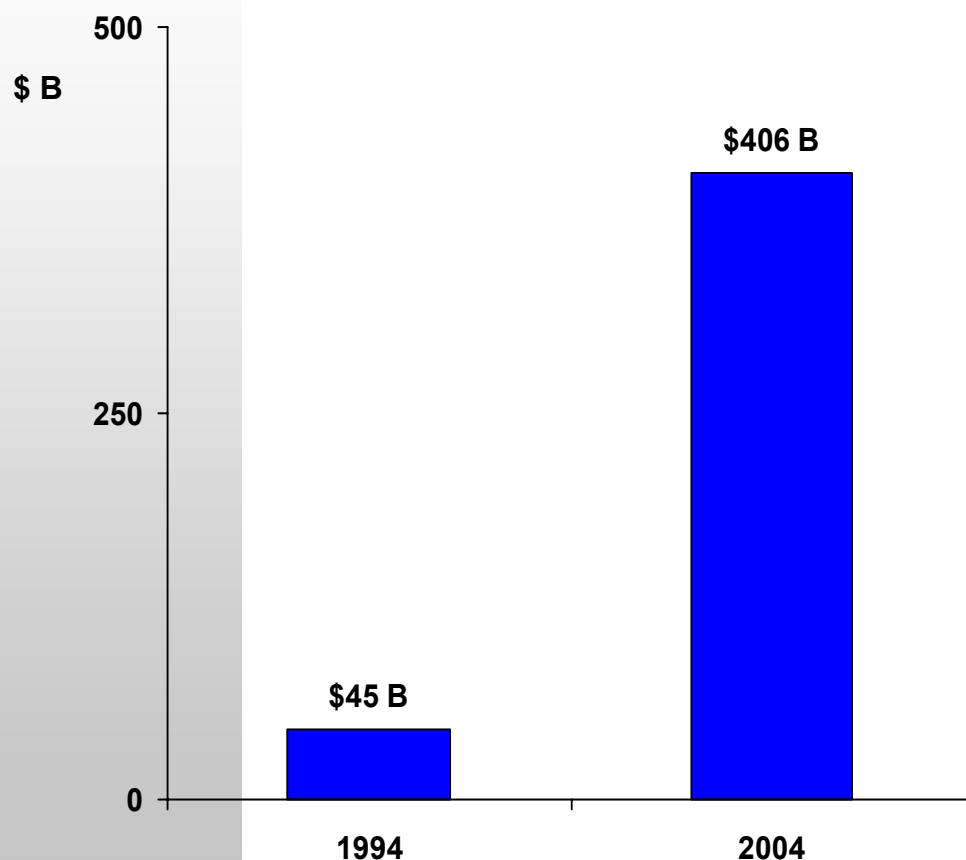
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# Wholesale Power Marketing Experiencing Strong Growth

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**Wholesale Power Marketing  
Revenue Forecast**



SOURCE: Frost and Sullivan

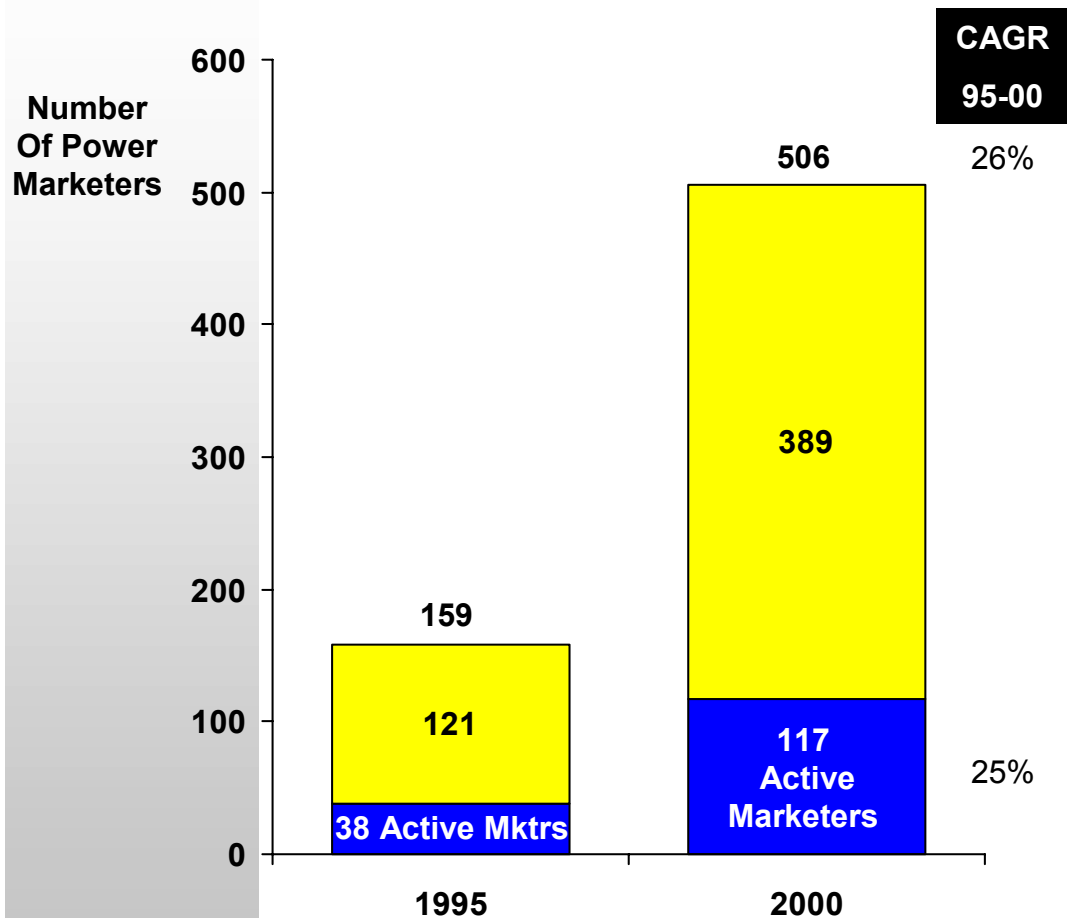
## Key Trends

- 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

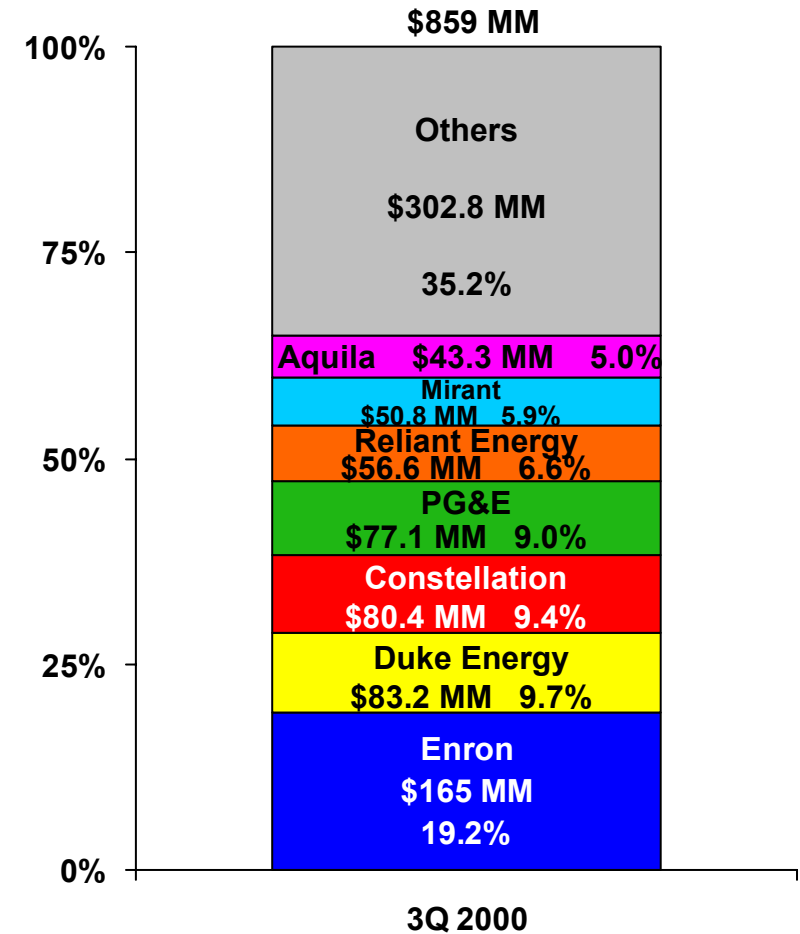
# Growth Has Attracted A Lot of New Entrants, But Becoming Concentrated

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Number of Registered Power Marketers



Top Power Marketers Share



**Size Critical To Success In Power Marketing**

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

# Why Scale Is Necessary To Be Successful In Power Marketing

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## 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

