

Electric Transmission
Technical and Policy Issues

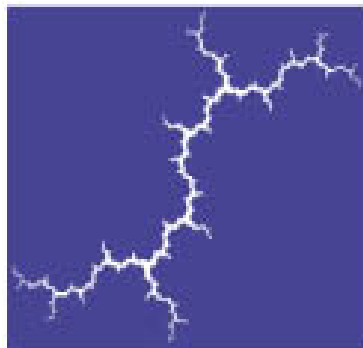
Bruce Biewald

National Association of State Utility

Consumer Advocates

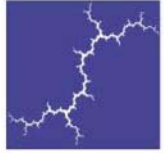
Austin, Texas

June 14, 2004



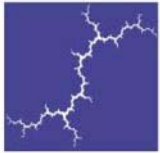
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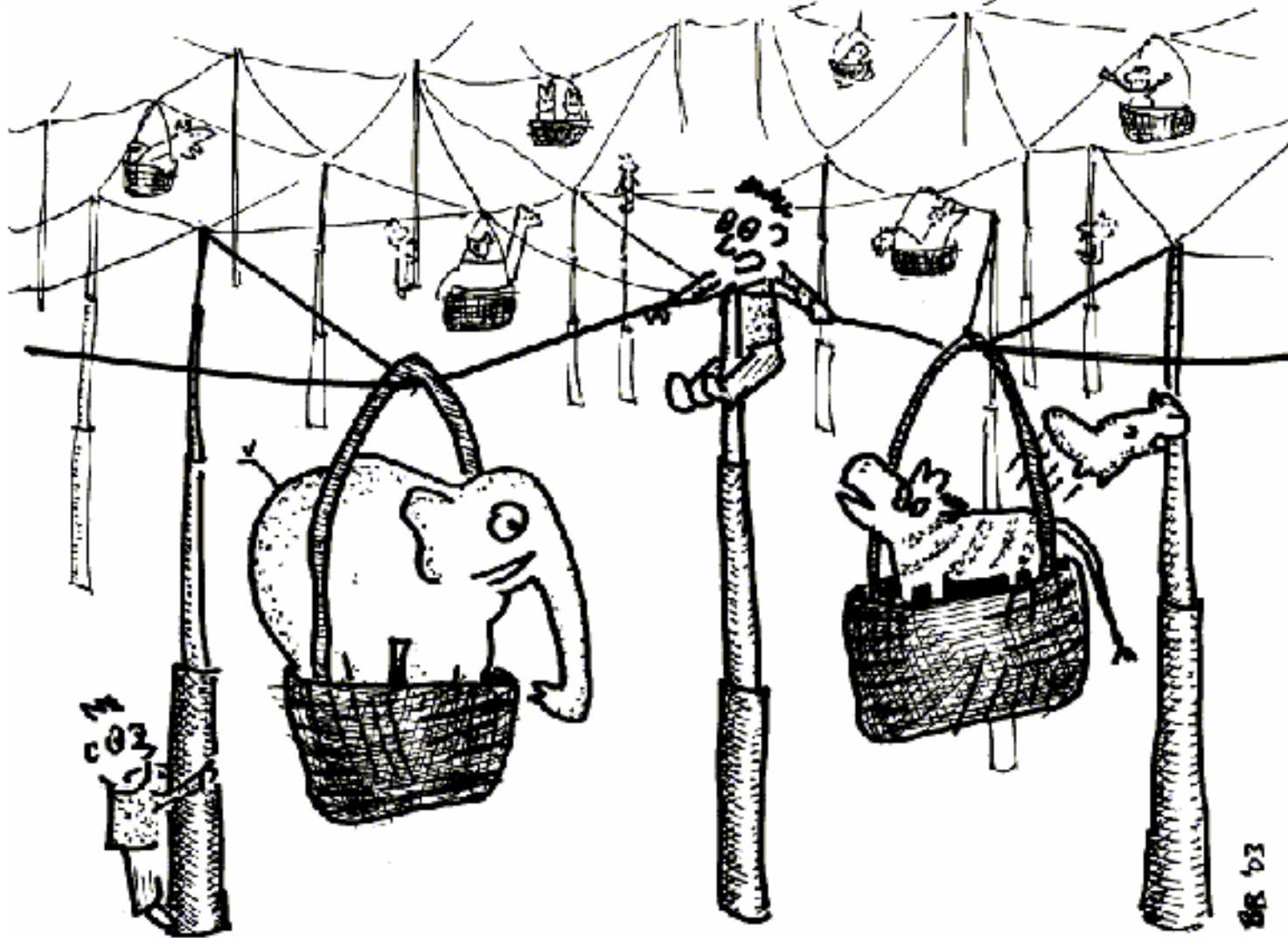


