The Future of the Insulated Conductors Committee (ICC)

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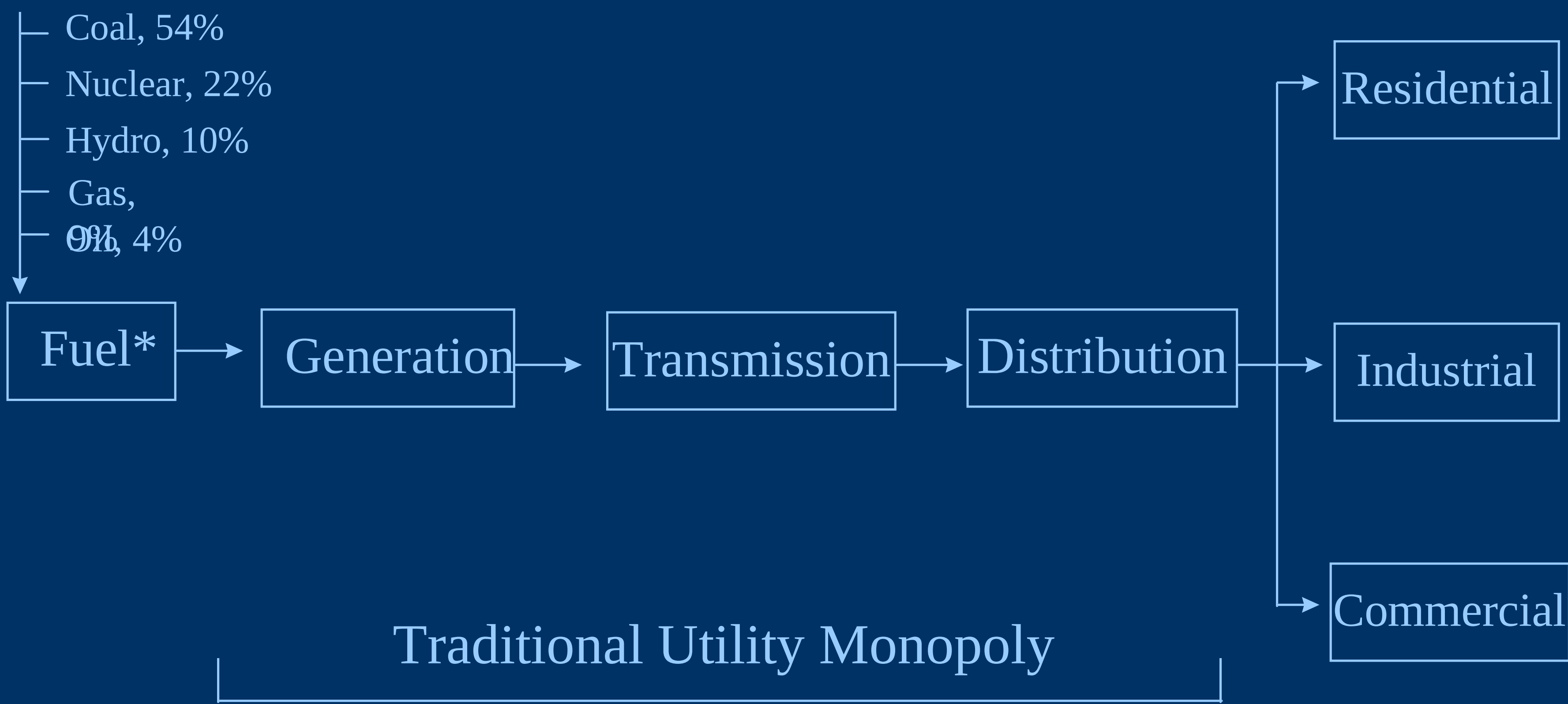
Fall 1999

The Old Way: Utilities have Shoved Electrons towards Customers, and they have Reciprocated with Money.



*Current U.S. Fuel Mix

How have the electric utility companies changed?

- **Changes actually began years ago.**
  - Oil embargo - 1970's
  - Energy Policy Act 1992
- **Major changes begin in March 1995 - FERC issues new rulings to facilitate a competitive market.**
  - Utilities restructure
  - Unbundling of Generation, Transmission and Distribution
  - Diversification into non-regulated businesses
  - Capital investment delayed
  - Downsizing
- **Utilities start to focus on costs and services to customers.**
  - Vertical integration, mergers, outsourcing
  - More services for customers

Why deregulation in the electric industry?

- Regulated Monopoly: No longer viewed as most economical.
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- Large differences in electric rates.
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- Philosophical Issues

When will the Electric Utility Industry become fully deregulated?

- No one knows for sure.
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- Generation is deregulated now.
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- FERC is regulating the transmission and wholesale sales of electricity.
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- Distribution and retail sales are under the jurisdiction of state regulatory commissions.