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**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**

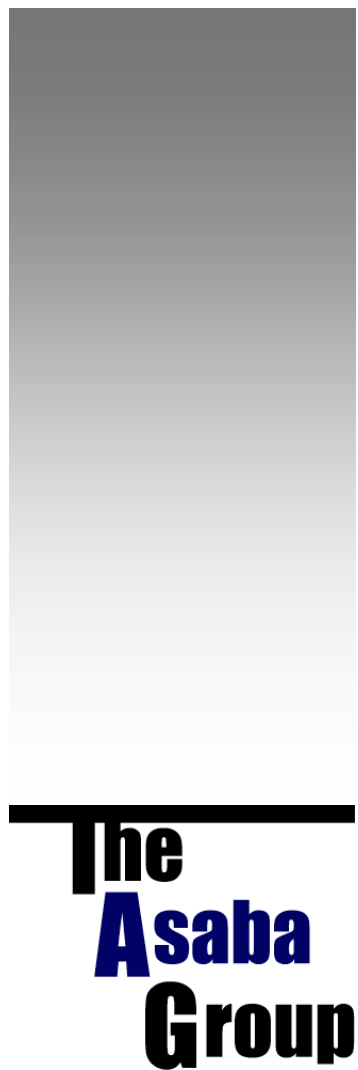
- Critical in gaining scale and leveraging trading expertise

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

- Focused services that are value-added to customers

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





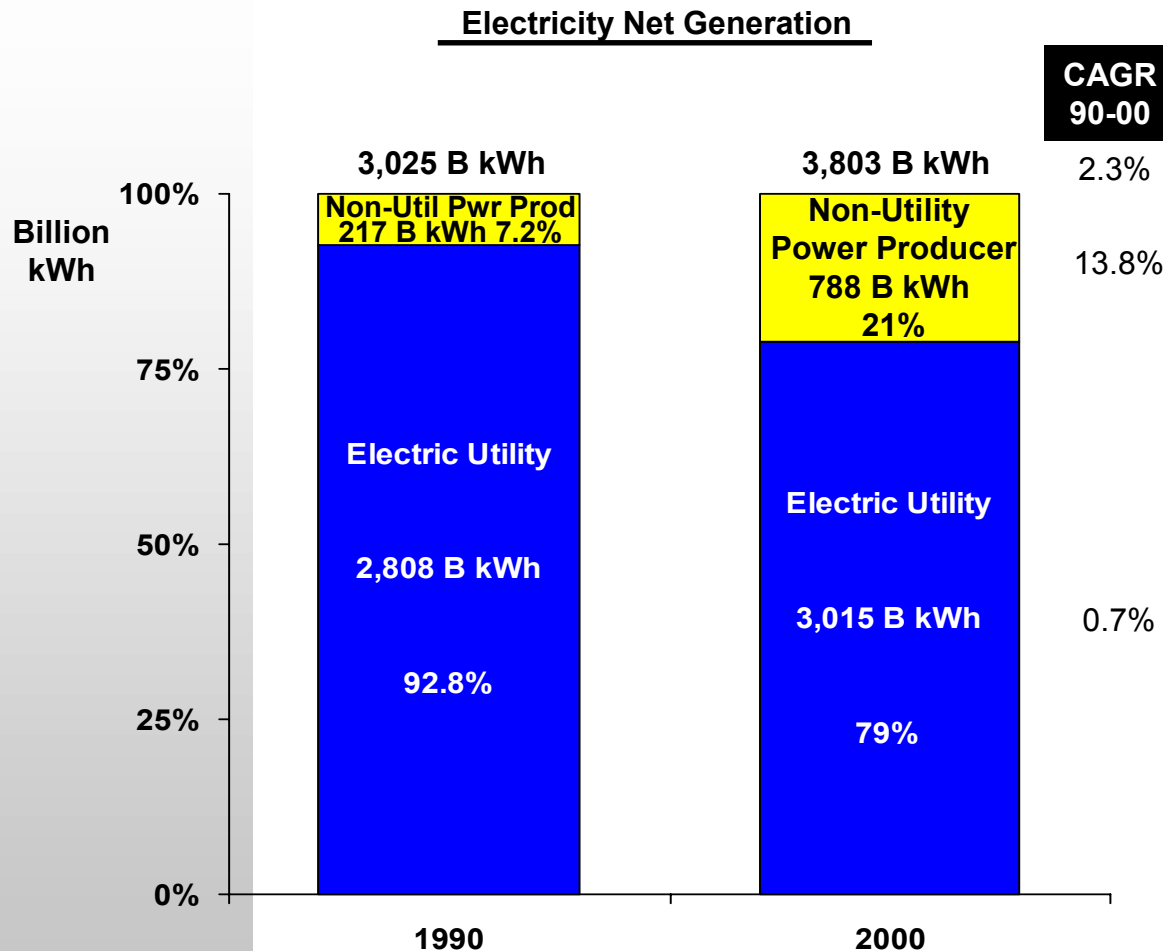
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# Non-Utility Power Producers Have Grown Presence In Generation

Largely A Function Of Electric Utilities' Divestitures



## Trends

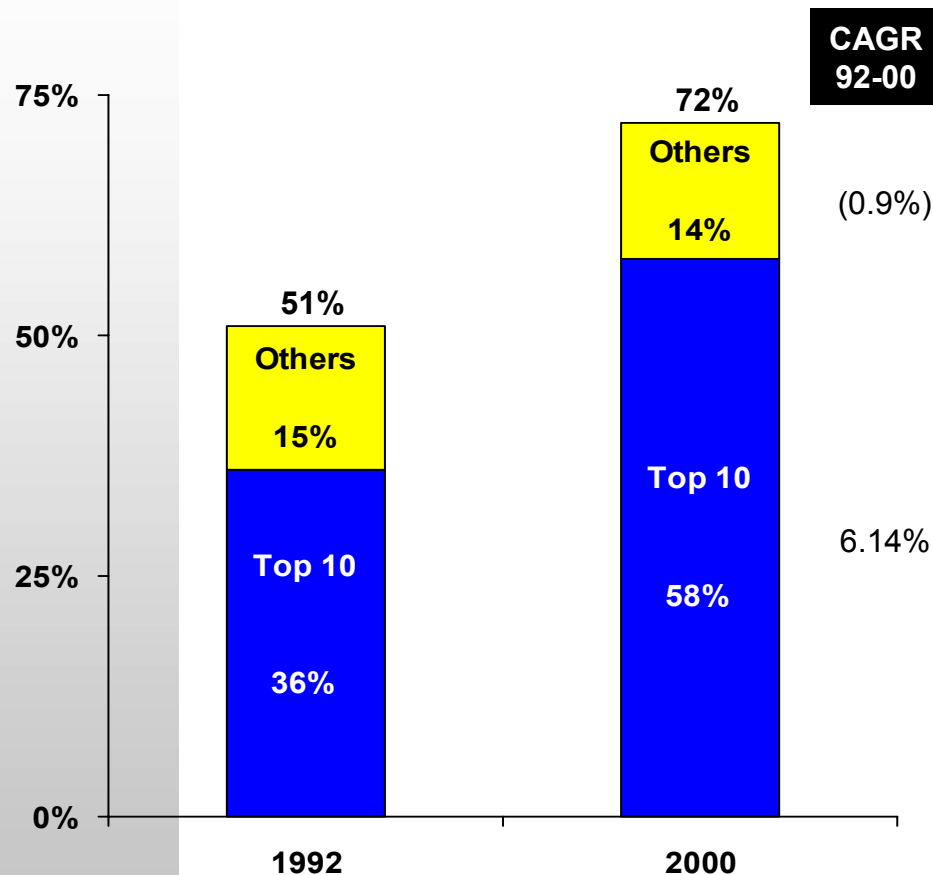
- Non-Utility Independent Power Producers (IPP) expected to outpace utility construction 3 to 1 through 2003
  - IPP's to add 61,456 MW
  - Utilities to add 23,957 MW
- Most of the additions are expected to be gas-fired
- Transmission bottlenecks and plant site location constraints favor distributed generation

**Emerging New Segment Of Merchant Power Producers**

# Consolidation Trend Also Occurring Among Power Generation Players

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IOUs' Power Generators' Capacity Share (Top 20)



