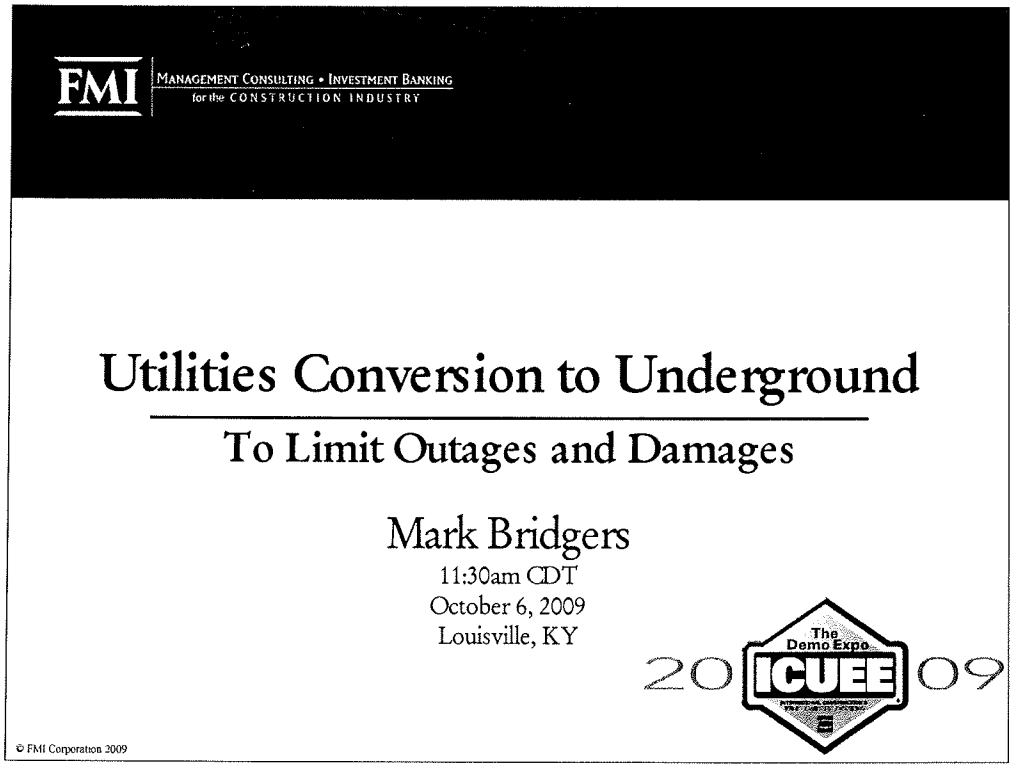

This slide can be used in a variety of manners with charts and images.

Thank You for attending
How many of you are utility reps?
Contractors
Engineers/Design
Material M/O
Equipment M/O

How many of you feel undergrounding is accelerating?
Level
decelerating?

Today we are going to discuss this trend, try and understand
what if anything is driving it, and then discuss the implications.
Are there any big picture questions before we begin?

Overview

FMI

About Our Speaker

Mark Bridgers

Mark founded and leads the Utility/Energy Vertical Market group at FMI. He works with gas/electric utilities, utility contractors and engineers, and value added material/equipment suppliers to the utility/energy construction industry to help them prepare for and successfully navigate "strategic transitions."

His passion is helping organizations achieve breakthrough innovations through collaborative or integrated relationships. He is the architect of FMI's corporate efforts in this area and is responsible for the design and implementation of what FMI refers to as the "Extended Enterprise" among utility industry participants.

Mark is an avid educator, trainer, and writer with more than 18 years of industry expertise including strategy development, financial engineering, surety bonding, and reinsurance experience. He is author of over 70 articles and research papers published internationally in industry journals, including ENR, Underground Contractor, and Electric Perspectives.

Mark holds a master's degree in business administration from the University of Virginia's Darden school of Business and a bachelor's degree in financial management from Clemson University. In addition, he earned the designation of Chartered Property and Casualty Underwriter (CPCU) and Associate in Reinsurance (ARe).

1

FMI is a 55 year old firm, the largest in the construction industry, that focuses solely on the construction industry. We have experts that touch every aspect of the construction industry and its participants: Owners/Utility Operations; Contractors; Designers; Material/Equipment Suppliers.

I lead a group of consultants that specialize in what we call the Utility Vertical Market.

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Objectives & Agenda

- Objective: Discuss drivers for and impediments to the undergrounding of power lines

- Agenda:
  1. Why: Drivers for underground T&D lines
  2. What: Characteristics of underground lines
  3. Challenges & Opportunities
  4. Utility, State and Global Reactions
  5. Resources

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2

Big Picture

AI: Opportunity to go underground

GC: Change long-term cash flow stream

Dem: High growth = High Desirability = Aesthetics = Underground

Aging: Reevaluation of how always done things

Pow Gen: More lines in already populated areas

Collab: Higher risk requires more constant interplay

Leg: Green Issues.

↓ More Pressure

Today Agenda

Before we jump in let's set the back drop:

There are a series of global/national drivers/trends that are the source of much, if not all, behavior in the utility industry

1) Aging Infrastructure: Old stuff demanding upgrade or replacement

2) Global Consolidation: Searching for improved operational performance

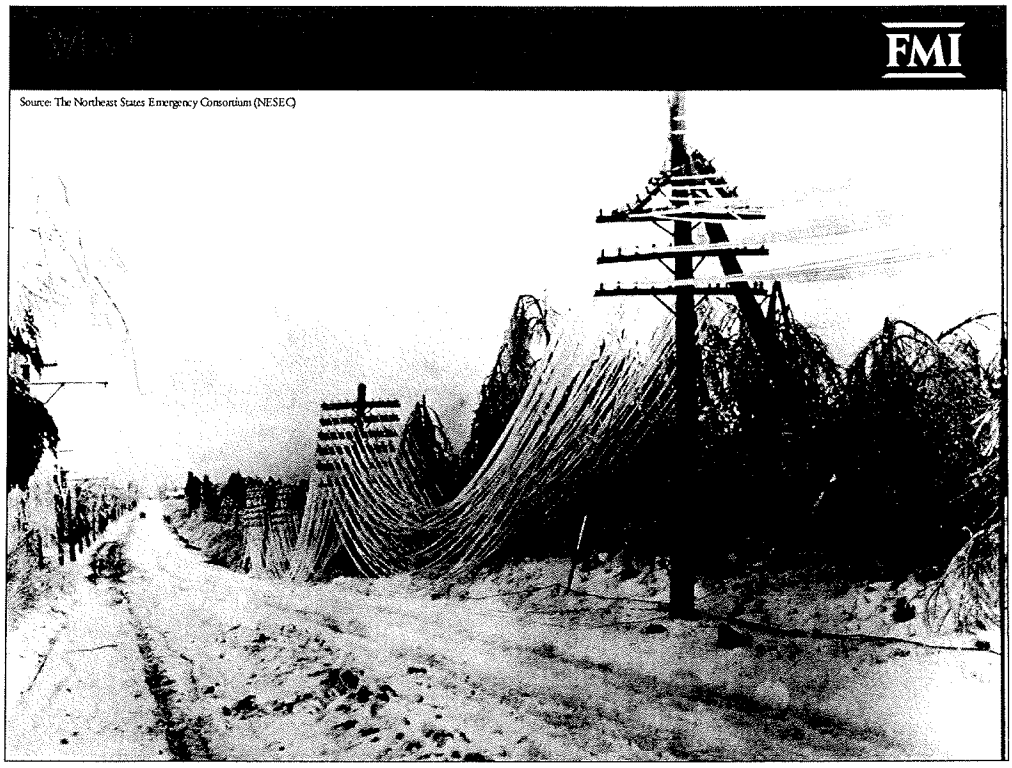
3) US Demographic Shifts: People movement from Northeast/Midwest to Southwest