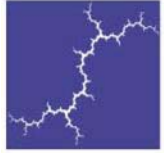
Transmission Issues

- Reliability (the Blackout)
- Costs
- Environmental Issues
- Ratemaking
- Sitting
- Planning
- Art



Electric Grid as a Circus Act





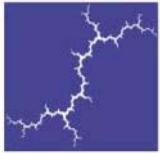
Reactions to the Blackout

- Calls for “Massive Investment”
- Cost recovery
- Tree trimming
- Information and operations
- Mandatory and enforceable reliability standards

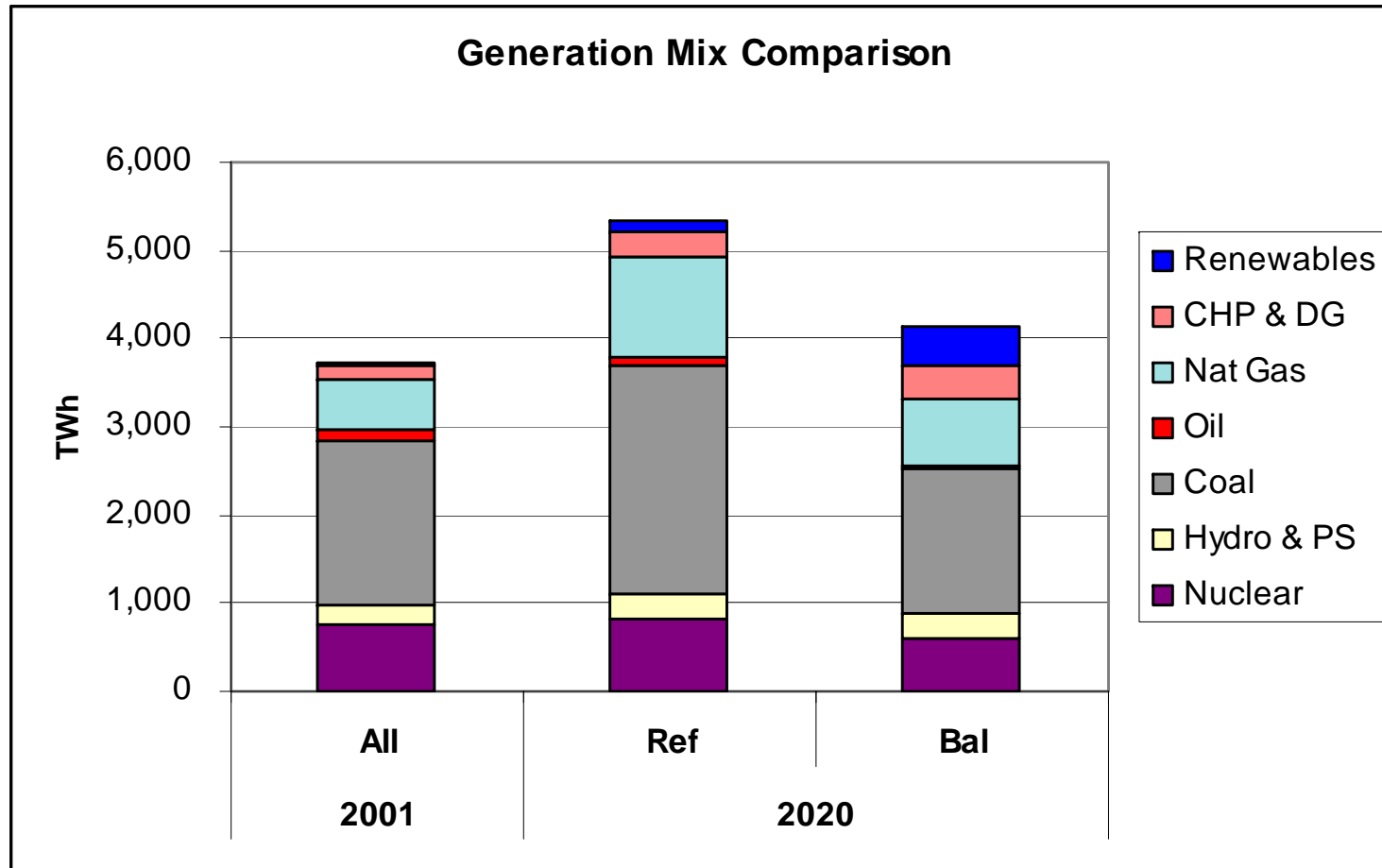


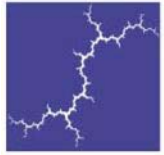
US Total Electricity Costs

Reference Case	Costs (billions of 2003 dollars)				% Increase
Service Category	2001	2005	2015	2025	2001-25
Generation	166	161	197	240	44.6%
Transmission	19	21	30	36	90.9%
Distribution	70	74	82	91	30.5%
Total Costs	255	256	308	367	44.2%



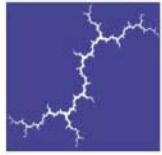
A Balanced Electricity Future





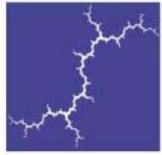
Summary of US Balanced Future

- Aggressive efficiency, renewables and combined heat and power.
- Retire coal and nuclear plants in mid to late 40s.
- Balanced Case CO₂ emissions in 2025 are 3% below 1990 emissions (instead of 82% increase in Reference Case).
- Balanced case annual electricity cost savings growing to \$36 billion (2003 constant dollars) in 2025.



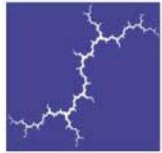
Transmission Pricing Policy