## Top Players In Power Generation

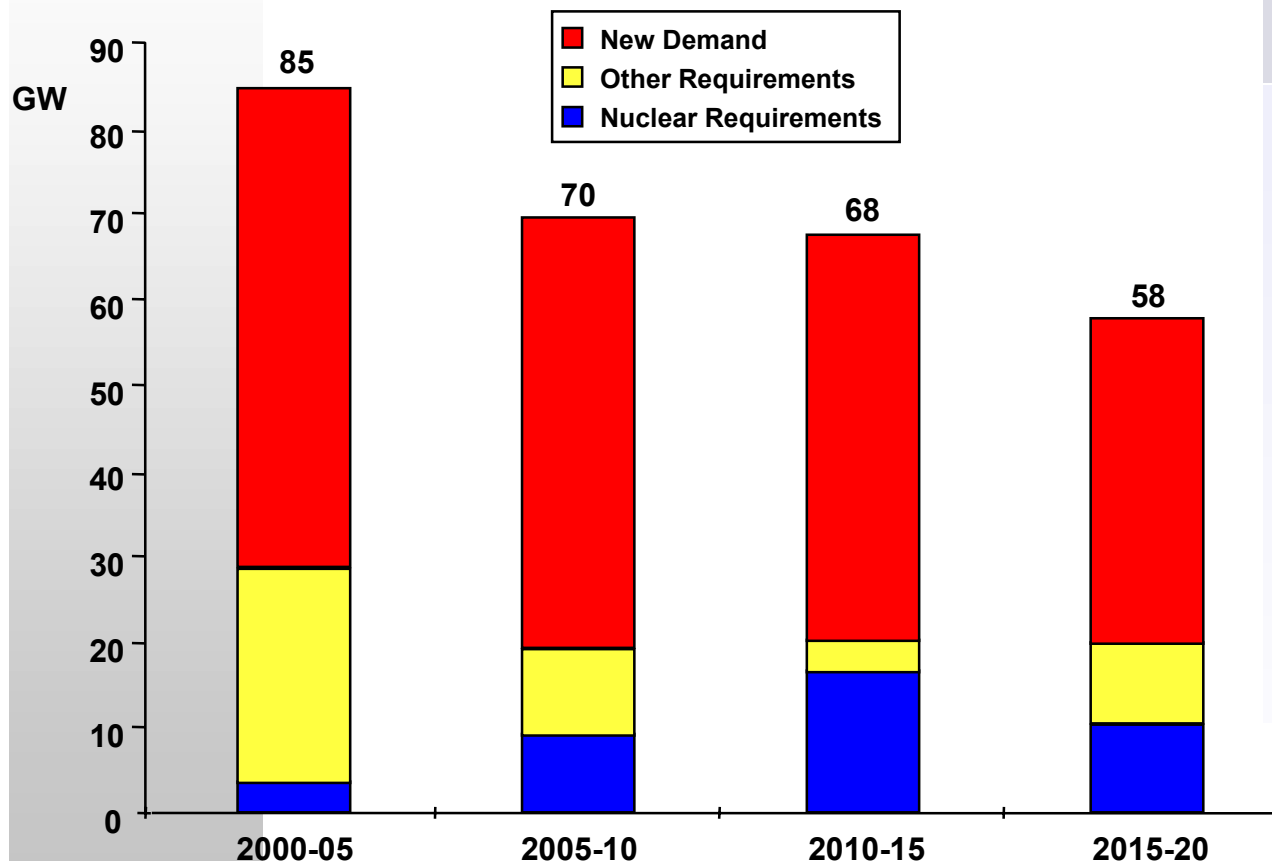
- AES Corporation
- Mirant
- Calpine
- Sithe Energies
- NRG Energy
- Enron
- Reliant
- PG&E Generation
- Duke Energy
- Dynegy
- FPL Energy
- Entergy
- Dominion Energy

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

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

35

Potential US Generation Capacity Requirements  
 (Gigawatts)



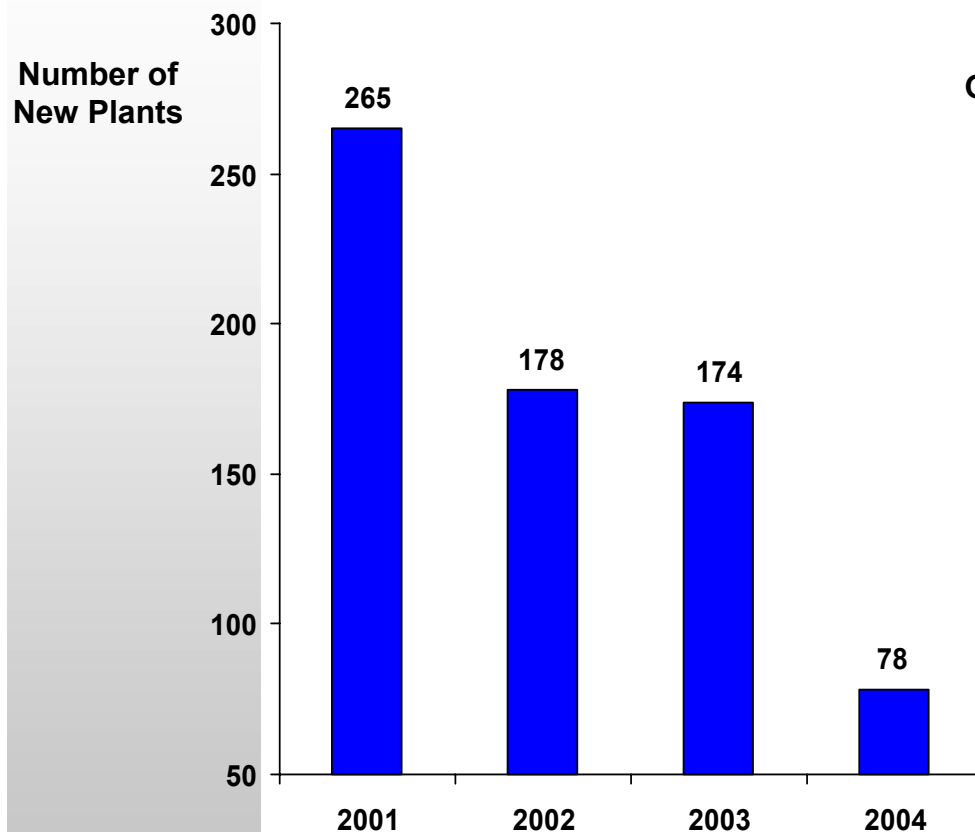
## Key Trends

- North America will require 200,000 MW over the next 12 years
  - 85,000 MW in next 5 years
  - Potentially 250,000 MW in 20 years
- Retirement of 40 GW of nuclear capacity expected
- Expect IPP to capture significant share of opportunities

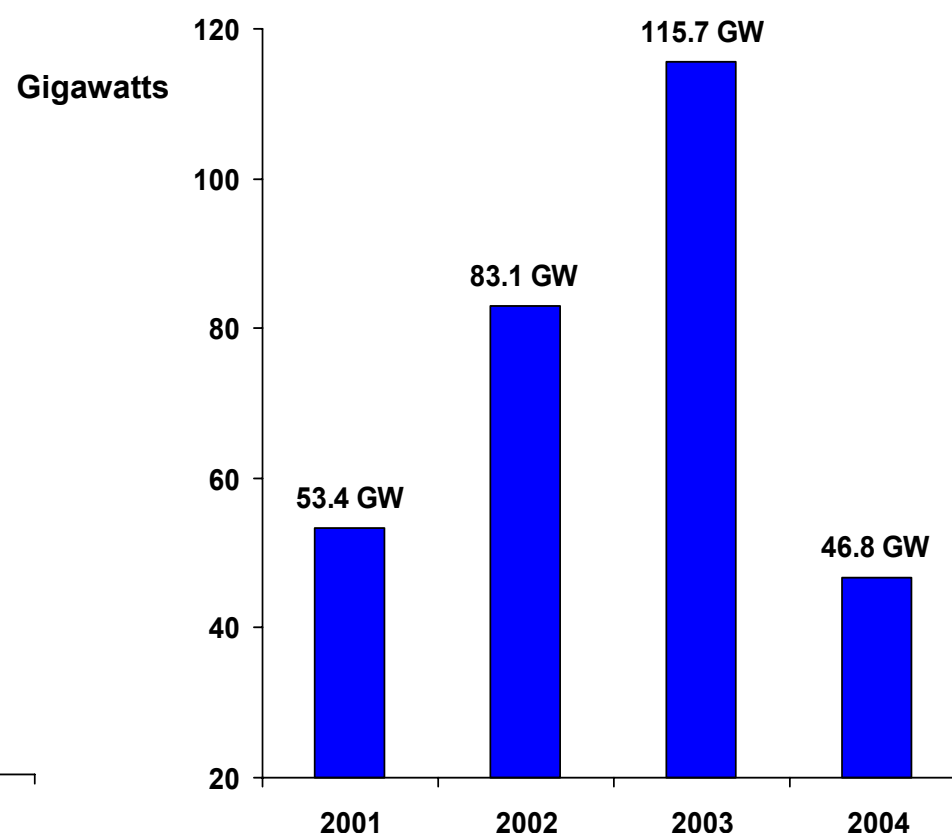
# Most Planned Capacity Addition Through 2004