4) Utility Staff Shrinking/Aging: 1) Baby Boom 2) Attraction challenges

5) Shifting Power Generation Mix: Changes type & dynamic of construction

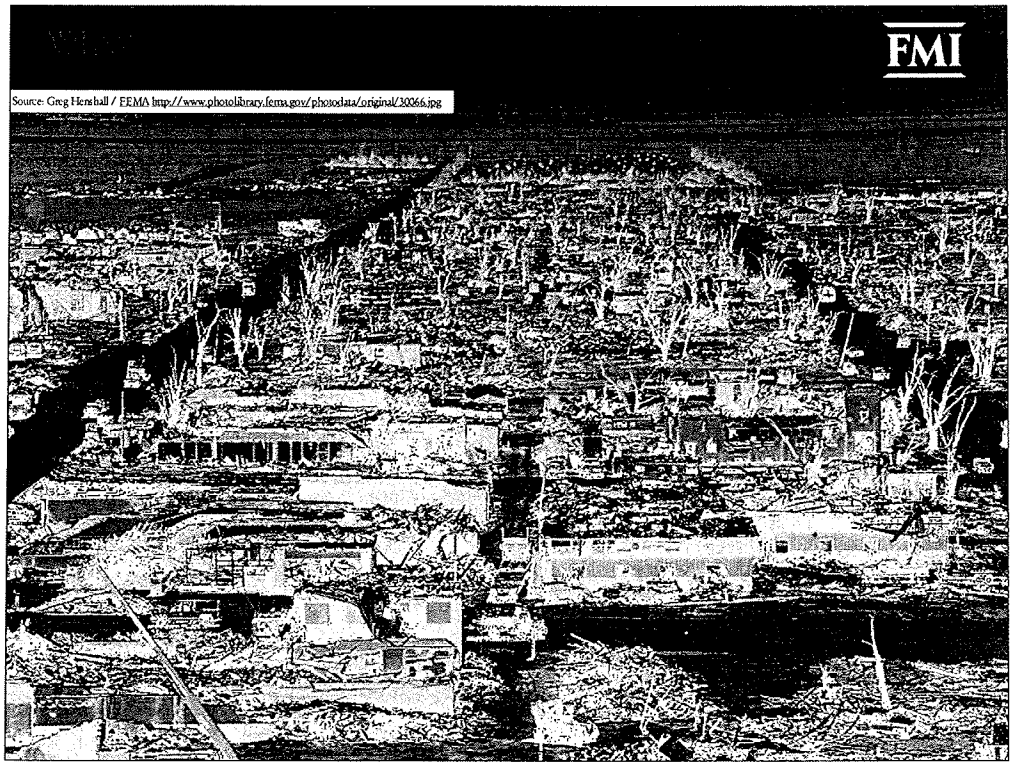
6) Collaborative Sourcing Strategy: Complexity/Speed driving higher risk profile

7) Changing Legislative Environment: New/different regulations



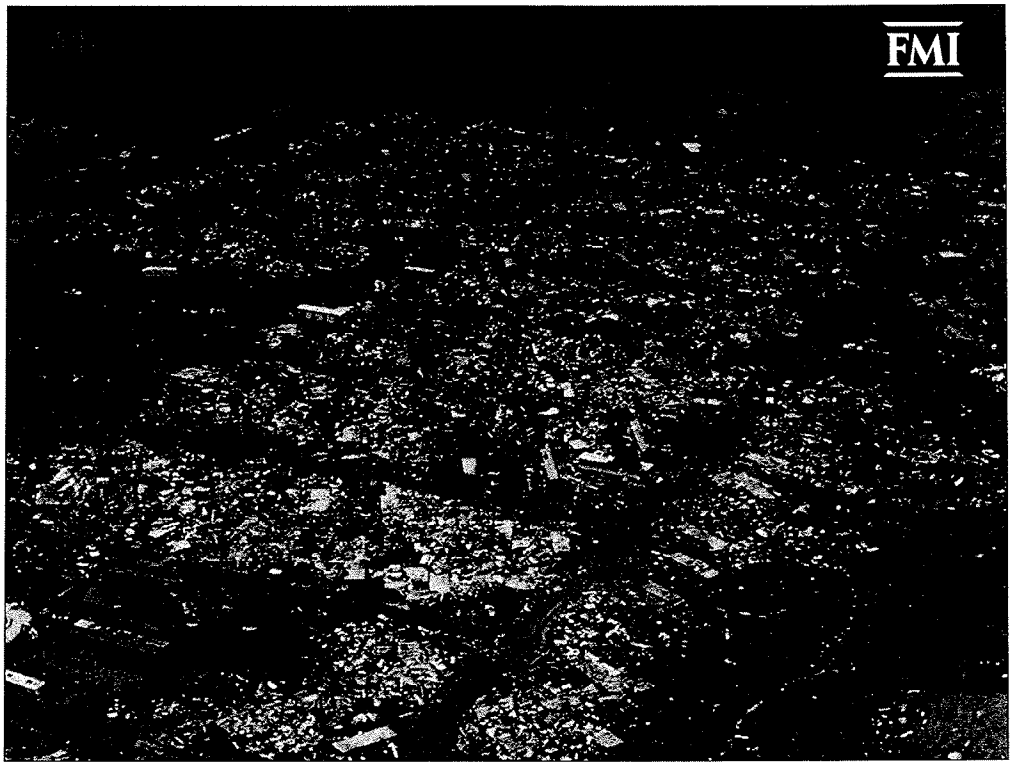
Northeastern US ice storm

If global warming is true = More severity of impact from more snow and possibly more frozen storms



Greensburg, Kansas. Tornado damage from May 2007. Hit by an F5 tornado with winds at 205 mph.

Slow



Hurricane Andrew

Same

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Example Outage Impact *(1 of 2)*

Storm Event	Utility	Year	Customers Impacted	Outage Duration (Days)
Ice Storm	Kentucky Utilities	2009	607,000	
Ice Storm	Public Service NH Other Providers	2008 2008	322,000 80,000	13
Windstorm	National Grid Other Providers	2006 2006	211,000 117,000	5 4
Hurricanes Katrina & Rita	Entergy	2005	832,000	Power never to all
Hurricane Wilma	Florida P&L	2005	3,200,000	18
Hurricane Francis	Florida P&L	2004	2,800,000	12
Hurricane Isabel	Dominion, VA BGE	2003 2003	1,800,000 790,000	14 8
Ice Storm	Kentucky Utilities	2003	146,000	8
Ice Storm	Duke Progress Energy CP&L	2002 2002	1,375,000 561,000	9 8

Source: Table used in A Study on the Costs and Benefits of Undergrounding Power Lines. Prepared for the Edison Electric Institute (EEI); compiled from press accounts.