Is the Electric Utility Industry different from the other Deregulated industries?

- Issue of stranded costs.
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- Jurisdiction issues.

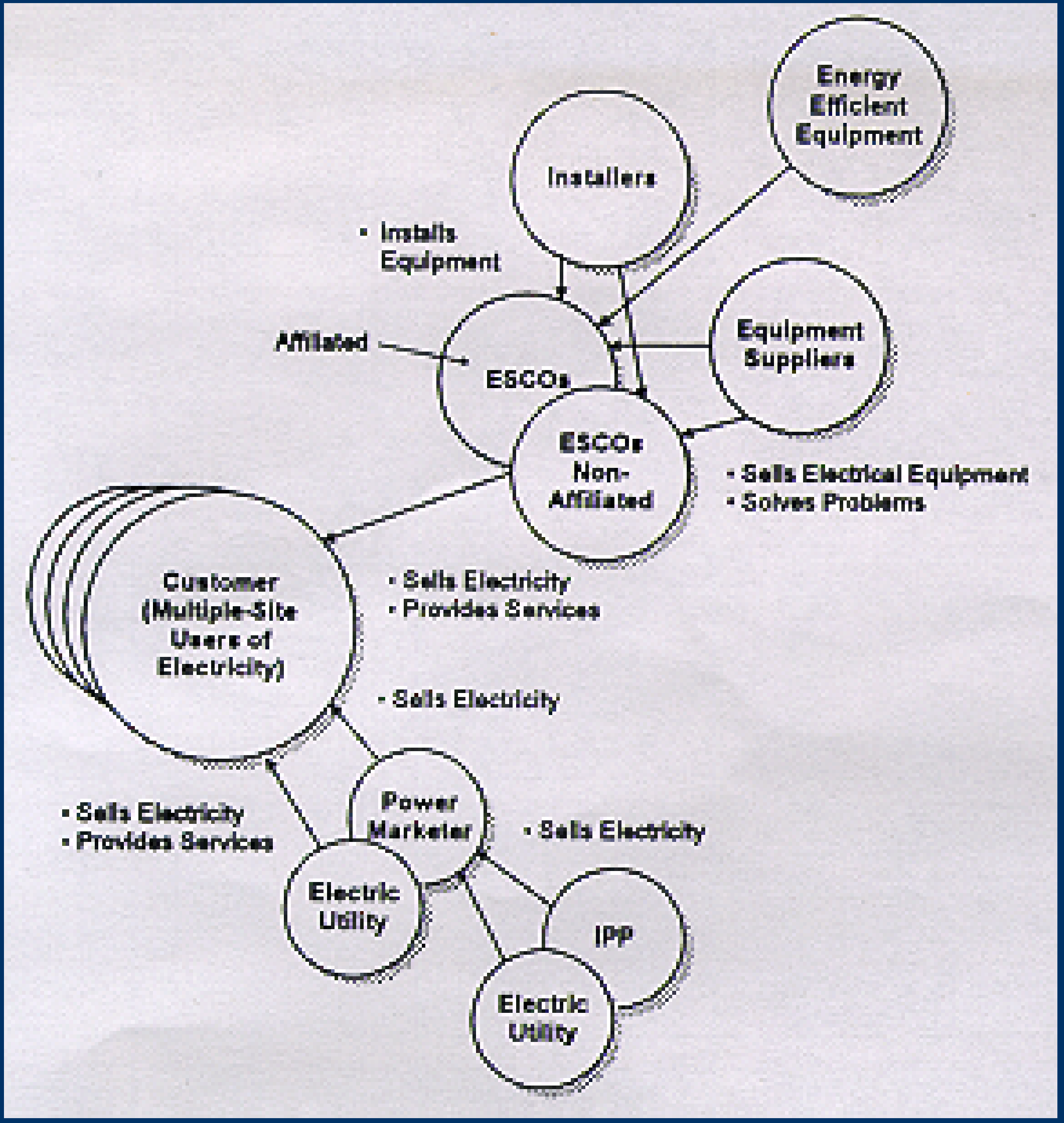
What is the initial impact as a result of the transitions?

- New companies are formed.
  - ESCO’s
  - Power marketers
- New buyers of electricity emerge.
  - Multi-location enterprises
    - Hospitals
    - Retail Chains
  - Multi-location industries
    - Chemical
    - Food Processing

What is the initial impact as a result of the transitions? (cont’d)

- New methods develop in marketing/selling energy services.
  - One-stop shopping
  - Bundling/packaging of services
  - Relationship selling

The New Way


Energy Efficient Equipment
Installers
• Installs Equipment
Affiliated
ESCOs
Equipment Suppliers
ESCOs Non-Affiliated
• Sells Electrical Equipment
• Solves Problems
Customer (Multiple-Site Users of Electricity)
• Sells Electricity
• Provides Services
• Sells Electricity
• Sells Electricity
• Provides Services
Power Marketer
• Sells Electricity
Electric Utility
IPP
Electric Utility

Products and Services offered by an ESCO

- Energy Efficient Equipment
-
- Load Control Equipment
- Power Quality Equipment
-
- Alternative Energy Supply
-
- Services

What are the likely future changes in the power delivery industry?