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Projected Number of New Power Plants



Projected Capacity Additions

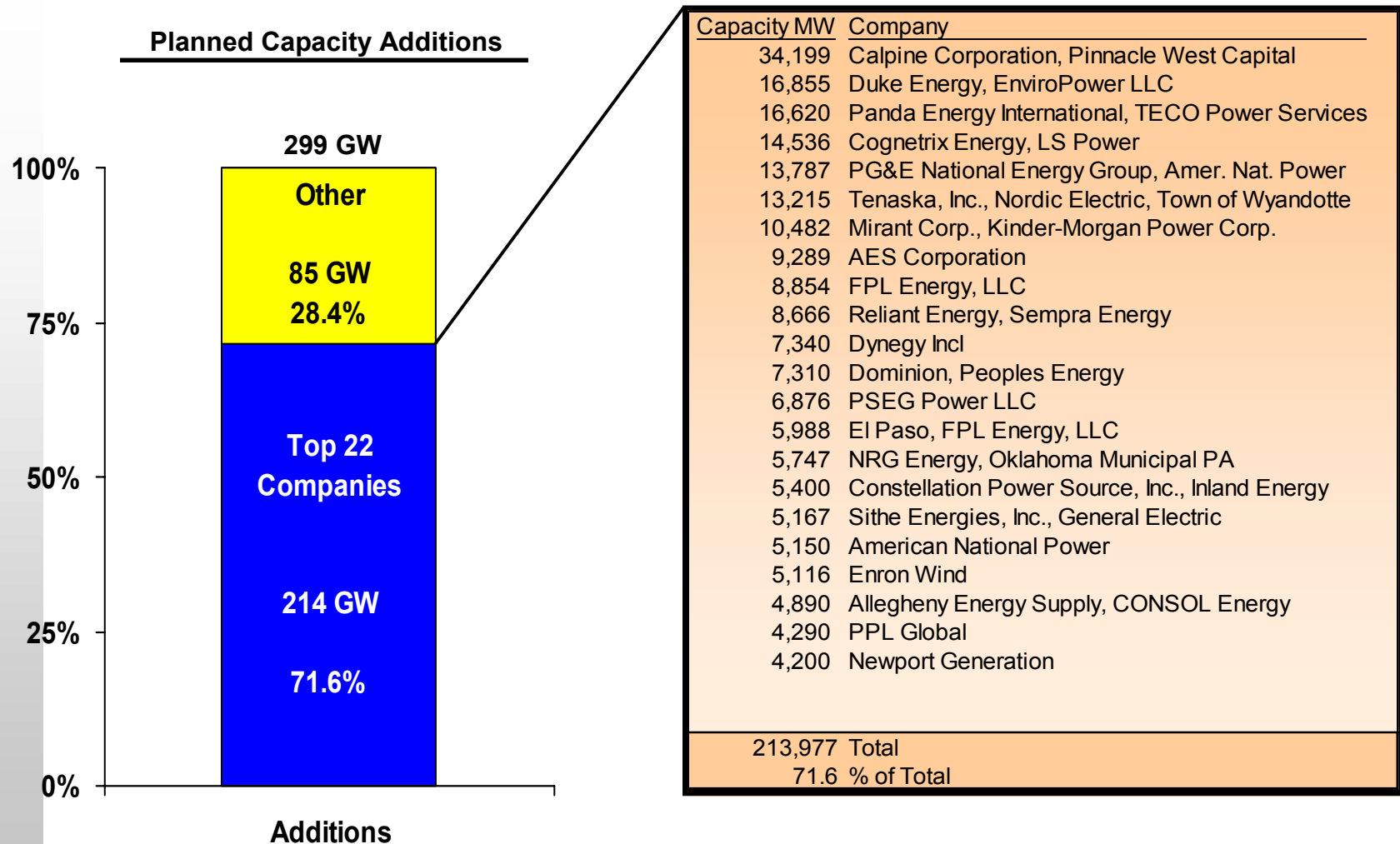


**Minority Businesses Need To Move Quickly To Capture Opportunities**

SOURCE: McCoy Power Reports, RDI, New York Times

# Twenty-Two Companies Account For 72% Of Planned Capacity Additions

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

# **Power Plant Generation Planning Is Somewhat Speculative**

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## **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

# **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)**

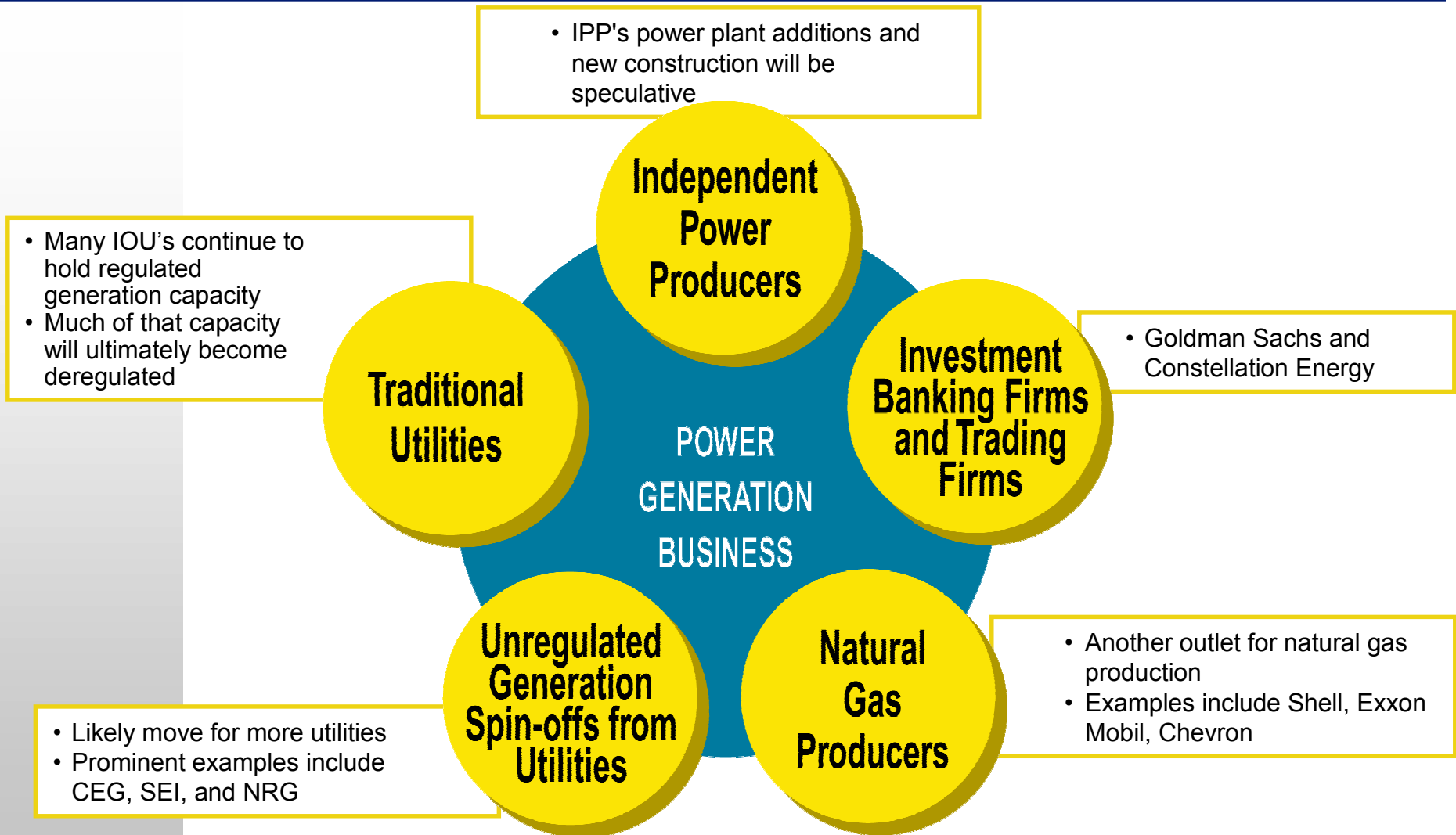
- power cells that use solar energy to produce power
- sited anywhere
- environmentally friendly