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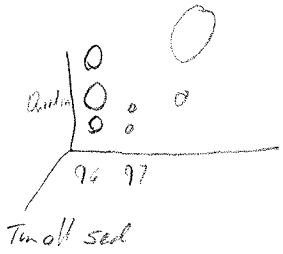
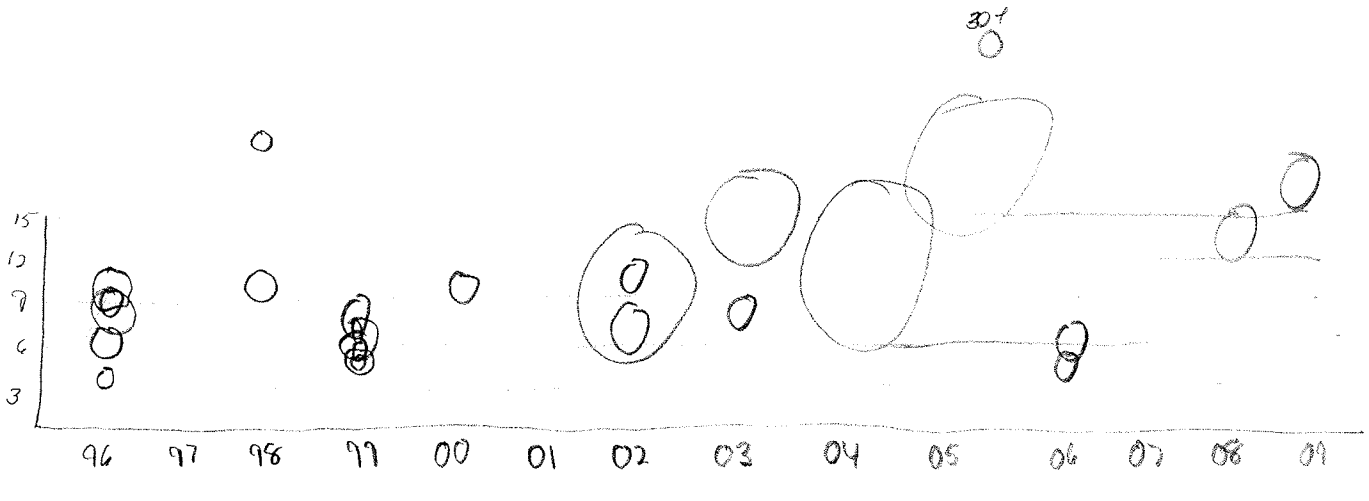


Some reality



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Example Outage Impact *(2 of 2)*

Storm Event	Utility	Year	Customers Impacted	Outage Duration (Days)
Ice Storm	KCPL	2002	305,000	10
Snowstorm	Progress Energy CP&L	2000	173,000	10
Hurricane Floyd	Virginia Power	1999	800,000	5
	Progress Energy CP&L	1999	537,000	6
	BGE	1999	490,000	5
Ice Storm	Pepco	1999	213,000	5
	BGE	1999	360,000	5
Ice Storm	Central Maine Power	1998	250,000	21
Ice Storm	Virginia Power	1998	401,000	10
Hurricane Fran	Virginia Power	1996	415,000	6
	Duke	1996	450,000	9
Ice Storm	Duke	1996	650,000	8
	Progress Energy CP&L	1996	790,000	10
	Other Providers	1996	61,000	4

Source: Table used in A Study on the Costs and Benefits of Undergrounding Power Lines. Prepared for the Edison Electric Institute (EEI); compiled from press accounts.

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Conversion Drivers

Source: http://cafnr.missouri.edu/images/news/stories2009/linesandstreet.jpg

1. Aesthetics
   - Create streetscape
2. Weather
   - Hurricanes, monsoons
   - Tornados
3. Long-term cost amortization
   - Not financially feasible in short-sighted outlook

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Three stated / Tactical Drivers mentioned in nearly every case. These are somewhat measurable and by definition necessary to build a realistic business case for undergrounding.

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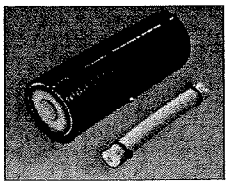
Conversion characteristics



- Horizontal Directional Drilling (HDD)
  - Open-cut installations may cause disruption to the neighborhood, traffic problems and soil instability issues
- Encasing the cable in high-density polyethylene (HDPE) schedule-40 conduit
  - More accessible
- Cost
  - In rocky conditions convention puts HDD at 2 to 3 times more expensive than in softer conditions
- Bore failures down
  - Technological progress in HDD

Source: Florida Public Service Commission, "Preliminary Analysis of Placing Investor-Owned Electric Utility Transmission and Distribution Facilities in Florida." March 2005.

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What does underground mean, mph?

Directional Drilling or open cut - Both cost and customer satisfaction implications

Wide Intrusion - Materials today, much high quality than 1970/80 installations

Cost - Varying soil conditions drive installation cost - High variability

Risk - underground more risk - Cross Bore, bore failure, etc

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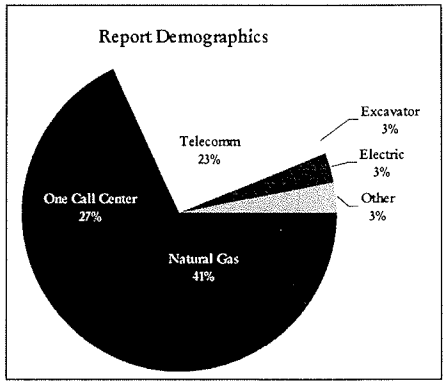
Underground damages decreasing

- "Damage Information Reporting Tool" (DIRT) Report
  - Common Ground Alliance (CGA)
  - Number of underground utility damages occurring in the U.S.:
    - 2004 = 450,000
    - 2007 = 256,000
    - 2008 = 200,000



Source: DIRT Annual Report for 2008. (Damage Information Reporting Tool) Analysis and Recommendations, pg. 6

Potential Risk
Dig in damage
National effort to eliminate risks for
Natural Gas pipeline - existing effort before
Underground electric line damage

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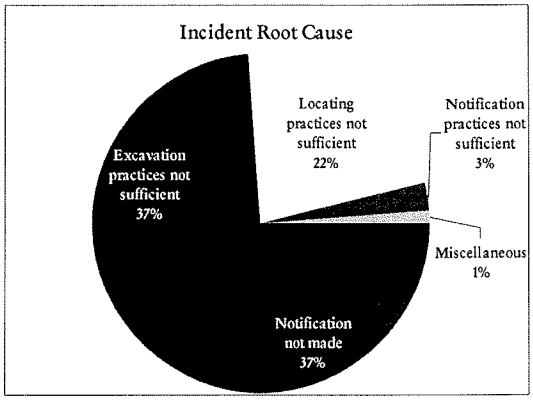
DIRT Report Conclusions...