- FERC's January 2003 proposed ROE adders for transmission:
 - 50 basis points on all transmission for joining RTO (to 2012)
 - 150 basis points on all transmission for creating an ITC (to 2022)
 - 100 basis points on new transmission built according to an RTO approved plan
- Not yet issued.
- Case specific activities (e.g., PJM order, New England)



New England RTO Proposal

- ISO-NE and TO's proposal:
 - Base ROE of 12.8% (current ROEs 10.5% to 11.75%)
 - 50 basis points on all transmission for joining RTO (to 2012)
 - Might request ITC bonus in the future
 - 100 basis points on new transmission built according to an RTO approved plan
- FERC March 24, 2003 order appoints settlement judge to resolve ROE dispute.
- Now slated for hearing (starting December 2004?)
- Northeast Utilities case at FERC



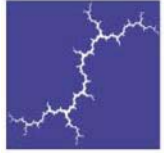
Costs of NE RTO Proposal

Table 3: Transmission access charge impacts for New England investor-owned utilities from proposed ROE adders assuming annual transmission investments of \$200M in 2004.

	Annual Average Profit Increase (million 2004 \$)	Cumulative (million 2004 \$)
1. RTO Participation	9.1	82
2. ITC divestiture	29.1	553
3. New Transmission	11.2	213
Total *	44.7	849

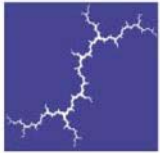
* Total Average is based on cumulative total divided by ITC period.