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

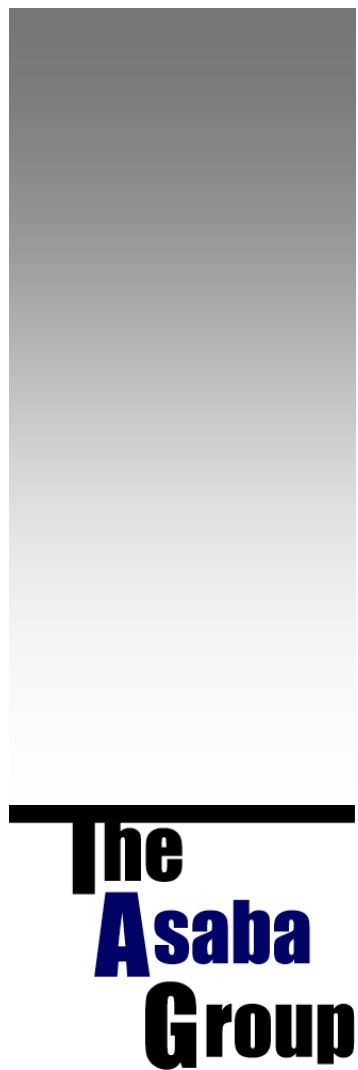


# A Broad Range Of Companies Are Looking For A Piece Of The Merchant Power Market

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**View As Potential Field For Strategic Alliances**



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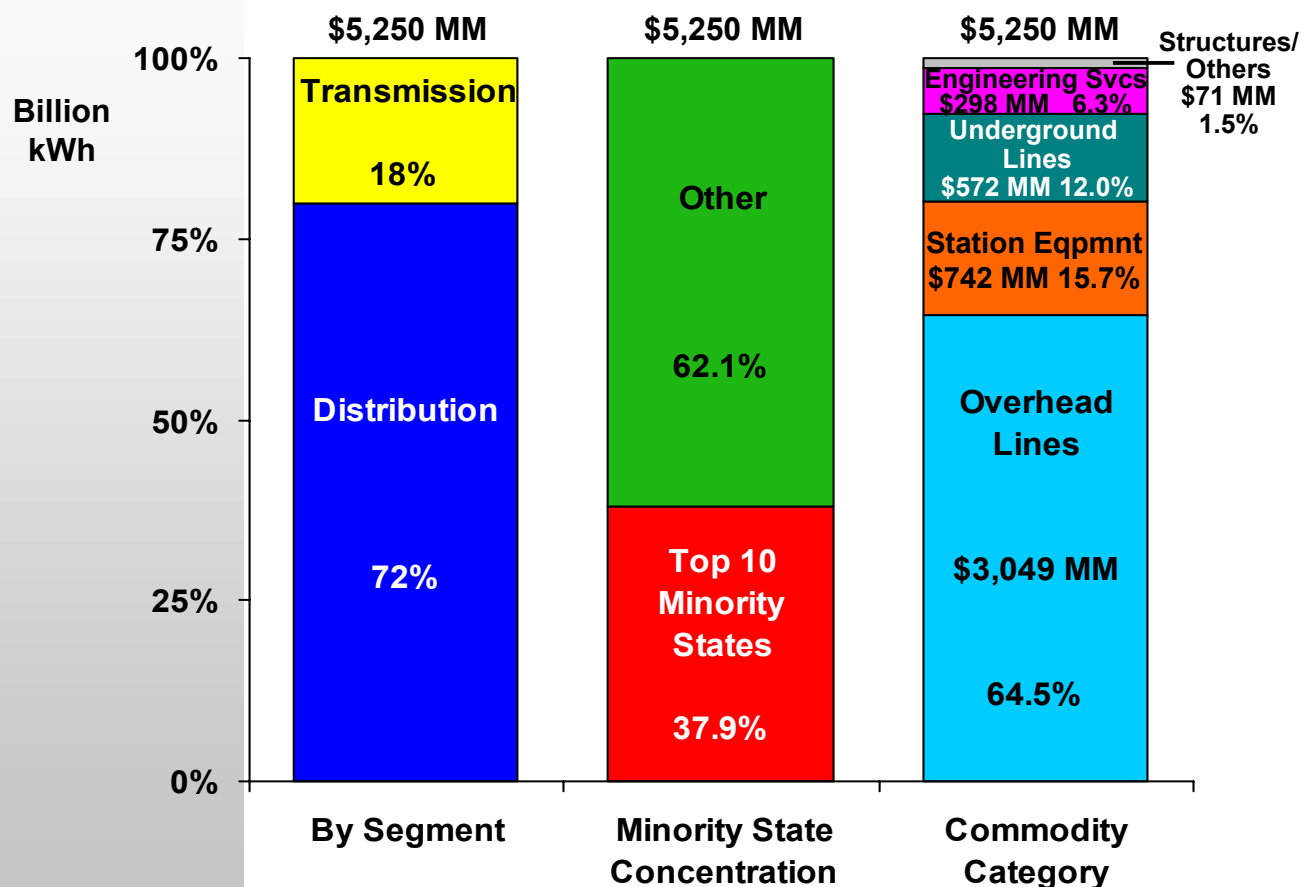
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# Estimated \$5.2 Billion Spent Nationally On Transmission and Distribution Maintenance Expenditures