- "Notification Not Made" as the root cause are down to 37 percent from 48 percent in 2004
  - The implementation of "811" in May 2007 has had a positive impact on the calling process



Source: DIRT Annual Report for 2008. (Damage Information Reporting Tool) Analysis and Recommendations, pg. 8

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7On March 10, 2005, the Federal Communications Commission approved the use of 811 as a national "Call Before You Dig" telephone number. This three-digit number will connect anyone intending to dig with their respective One-Call center. Implementation of this process is currently underway and is to be fully operational in April 2007. For more information on 811, visit *www.call811.com*

Notifications was largest
Now under better control

Still significant opportunity for improvement

FEMA & SEMA Grants

- Money available through Federal Emergency Management Agency (FEMA) & State Emergency Management Agency (SEMA)
- Hazard Mitigation Grant Program (HMGP)
  - Provides funding to state and local gov't
  - FEMA can fund up to 75% of project cost
  - Application required a project must conform to State Hazard Mitigation Plan

Source: FEMA <www.fema.gov>

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Municipal utilities

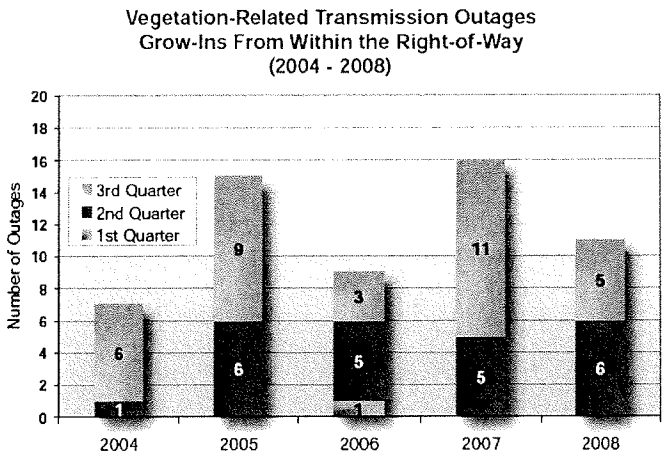
- *"Reinstalling overhead lines following a major ice storm as 2002 is a 14-day event. It takes about seven days to repair the main distribution system and the rest of the time is spent putting services back up."*

  Jack Looney
  District Engineering Planner Supervisor
  Independence Power & Light

- Goals in conversion:
  - Reduce our customers' vulnerability to danger
  - restore power for more customers in a shorter period
  - Reduce the expense of
    - Repairing services
    - Property damages
    - Additional crews and other overhead services

Municipal Drivers

Transmission outages



Source: "Annual Report 2008,". NER, May 2009, pg. 15. <http://www.nerc.com/files/2008-Annual-Report.pdf >

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Note - transmission

significant number of screw outages

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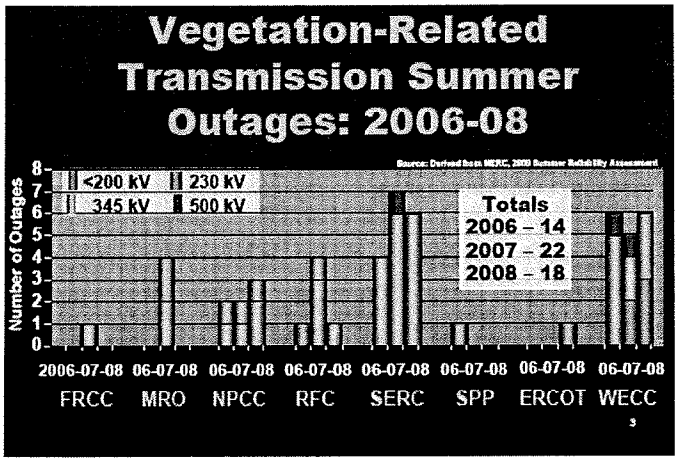
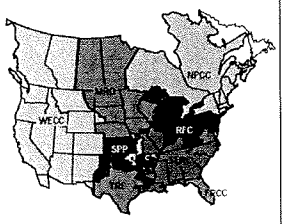
Summertime vegetation-outages by region





Source: 2009 Summer Energy Market Reliability Assessment, Item No. A-3, May 21, 2009, pg. 3. <http://www.ferc.gov/market-oversight/mkt-views/2009/05-21-09.pdf>

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Significant of vegetation outages

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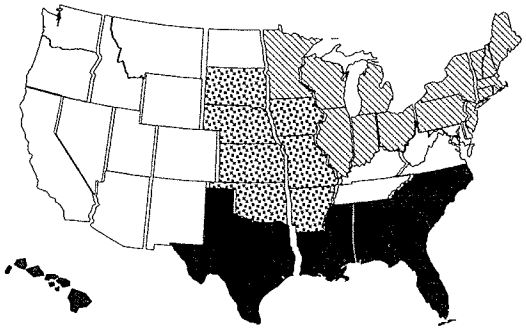
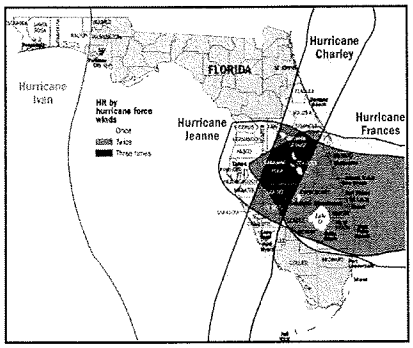
Regional Weather Threats





Hurricanes & Tropical storms

Tornadoes & Thunderstorms

Snow, Ice

Source: FMI proprietary research and analysis of publically available information and Florida Public Service Commission, "Preliminary Analysis of Placing Investor-Owned Electric Utility Transmission and Distribution Facilities in Florida." March 2005, pg 9.

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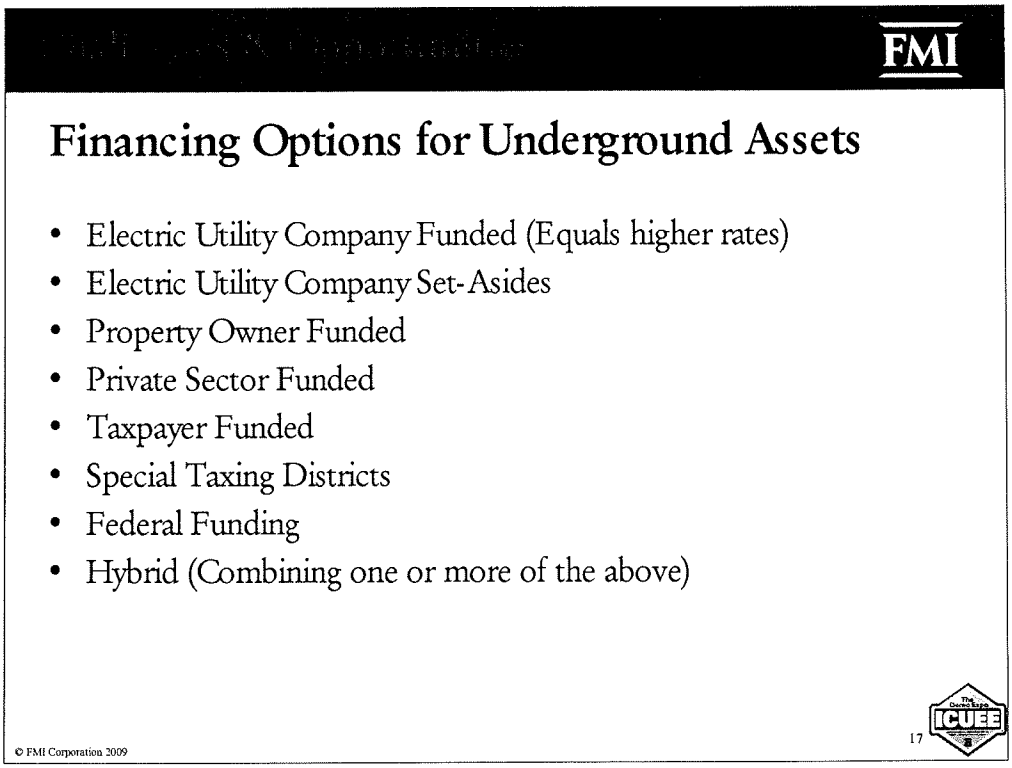
Path of Hurricane force winds