From Synapse's September 29, 2003 report for MA AG, CT OCC, ME OPA, and NH OCA

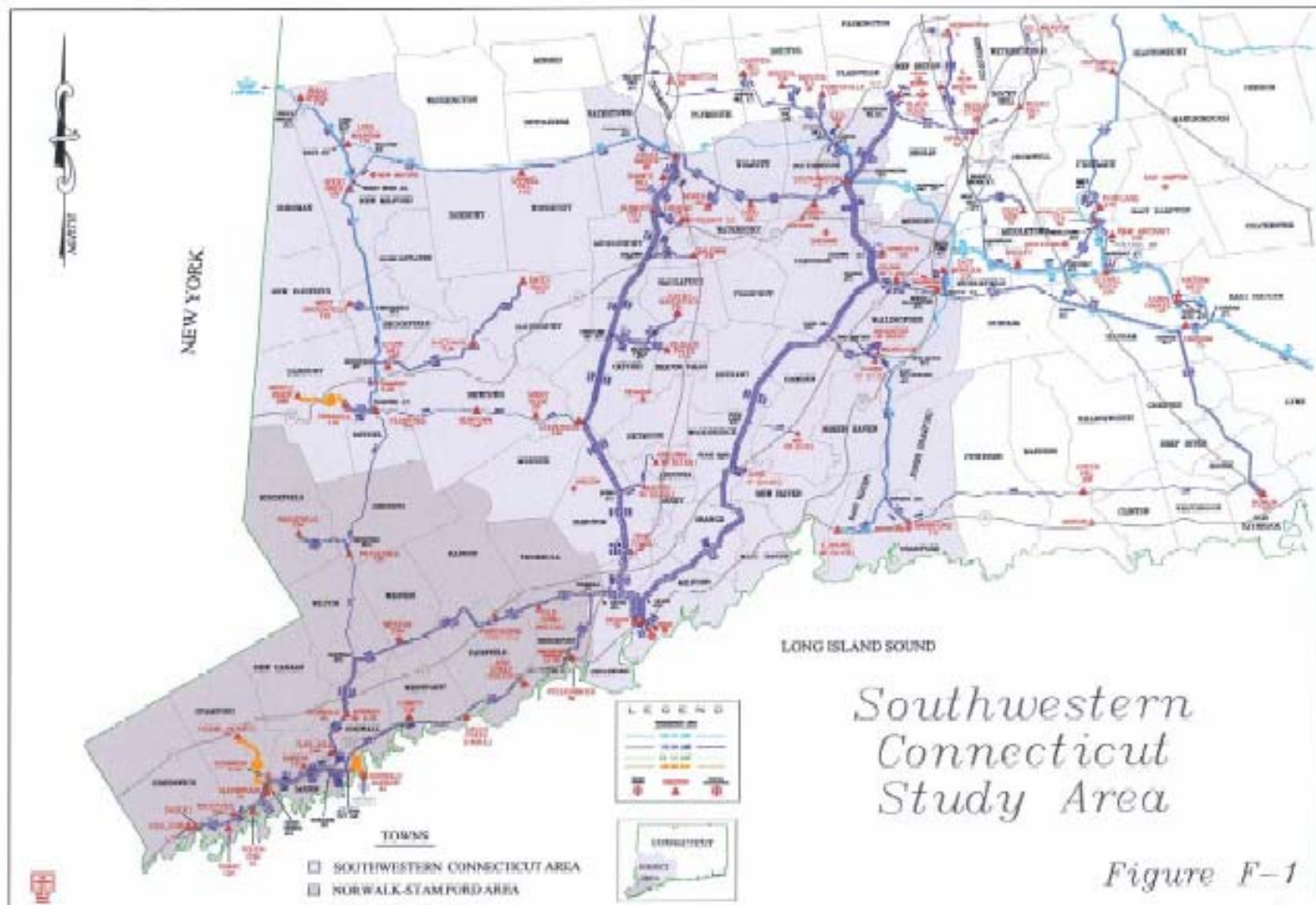


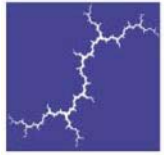
Issues with Bonus ROE

- ROE should compensate for *actual* risk
- Transmission tariff formula rate
- Incentive for decisions already made
- Just and reasonable?



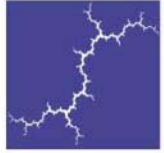
Transmission in SW Connecticut





Transmission Planning in NE

- RTEP since 2000
- Looks about 10 years forward
- Assessment – scenarios, modeling
- Identify short-term and long-term concerns
- Solutions emphasize market forces, with transmission as the backstop.
- If market solutions don't appear then transmission alternative is developed.