72% Spent On Power Distribution-Related Expenditures

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



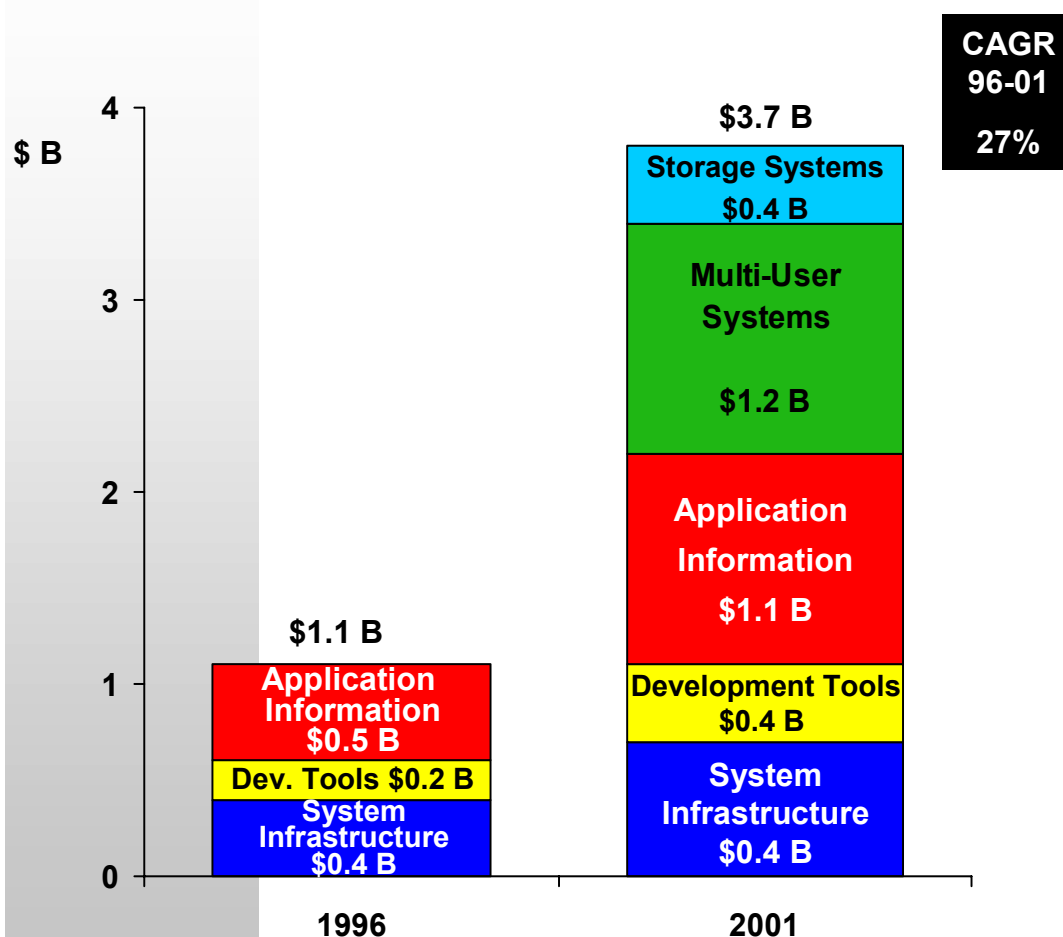
## Potential Opportunities/ Categories

- 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

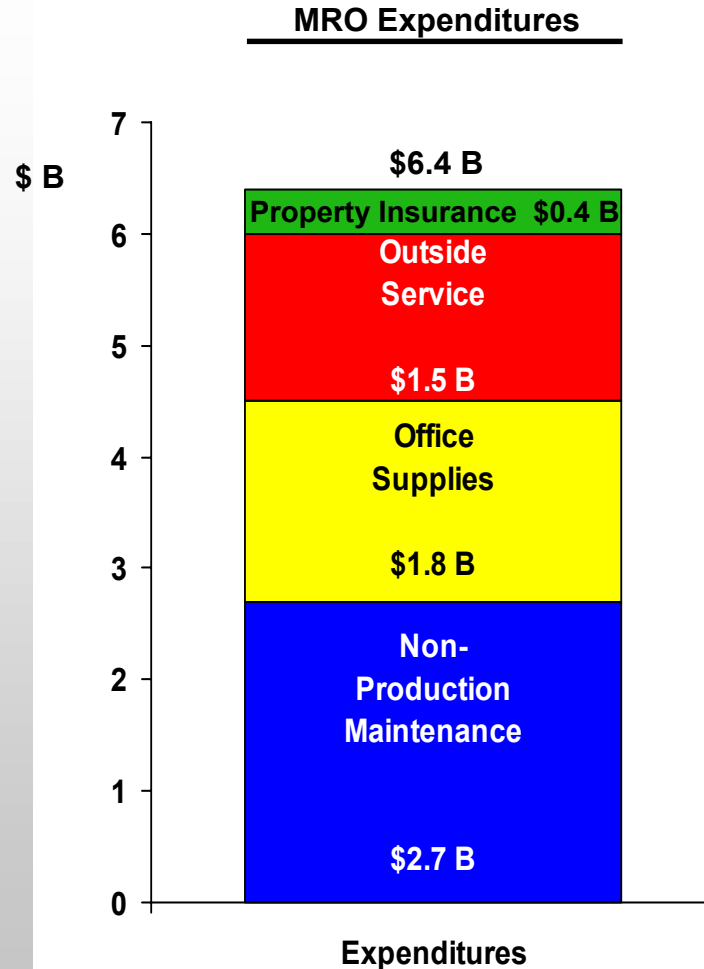


## Key Trends

- 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

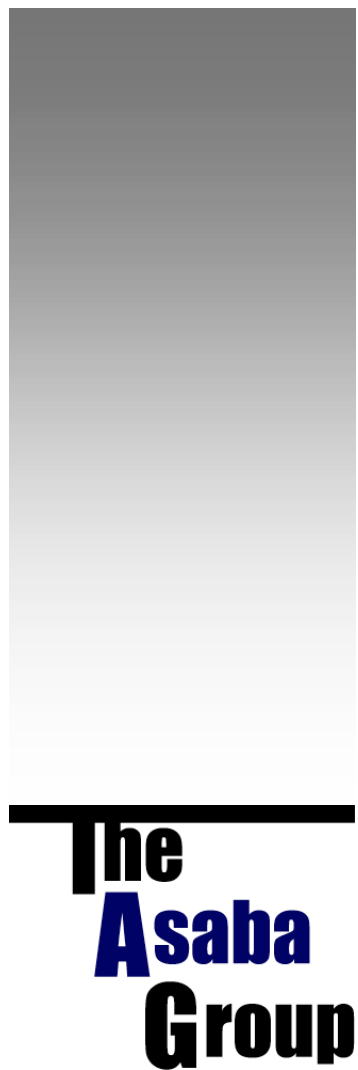
# Non-Production MRO (Maintenance, Repair, and Operations) Expenses Is A \$6.4 Billion Opportunity

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## 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



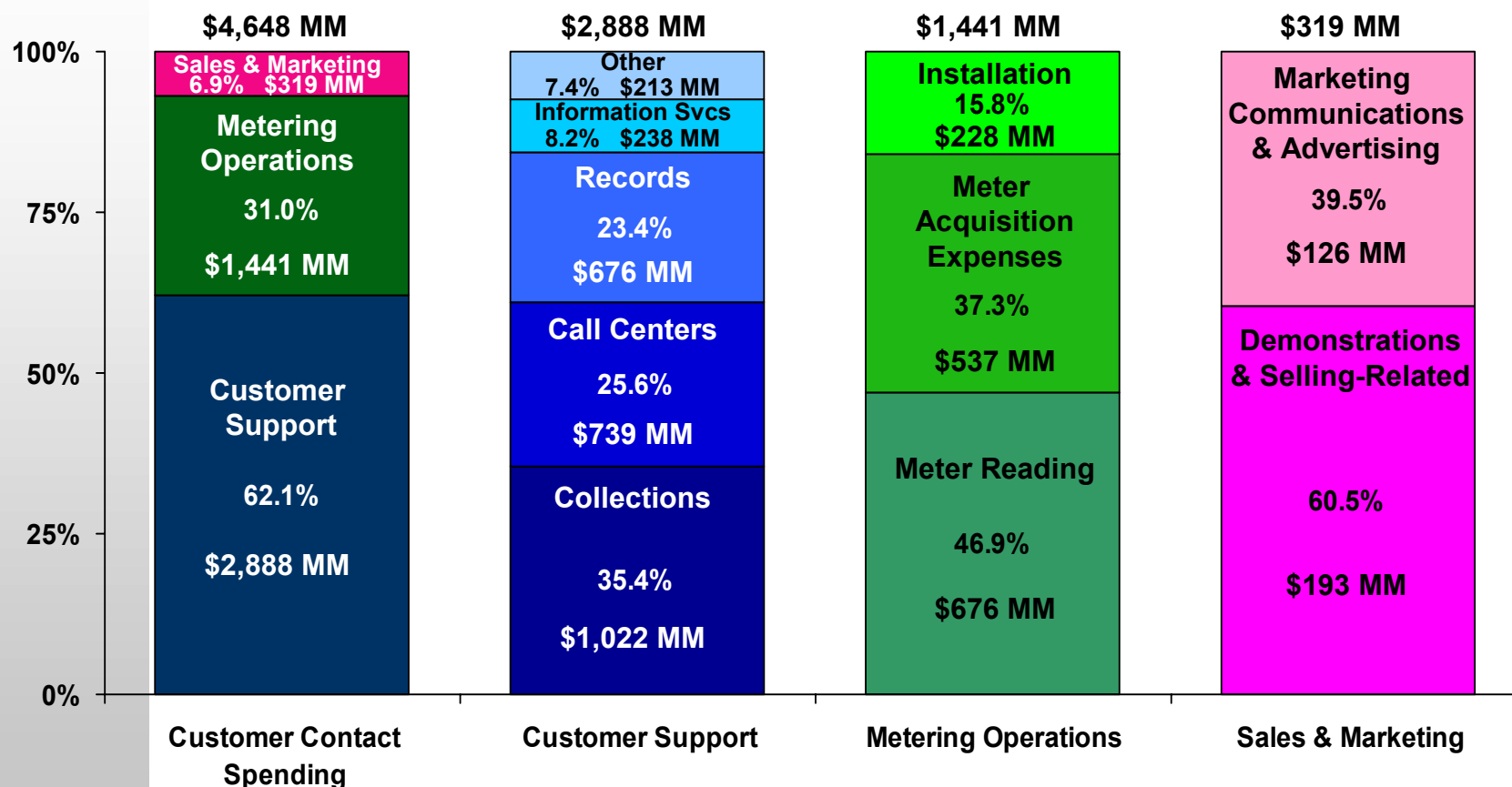
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# \$4.6 Billion Currently Spent On Customer Contact Business Processes

## Electric Utilities' Customer Contact Spending

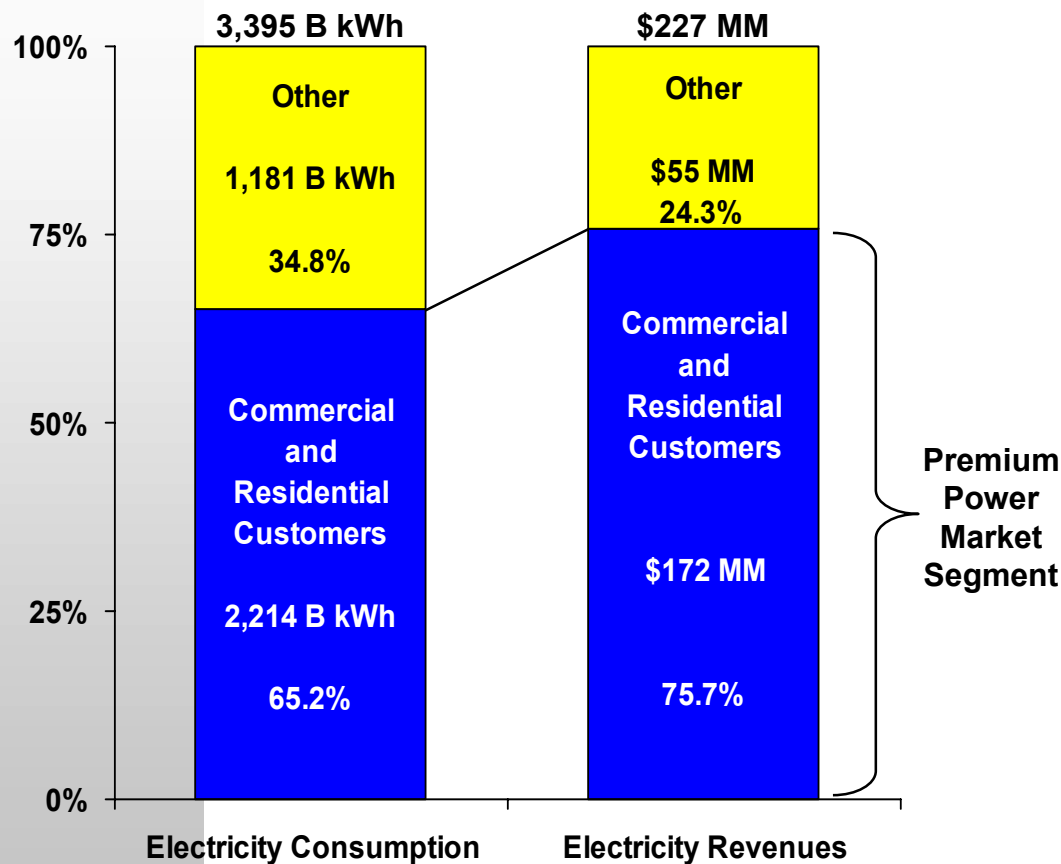


**Expect Expenditures To Grow With Increased Retail Competition**

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

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Electricity Consumption and Revenue