Severity of impact



A. Electric Utility Company Funded

Utilities fund the initial cost which is recouped through higher rates applied to all customers (residential, commercial and industrial). An advantage to this method is relatively low administrative costs. A disadvantage of this option is that it may involve a cross-subsidy to those who enjoy the primary benefits of lines being underground (urban residents) from those who do not benefit as much (rural residents). Some communities, including some industrial customers, do not place a high value on the aesthetic benefits of undergrounding. This method could also be considered regressive due to its disproportionate impact on low income households.

B. Electric Utility Company Set-Asides

A state/local fee is placed on utilities which is set aside and allowed to accrue over a period of time to be used to cover the cost of government undergrounding projects. An advantage of this method is it has very little effect on utility rates. A disadvantage is the extended length of time involved to accrue the necessary funding. This is the method that has been used in California for the past 30 years. The California Public Utility Commission (CPUC) requires utilities to set aside between one and two percent of gross revenues annually for use by the counties in undergrounding projects. The counties must then act through ordinances to establish areas that will be eligible for the funds.

C. Property Owner Funded

Payments are made to the city or county government. Payments are made for a fixed term such as one year with no interest charged, payment over five years with an interest component, or a deferred payment option that allowed qualified elderly residents to defer payment until their property is sold. An advantage of the property owner funded option is the closer alignment between those who pay and those who benefit. However, before an entire subdivision can be converted to underground, each property owner must agree to bear his/her proportional cost of the conversion.

D. Private Sector Funded

A special purpose finance vehicle (SPFV) could be developed solely for the purpose of privately financing undergrounding according to a study conducted by an Australian Working Group in 1998. Shareholders of a SPFV could include a range of stakeholders such as Local Government, utility companies, community groups and financial investors. Revenue might come from a hybrid pricing approach which would levy part payment from the property owner and part from utilities by way of an electricity surcharge. Special tax concessions or other regulatory incentives would likely be needed in order to attract investors. A drawback to this approach is that it can be extremely complex and expensive to set up such a vehicle.

E. Taxpayer Funded

A general tax is applied at the local or state level, rather than a levy only on the utility or property owner. For example, the State could create a special undergrounding fund and earmark monies, from public utility fees, to be deposited into the fund. Taxpayers and utility customers could also be allowed to make voluntary contributions into such a fund. This option has the disadvantage of allowing some persons to receive greater benefits than others, depending upon the area in which they live and the timing of undergrounding for each.

F. Special Taxing Districts

Dare County in North Carolina successfully secured the enactment of a local act (NC Session Law 1999-127) authorizing the creation of one or more Utility Districts for the purpose of raising and expending funds to underground electric utility lines in the district. The county commissioners define the boundaries of a utility district and any municipality may join the district. The county commissioners may levy a tax of up to $1 per month on each bill for residential electric service within the district, and up to $5 per month on each bill for commercial service. The electric utilities collect the tax and retain a percentage as compensation for their collection services. The proceeds of the tax are used for the purpose of undergrounding electric utilities within the district. However, there has been concern expressed that even if the taxes are collected for a number of years, they may not be sufficient to cover the costs of undergrounding.

G. Federal Funding

The State Department of Transportation uses federal funds for undergrounding when eligible highways are being constructed. The federal Transportation Enhancements Program, under the Transportation Equity Act for the 21st Century allows communities to apply for funds for utility burial or relocation under the categories of landscaping, scenic beautification, or scenic/historic highway programs and welcome centers. Federal Community Development Block Grants have also been used to fund utility relocation projects. The Federal Emergency Management Agency (FEMA) makes funding available for qualified projects through its Hazard Mitigation Grant Program.

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Historic Research and Example Challenges

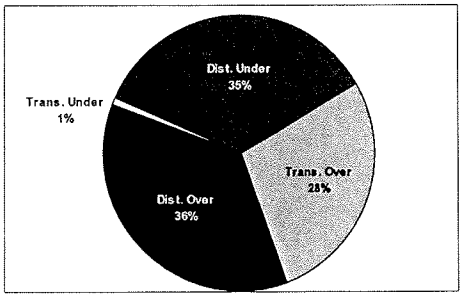
- No state currently requires extensive undergrounding;
- Conversion is rarely 100% justified on the basis of cost vs. quantifiable benefits;
- Ex post analyses on actual underground conversion projects have not been done;
- Few alternatives to undergrounding, like strengthening or hardening exist;
- Almost no academic or industry modeling of storms reliability of underground electric distribution systems;
- Until 2006, no academic or industry literature that addressed underground failure rates during hurricanes as a function of hurricane strength;
- Too little existing research for use in completing a detailed study

Source: Brown, Richard, PhD, PE, Underground Assessment Phase 1 Final Report: Literature Review and Analysis of Electric Distribution Overview to Underground Conversion, Infrasource Technology, February 28 2007, pg. 5.

Spending Expectations

- Vast majority of spend is still in overhead categories
- Dollar wise, underground transmission is very small percent of total T&D spending

T&D Capital Spending:
Underground vs. Overhead



Dist. Under – Distribution-Underground
Dist. Over – Distribution overhead
Trans. Under – Transmission-underground
Trans. Over – Transmission overhead

Source: FMI proprietary research and analysis of publically available information.