- Utility mergers and acquisitions will continue.
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- Utilities will continue to sell core services.
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- Major equipment suppliers will form joint ventures with utilities and ESCO’s.
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- The market for power measurement and monitoring equipment will increase.

What are the likely future changes in the power delivery industry? (cont'd)

- The market for equipment upgrades will increase over the next 2-3 years.
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- New communications/information technology will emerge.
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- The number of traditional Electric Utility Engineers will decrease over the next several years. The functions performed will remain, just the company and/or location will change.
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- The number of new companies will increase and then shrink as the market sorts out.

How do the changes affect IEEE/PES T&D conference and exposition?

- The number of <u>traditional</u> attendees will likely decrease during the next several years.
- The number of potential exhibitors will likely increase.
- Reasons for attending conferences and trade shows will change as networking, deal making, and establishing relationships will increase during the next two years (and maybe longer).
- The 1999 IEEE/PES T&D event may not be affected as much as later events in the next century. The transition to a deregulated market is still in the early stages.

Issues for Electric Utility Engineers

- Price of attending trade show.
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- Time available to view exhibits.
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- Availability of private areas to discuss business.
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- Number of manufacturer's reps to talk with.

What is the most important reason Utility Engineers attend trade shows?

- Review new products introduced by manufacturers. [45%]
- Learn about new technologies being applied. [29%]
- Chance to discuss business with others. [13%]
- Look for new manufacturers/customers. [3%]
- Chance to socialize with vendors/peers. [0%]

Is continuing education an important subject or issue at your company?

Electric Utility Engineers	
Yes	84%
No	16%

Based on the study findings, the following customer segments would be available and have an interest in the electric power industry:

- **Regulated electric utilities**
- **Non-regulated electric utility subsidiaries or affiliates**
- **ESCO's - independent**
- Power quality manufacturers
- Power measurement manufacturers
- **Distributed generation suppliers**
- **Contractors/installers**
- Power marketers
- Gas marketers
- Consultants
- Gas utilities
- **Industry associations**
- Security system suppliers
- Telecommunications suppliers
- Computer manufacturers
- Software suppliers
- Credit card companies
- Publication companies
- Ad agencies
- **International utilities**
- **Public power companies**
- **Large industrials**
- **Electrical equipment manufacturers**

U.S. Electric Power Industry faces Numerous Challenges

120 years old

Conservative

Equipment Age
Normal demand: 20+ yrs
Peak demand: 30+ yrs

Deregulation will reduce revenue 20-30%

$100-400B of stranded assets
Who pays? For how long?

Structure
$300B capital, $190B Sales
8000 investor owned units
300 co-op owned units