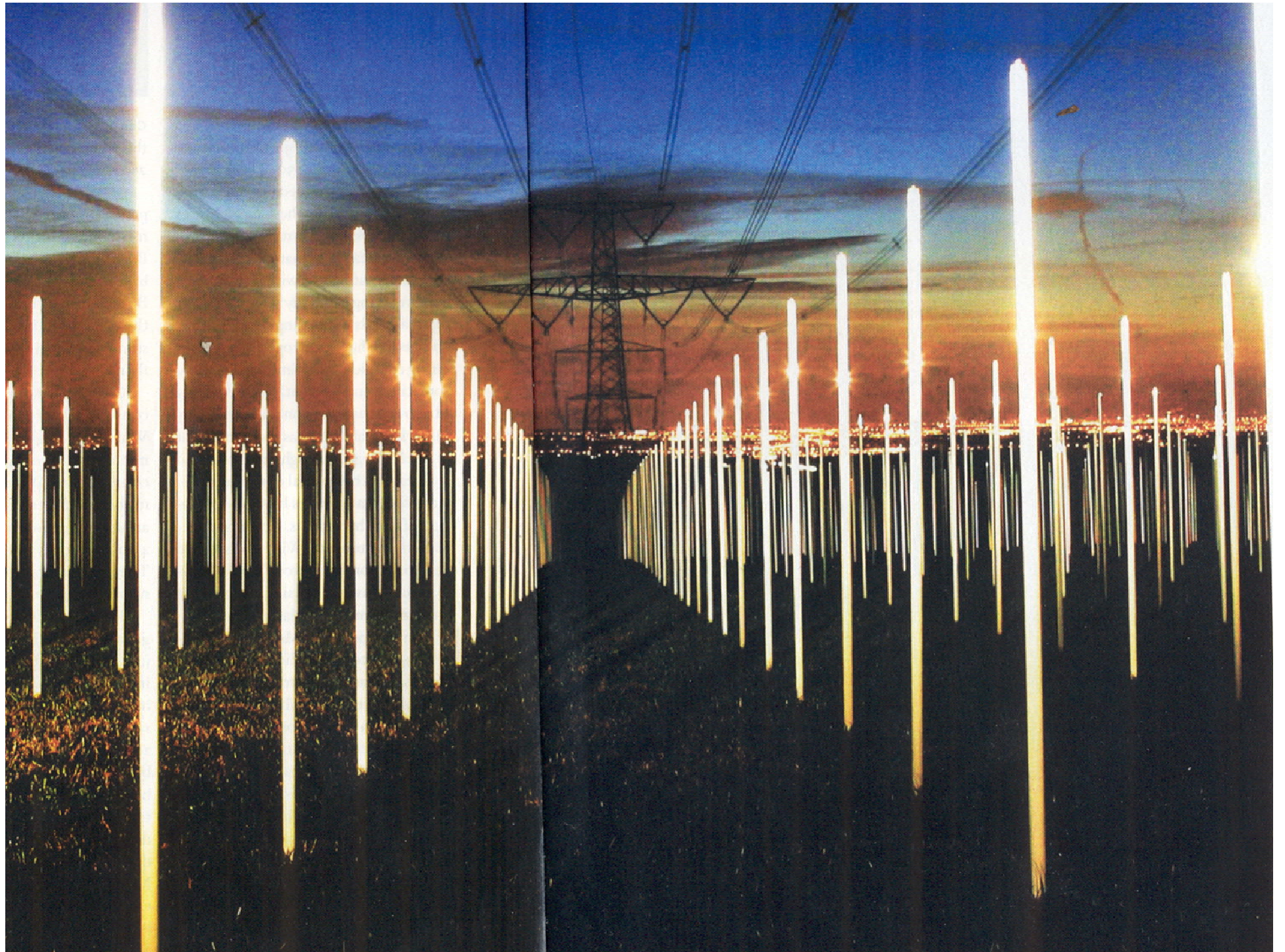
Comprehensive System Planning

- Identify short-term and long-term concerns
- Look at solutions including:
 - Reductions in load (efficiency, demand response, on-site generation)
 - New generation (central and distributed)
 - Transmission enhancements (modifications such as PARs and capacitors, upgrades to existing lines, new lines)



Transmission Paradigms

- Build transmission to allow and encourage competition from remote generation with the hope that over the long term customers will receive a net benefit.
- Build transmission as needed for reliability; use bid caps (or other mechanisms) to address local market power.





References

- *The 2003 Blackout: Solutions that Won't Cost a Fortune*, Electricity Journal, Nov 2003.
- *A Responsible Electricity Future: An Efficient, Cleaner, and Balanced Scenario for the US Electricity System*, June 2004.
- *FERC's Transmission Pricing Policy: New England Cost Impacts*, September 2003.
- *Smithsonian*, May 2004.