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Opportunity

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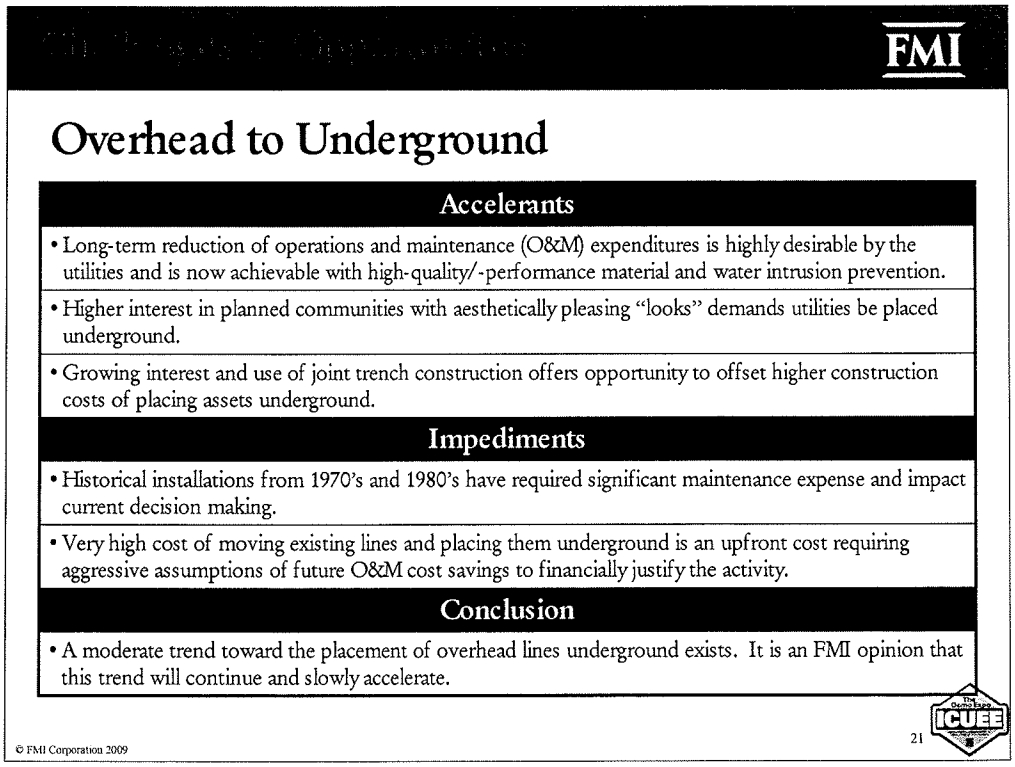
Cost vs. Benefit Analysis

Benefit		Cost	
Tangible	Societal	Direct	Indirect
O&M	Enhanced reliability	Planning and permitting	Increased exposure to dig-ins
Tree trimming	Reduced motor vehicle accidents	Labor to remove existing and install new facilities	Environmental damage including soil erosion, disruption, etc.
100 year storm rebuild	Safety (i.e. reduced live wire contact)	New underground T&D facilities	Utility employee work hazards during underground inspections
Reduction in day to day lost energy sales	Noise, EMF, etc. reduction	Equipment to remove and install facilities	Longer duration interruptions and more customers impacted
Reduction in 100 year storm lost energy sales	Customer relations (i.e. reduced tree trimming)	Disposal of unusable overhead facilities	Susceptibility to flooding, storm surges
	Beauty in customer's eye (i.e. fewer structures impacting sidewalks)	Easements for back to front line placement	Reduced flexibility for future system expansions
			Reduced life expectancy
			Higher cost for new bandwidth, voltage, etc.

Decision making Model



Underground installations from the 1970s and 1980s have not demonstrated lower maintenance. The performance is attributable both to materials and water intrusion. A number of studies have documented this performance issue and the significant cost to either maintain or replace these lines. CableCURETM, a proprietary product owned by an InfrastruX company, is an example of a product specifically designed to address the water intrusion issue. Both the material performance and water intrusion issue are resolved today and, barring some significant unforeseen condition, the placement of distribution lines underground should prove relatively problem free and justify the financial decision to place these lines underground.

In Summary

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Utility Reactions (1 of 3)

- **Pacific Gas & Electric**
  - 30 miles / year conversion
- **FPL**
  - Residential customers schedule, pay for service drop conversion
  - More than a third of distribution lines are underground, despite calling cost "exorbitant"
- **Dominion**
  - Collects $1/month (residential) and up to $5/month (business) to escrow and use for overhead to underground conversion
- **ComEd: West Loop Project**
  - 8 years and $350+ million investment to convert Chicago to network model
  - 345-kV lines are backbone, significant stretches are underground

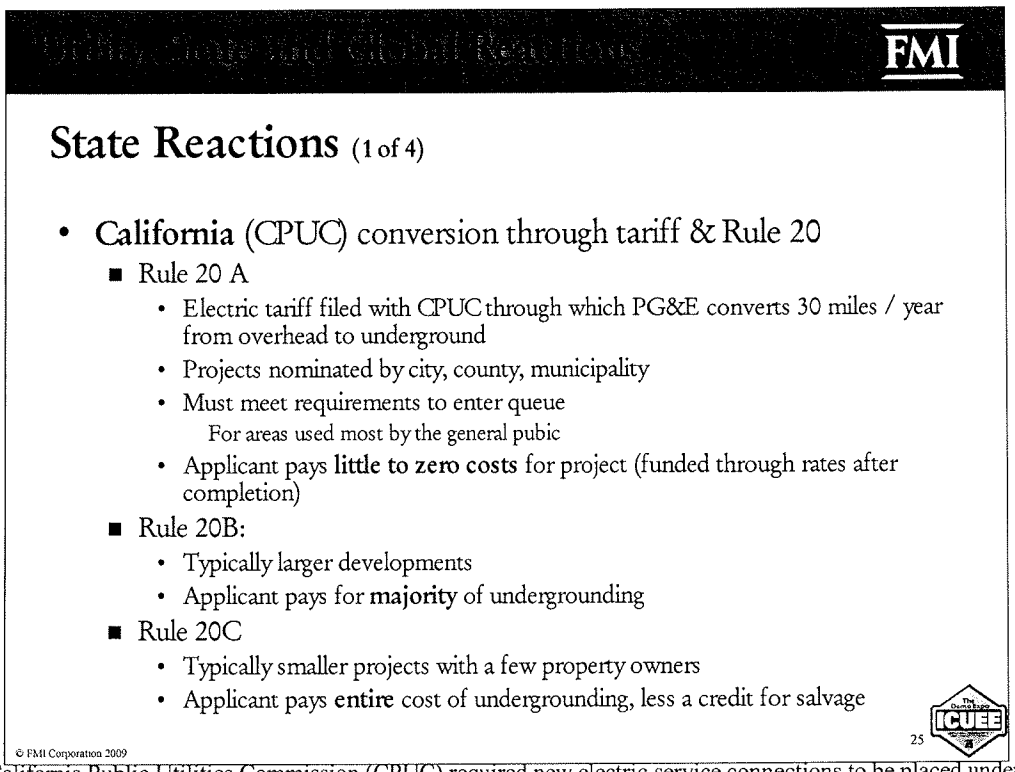
What are big players doing?

Utility Reactions (2 of 3)

- Edmond Electric
  - Municipal-owned and in "Tornado Alley"
  - City council approved a revised budget line item for overhead to underground conversion covering five years
- Ameren UE
  - Selective undergrounding as part of existing reliability improvement program
- SDG&E & SCE
  - Customer/Developer pays for trenching & backfilling utility pays remaining costs.
- Atlantic City Electric
  - Customer/Developer pays $802.74 + $4.35 per front foot for each home and utility pays remaining costs.