## Key Trends

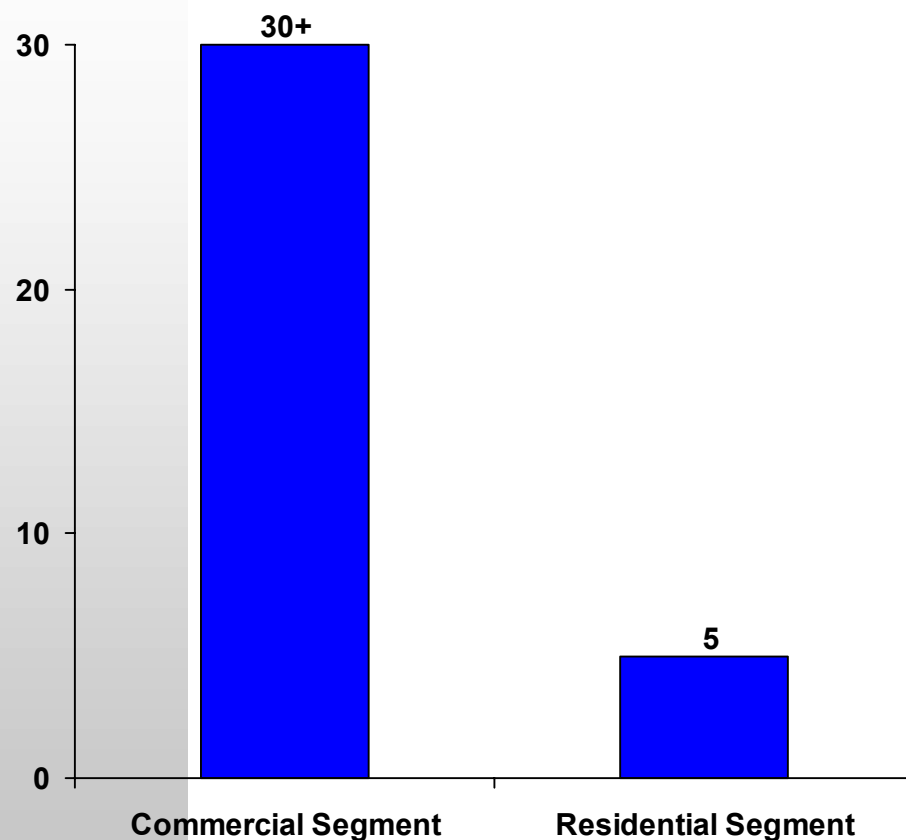
- Price, service and image most important criteria in customer purchasing decision
- Ability to meet customer needs will be key in preserving and increasing market share
  - Satisfied customers will be more loyal
- Premium power market has emerged
  - Customers to pay premium rates for quality and reliability
- 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

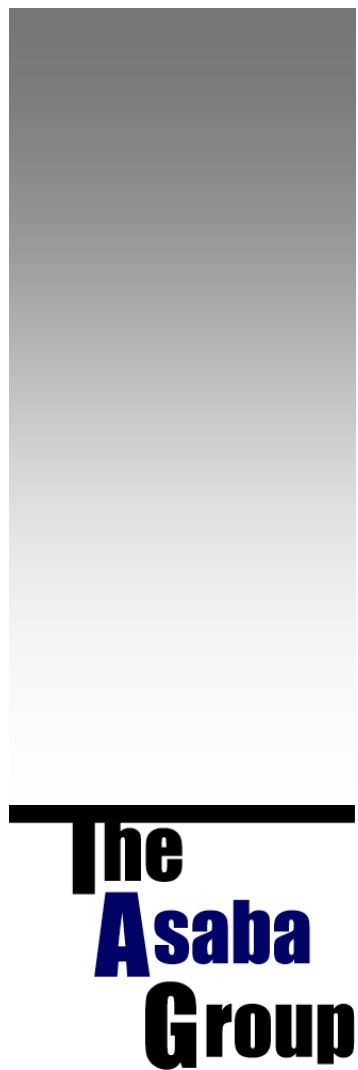
Commercial accounts provide near-term opportunities

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

**Expect Increased Spending In Servicing Commercial Customers**

1. Long Distance

SOURCE: Asaba Group Estimates

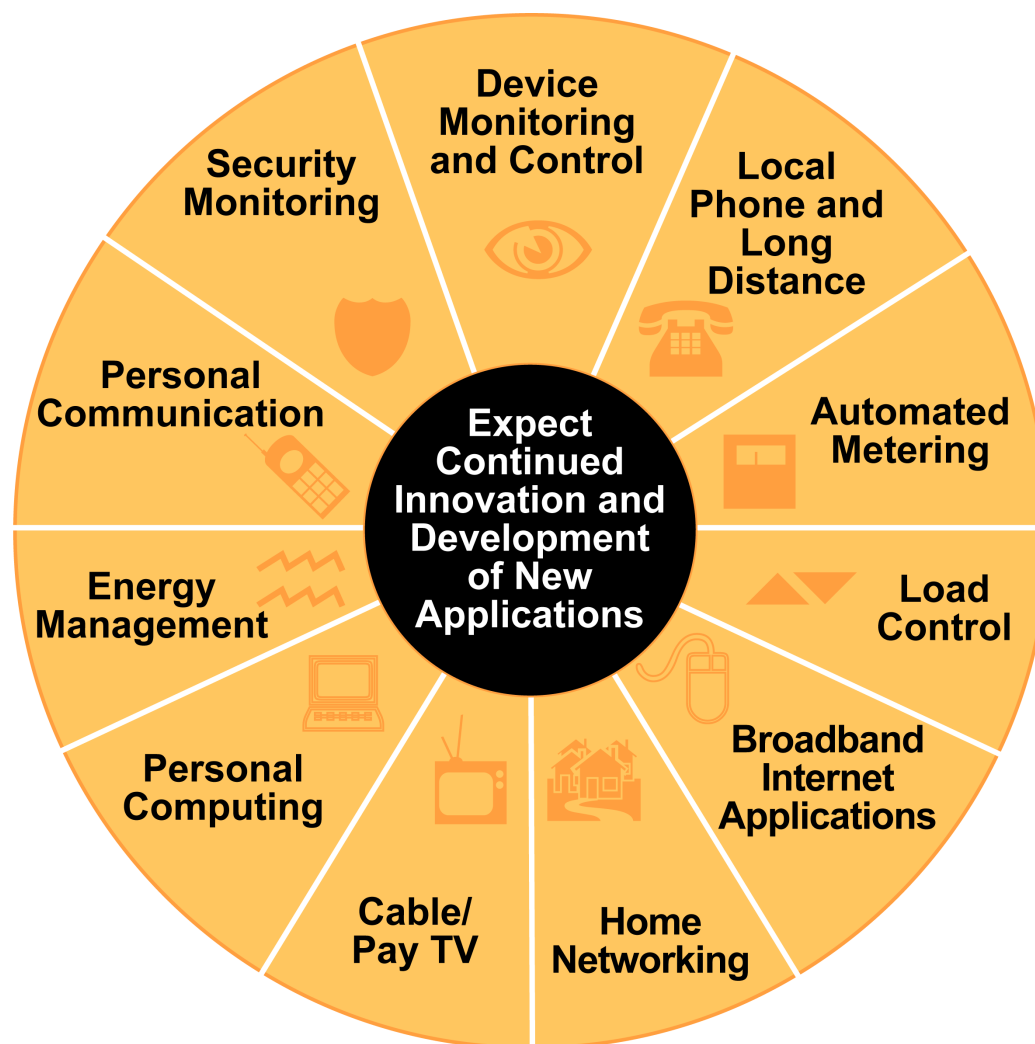


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# Convergence Of Energy, Gas, and Communication Will Create A New Retail Environment