EMF
T&D Construction delays
State-by-state reps
Litigation

Consolidation of power generation assets

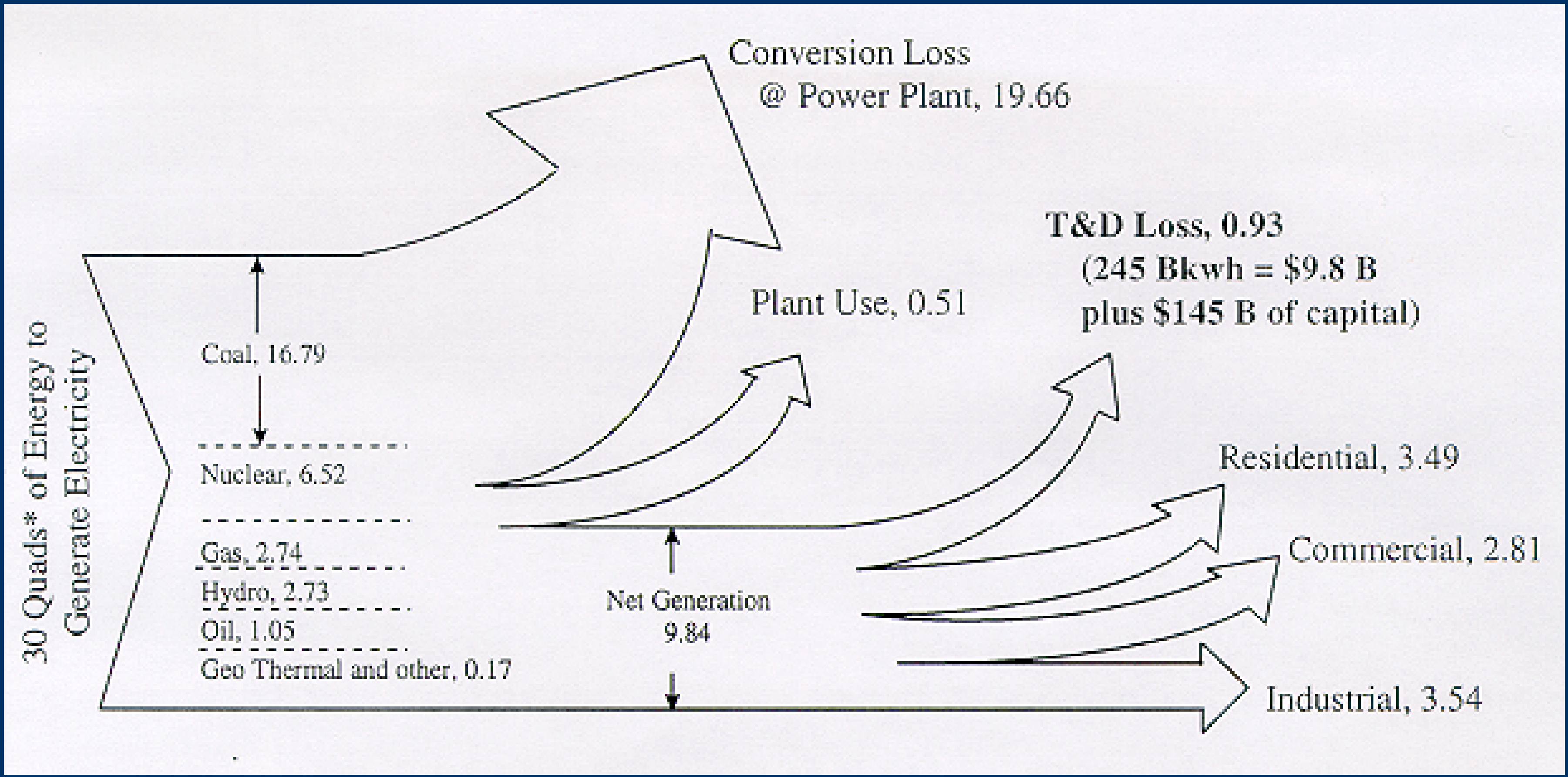
Major cities require underground lines
$32MM/mile
(8X cost on poles)

Distributed Generation

Interconnectivity- designed for back-up, not transportation

Central Power Plants:

Process to turn fuel into 1/3 Electricity and 2/3 Waste Heat



* Quad = Quadrillion BTU

Source: Electrical Industry Assoc.

Only Generation is being Opened to Competition.

Build up a California Deregulated Bill

Cents/kW	Component
2.5	Generation
0.7	Transmission
2.4	Distribution
0.1	Help for the poor/Externalities
0.4	Billing
3-4	Stranded assets
9.1-10.1	**Total**

Regulated

Implications to ICC

- The Electric Utility Industry is changing faster than the ICC.
  - New companies/industry segments that ICC has not communicated with.
  - New issues/trends are driving power delivery.
  -
- The balance between suppliers and manufacturers and buyers and users is adversely changing.
  - Utilities have downsized engineering departments.
  - Utilities are under tight budget restraints.
  - Mergers mean fewer utilities.

Implications to ICC (cont'd)

- Marketing efforts are required to accommodate the needs of new attendees.
  - 2000 companies interested in T and D.
  - 10 new industry segments.
- The ICC needs a stronger and clearer focus.
  - Who are the current ICC "customers"?
  - Who are the new customers?
  - Where is the visible "business" or "marketing" plan?

Implications to ICC (cont'd)

- The major role of the ICC is as <u>technology</u> leader for power delivery systems.
  - ➢Technology will be a major factor in the future of a deregulated, highly competitive market.
  - ➢ Technology and new emerging technologies will be viewed by the utilities as a competitive weapon.
  - ➢ Technology will differentiate utility "winners and losers.
- ICC should explore whether additional topics on industry issues are needed to expand our service to current and new members.

Recommendations

- ICC should position its future from a base of technology leadership.
- ICC should consider the need to address industry issues and trends.
- ICC should continue to provide education and training.
- ICC should use electronic methods to accommodate the rapid change occurring in the power delivery industry (reduce cost and cover white space between meetings).

Recommendations (cont'd)

- ICC should identify which "customer" segments have an interest in our technology base. ICC should determine who they can't serve.
- ICC should develop a "customer" market strategy and market plan to capture these segments of the power delivery industry.
- ICC needs to continually appraise, evaluate and change our "customer" offering to match the changes in the power delivery industry.

Recommendations (cont’d)

- ICC should determine if we have IEEE rivals that are competing for the same “customers” and then action on a common “solution.”
- ICC should continue to search for more efficient meetings and methods.