Utility Reactions (3 of 3)

- **Cobb Electric Membership**
  - Customer/developer pays $260 per customer. Utility pays remaining costs.
- **Green Mountain Power**
  - Customer/Developer pays for trenching & backfilling and utility pays remaining costs
- **Nantucket Electric**
  - The utility pays up to $837.85 and customer pays the remaining costs
- **ConEd**
  - The utility charges the customer the differential in charges for equivalent overhead construction
- **Mississippi Power**
  - Developer pays the cost differential above what it would cost to install overhead lines



Beginning in 1967, the California Public Utilities Commission (CPUC) required new electric service connections to be placed underground and funded a gradual program to convert existing overhead lines, including concomitant communication lines, to underground service.

The CPUC's Rule 20 sets policies and procedures for the conversion of overhead power lines and other equipment to underground facilities. Under Rule 20, undergrounding projects are financed by utility rate money, combined rate funds and local tax proceeds, or private funds, depending on whether Rule 20A, Rule 20B or Rule 20C provisions apply.

Rule 20A projects are paid for by all electric utility ratepayers, not just those who live in locations where facilities will be undergrounded. City and county governments choose these projects, using a process that includes public participation. To qualify for full funding through utility rate proceeds, projects must produce a benefit to the general public, not just customers in the affected area, by satisfying one or more of these criteria:

The location has an unusually heavy concentration of overhead facilities.

The location is heavily traveled.

The location qualifies as an arterial or major collector road in a local government's general plan

The overhead equipment must be located within or pass through a civic, recreational or scenic area.

Using CPUC formulas, the utility allocates rate funds to communities for undergrounding based onprevious allocations, the ratio of customers served by overhead facilities to all the customers in the community, and the fraction that customers in the community represent of all utility customers. Local governments use these formulas to project allocations, which allows them to prioritize projects and develop project schedules. Because funds are limited, local governments sometimes must wait and accumulate their allocations before starting an undergrounding project.

If an area is not eligible for Rule 20A or if local government cannot or chooses not to rely on the Rule 20A allocation process, Rule 20B allows rate funds to subsidize an undergrounding project. The subsidy includes an amount equal to the cost of an equivalent overhead electric system, usually about 20% of the total undergrounding project cost, plus the cost of removing the existing overhead system, which can be 5% to 20% of the total cost. The remaining cost is funded by local governments or through neighborhood special assessment districts. Rule 20B projects must be sited along public streets or roads, or other locations mutually agreed to by the applicant organization and the utility.

Rule 20C enables property owners to pay for undergrounding electric lines and equipment if neither Rule 20A nor 20B applies.

After two years of study and development, the CPUC in June 2002 approved the first phase of changes designed to improve the scheduling, designing and construction of undergrounding projects under Rule 20. The new Rule 20 is intended to increase local government flexibility by:Adding "arterial" and "collector" to the types of location that qualify for Rule 20A. Allowing up to five years of mortgaging, or "saving up," allocations levels by local governments, provided adequate utility capital and personnel are available.

Allowing a local governments to use allocation levels as "seed money," a value that the local government can borrow against to perform initial engineering and design studies for Rule 20B projects. In the event the project is not approved within 2 ½ years after planning stages are complete, the city or county has 90 days to reimburse the seed money. Providing the cost of removing overhead facilities will be paid by the utility.

The new Rule 20 is also intended to improve coordination and communications between utilities, local governments and residents. At a local government's request, the utility will meet with government officials and residents to provide status on any Rule 20 project that has been approved. Each utility is required to have a single point of contact to answer questions on Rule 20 for the general public.

State Reactions (2 of 4)

- Colorado
  - Colorado Springs developed plan to bury or relocate overhead utility lines
- Delaware
  - New Castel developed plan to bury or relocate overhead utility lines
- Florida (FPSC) studied cost to convert investor-owned overhead T&D system
  - Transmission: $51.8 billion, 14,383 miles
    - Cost recovery over 10 year period would require 49.7% increase in rates
  - Distribution: $94.5 billion
    - Cost recovery over 10 year period would require 81.8% increase in rates or 141.5% increase if just spread over residential customers
    - Cost to convert both overheads and feeders

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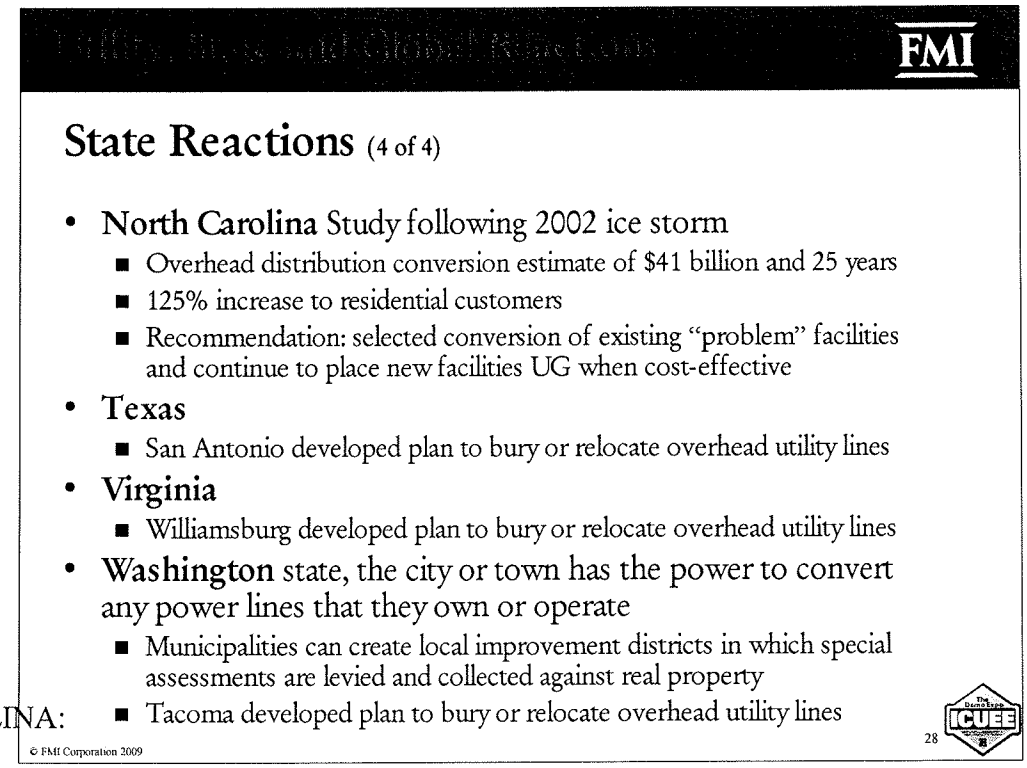
State Reactions (3 of 4)

- **Hawaii (HPUC)** is evaluating two options:
  1. Require utilities to set aside funds that counties could tap into
  2. Establish fund by HPUC from variety of sources including income tax, utility bills, voluntary contributions, legislative appropriations, & others
- **Maryland**
  - Frederick developed plan to bury or relocate overhead utility lines
- **New York**
  - Saratoga Springs developed plan to bury or relocate overhead utility lines
- **New Mexico** Public Regulation Commission approved tariff in 2002
  - Extra cost for undergrounding must be paid by municipality or through additional line item on monthly utility bills



NORTH CAROLINA:

After a major ice storm caused unprecedented power outages to over two million electric utility customers, the Public Staff of the North Carolina Utilities Commission investigated the feasibility of replacing the existing overhead distribution lines of the state's three investor-owned utilities (Utilities) with underground lines. In its report, released in 2003, the Public Staff concluded that replacement would be prohibitively expensive, costing approximately $41 billion, nearly six times the net book value of the Utilities' current distribution assets. In addition, it would take approximately 25 years to complete the replacement.