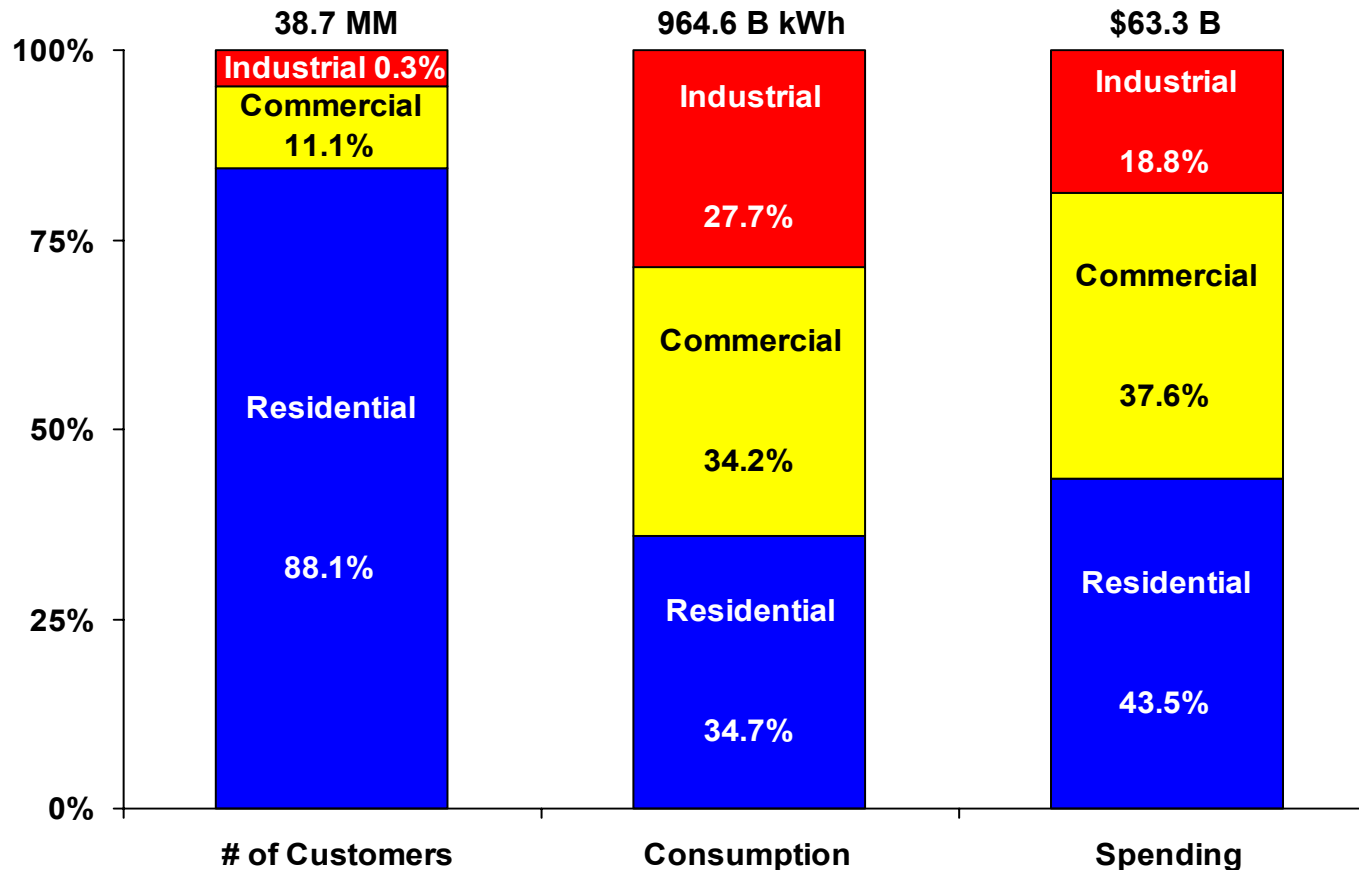


**Expect Continued Innovation And Development Of New Applications**

# Residential And Commercial Customers Important To Service Providers

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

## Largest Utilities In Top Ten Minority States



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

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

Leveraging Expertise in Customer Relationships and Aggregation

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**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**

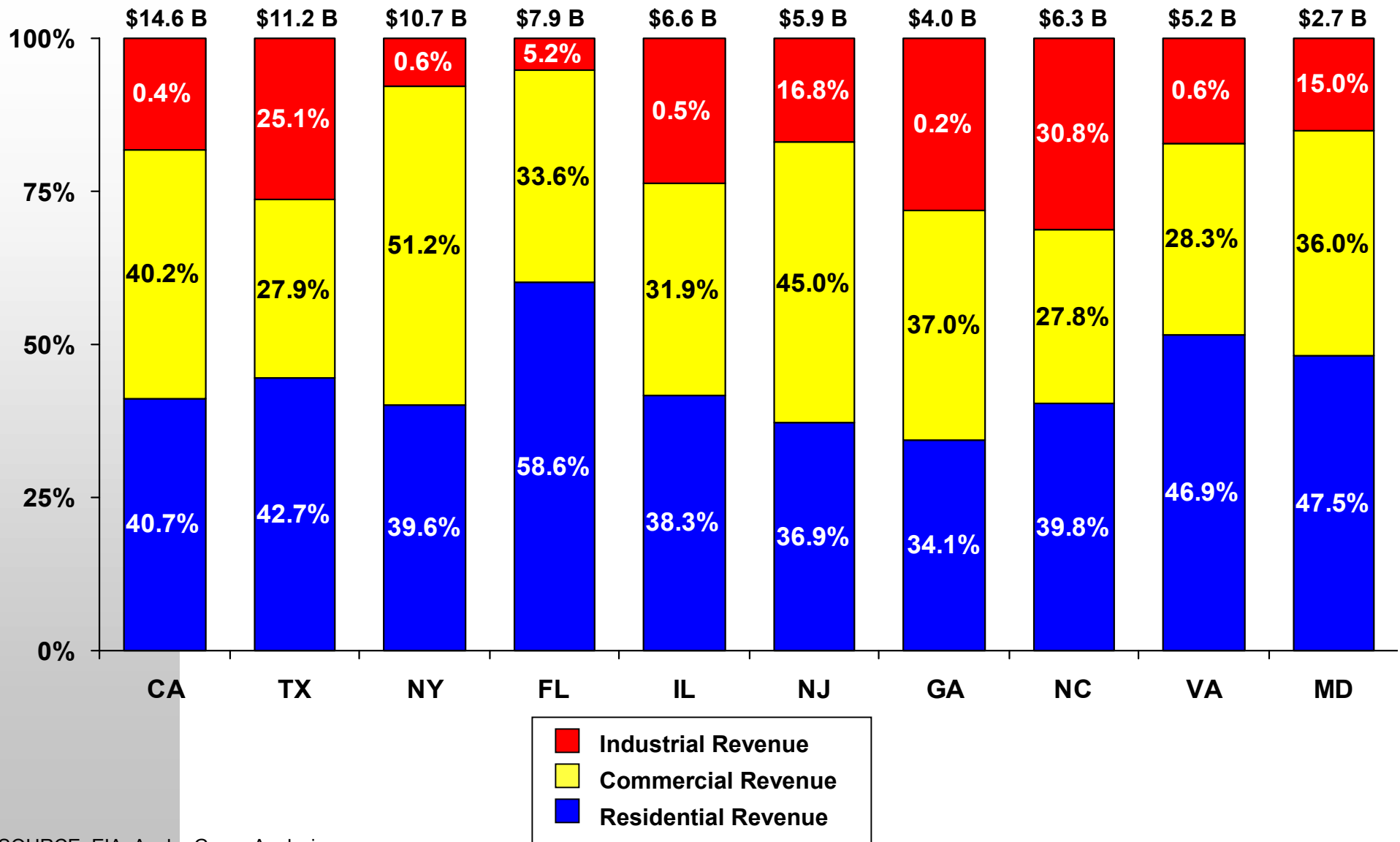
- MBE's can provide telecommunications services, security services, etc.
- Advantage with capital access from utilities
- Leverage “Right of way” network access by utilities

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

- Prevalent in New York and Georgia

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

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SOURCE: EIA, Asaba Group Analysis

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

## **Then Develop Tailored Solutions**

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### **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

# Possible Segments: Illustrative Example

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## 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 style="list-style-type: none"> <li>• Non-interruptible power</li> <li>• “Clean” power</li> <li>• 24 hour steady demand</li> </ul>	<ul style="list-style-type: none"> <li>• Time of day billing</li> <li>• Outage insurance</li> </ul>	<ul style="list-style-type: none"> <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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