The ultimate impact of the capital costs alone on an average residential customer's monthly electric bill would be an increase of more than 125%. Rates would also be impacted by the higher operating and maintenance costs associated with direct-buried underground systems, particularly in urban areas, where underground conductors are four times more costly to maintain than overhead facilities. In addition to the impact on the cost of providing utility service, conversion to underground would impose costs on individual customers, municipalities, and other utilities. While these costs have not been quantified, they could be significant, the Public Staff concluded.

Although underground systems are more reliable than overhead systems under normal weather conditions, they are not impervious to damage (for example, dig-ins and water intrusion). The repair time for underground systems is almost 60% longer than for overhead systems when damage does occur. Consequently, the Public Staff did not recommend that the Utilities undertake the wholesale conversion of their overhead distribution systems to underground.

The Public Staff recommended that each of the Utilities (1) identify the overhead facilities in each region it serves that repeatedly experience reliability problems based on measures such as the number of outages or number of customer hours out of service, (2) determine whether conversion to underground is a cost-effective option for improving the reliability of those facilities, and, if so, (3) develop a plan for converting those facilities to underground in an orderly and efficient manner, taking into account the outage histories and the impact on service reliability.

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Global Reaction

- **Belgium**
  - Almost all the network at 36kV and below is underground
  - Virtual ban on overhead power lines since 1992 in urban areas
  - In non-urban areas, overhead lines must use existing right-of-ways
- **France**
  - 1997 agreement whereby EDF would bury 20 percent of all new high voltage lines
- **Italy**
  - Undersea cabling to reach islands
- **United Kingdom**
  - Similar to Italy, undersea cables link the British Isles with each other and France

Resources

- *Lenox Underground Transmission Lab Operational, Pressurization Project Delivering First Results* by Electric Power Research Institute (EPRI) (December 7, 2005)
- *Project Opportunity: Advanced Underground Transmission Construction* by Electric Power Research Institute (EPRI) (November 18, 2005)
- *A Review of Electric Utility Undergrounding Policies and Practices* by Navigant Consulting (March 8, 2005)
- *Reducing Windstorm Damage to Property and Electrical Utilities* by Oregon Emergency Management and the Federal Emergency Management Agency (July 2002)
- *Out of Sight, Out of Mind?* By Brad Johnson, Independent Energy Advisor (January 2004)
- *The High Price of Aesthetics* by Brad Johnson (May/June 2004)
- *The Feasibility of Placing Electric Distribution Facilities Underground by* Public Staff, North Carolina Utilities Commission (November 2003)
- *Placement of Utility Distribution Lines Underground* by Virginia State Corporation Commission (January 7, 2005)
- *Task Force to Study Moving Overhead Utility Lines Underground, Final Report* by Task Force (December 30, 2003)
- *A Citizen's Initiative: Evaluating the Benefits of Underground Utility Distribution, Final Report* by Suresh K. Khator, Ph.D., P.E., George C. Moore, P.E., Vinit G. Dixit, University of South Florida College of Engineering (July 31, 1999)
- *Undergrounding Public Utility Lines* by Pamela Martin, Researcher, Legislative Reference Bureau, State Capitol, Honolulu, Hawaii (December 1999)
- *Putting Cables Underground by* Putting Cables Underground Working Group for the Commonwealth of Australia (November 24, 1998)
- *Overview of the Potential for Undergrounding the Electricity Networks in Europe, Prepared for the DG TREN/European Commission* by ICF Consulting Ltd. (February 28, 2003)
- *After Hurricanes, A Renewed Interest in Underground Power Lines* by Scripps Howard News Service (December 5, 2005)
- *Funding Utility Relocation* by Scenic America (Date Unknown)
- *Kailua Undergrounding Project gets a big boost from new HECO Cost Sharing Policy* by Don Bremner, Kailua Vision Group (December 8, 2000)
- *Preliminary Analysis of Placing Investor-Owned Electric Utility Transmission and Distribution Facilities Underground in Florida* by Florida Public Service Commission (March 2005)
- *FPSC Order No. 23126-A*, Docket No. 890833-EU, Investigation into the cost-effectiveness of undergrounding electric utility lines. by Florida Public Service Commission (July 16, 1990)
- *Report on Cost-Effectiveness of Underground Electric Distribution Facilities* by Florida Public Service Commission (December 1991)
- *FPSC Order No. PSC-92-0975-FOF-EU*, Adoption of Rule 25-6.0115, F.A.C., Underground Electric Facility Costs, and Withdrawal of Amendments to Rule 25-6.078, F.A.C., Schedule of Charges by Florida Public Service Commission (September 10, 1992)

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Discussion/Questions

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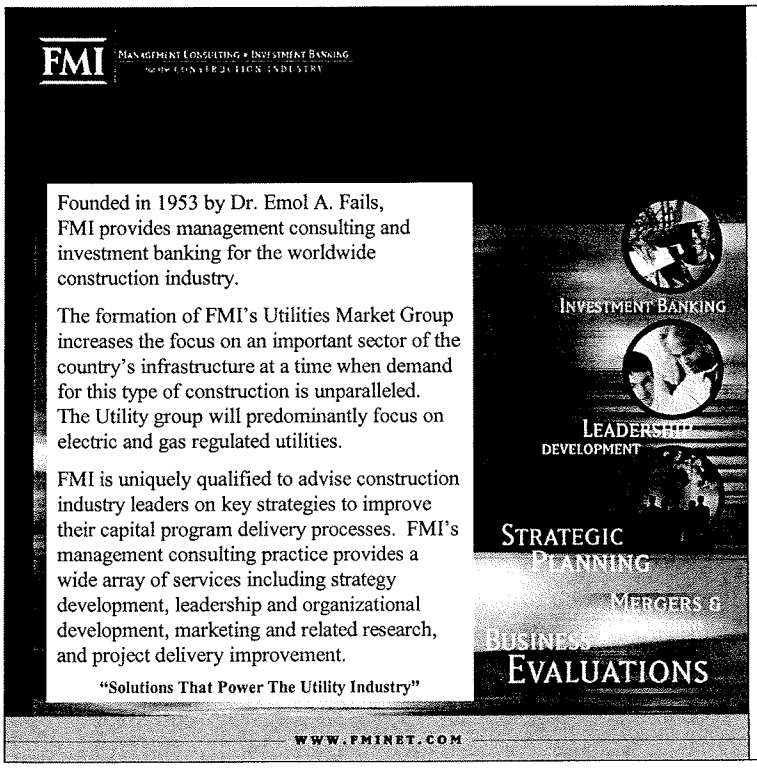
Thank You!



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