

REDUCING SUPPLY SIDE UTILITY COSTS

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Our Approach to Sustainability



CATV industry is under pressure

**Increasing
Cash Flow and
Subscribers**

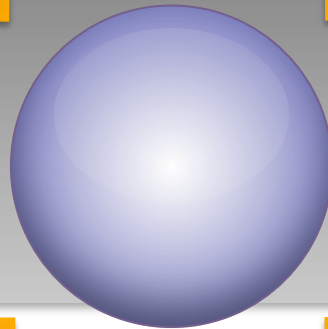
**Cost of
Financing
Capital Projects**

**Rising Energy
Costs**

**Unknown
costs?**

**Media and Investor
Scrutiny of Environmental
Practices**

**New Technology
Demands**



**US cable television companies
annually spend over
\$1,000,000,000
on energy*.**

(between \$5 and \$15 per home passed)

*Coppervale estimate based on project experience

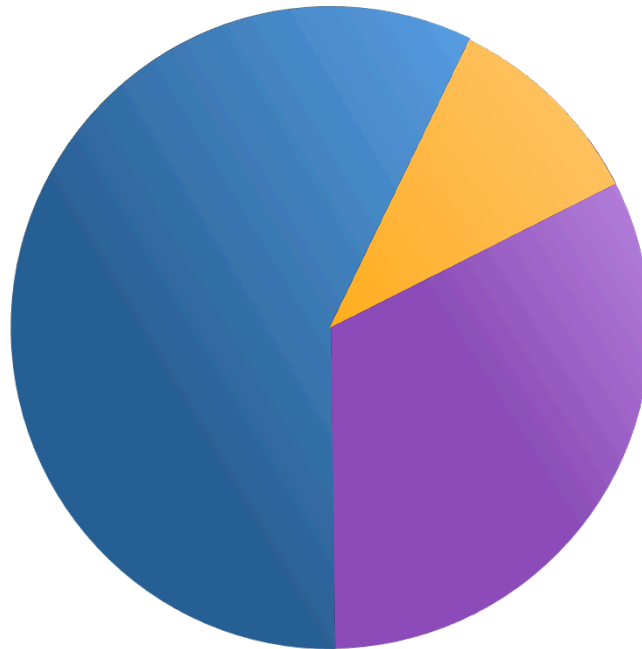


Annual Electricity Spend

Typical MSO

60%

Outside Plant



10%

Offices and
Warehouses

30%

Critical Facilities

A photograph of an industrial facility with several tall smokestacks emitting thick plumes of white and grey smoke into a clear blue sky. The smokestacks are dark, and the smoke is dense and billowing. The overall scene suggests a large-scale industrial operation.

**Electricity is one of the largest
unmanaged costs for
cable companies today.**

Utility Relationships

- Traditional utility profits under pressure
 - Threat (or reality) of deregulation
 - Cost increases
 - Significant consolidation ongoing
- Utility attitudes vary significantly
 - Corporate culture
 - Regulatory environment
- Many utilities not aware of MSO account significance
 - Distributed load
- MSO load very complementary for utilities
 - 90% of MSO load is base load

HFC Networks are Complex and Capital-intensive Structures

- Thousands of accounts and connection points (primarily OSP power supplies)
- Serviced by multiple utilities across state and regulatory boundaries
- Plant is constantly evolving to meet business and customer demands
- MSO's generally do not audit utility bills or monitor rate changes
- Plant and facility personnel do not have access to electricity usage or spend data

Utilities in the Drivers Seat

- Many utilities lack tariffs designed to meet MSO's unique operational needs
 - MSO load very large (MW) in aggregate
 - OSP loads charged at worst tariff due to distributed nature of load
 - Many unmetered power supplies charged at a premium to load
- Billing Errors
 - Account transfers associated with acquisitions
 - Non-existent unmetered accounts
- Tariffs not optimized
 - Many choices available
 - Both tariff choices and loads are dynamic



Knowledge is Power

Conduct a Comprehensive Utility Audit and Review

- **Benefits:**
 - Baselines the plant's energy usage
 - Instant savings from identified billing errors and tariff optimization (up to 3 yrs)
 - Plant optimization (removal of under-loaded power supplies) for energy efficiency
 - Equipment anomaly discovery
 - Ability to resolve plant issues (e.g. stranded hardware)
- **Procure and negotiate best tariffs and rates from an informed position**
- **Utility costs are dynamic, influenced by powering architecture, tariff structure and regulatory environment. Consequently, ongoing evaluation is a requirement for continued operation at lowest cost**

Tariff Selection - Basic

- Outside Plant
 - Base load, evaluate time of use tariffs
 - Where applicable, leverage bulk of distributed load
 - Evaluate ancillary tariffs for synergies
- Critical Facilities
 - Evaluate utilization (average to peak kW)
 - Based on demand structure, evaluate time of use tariffs
 - Review served vs. installed capacity
 - Periodic review required as load distribution changes
- Administrative Facilities
 - Avoid time of use charges
 - Investigate demand management opportunities

Utility Savings Opportunities

Tariff Benefits

Savings range from 2.5% to 5% of spending, depending on the utility environment and system characteristics

Errors

Savings range from 0.5% to 2% of spending, depending on system characteristics

Deregulated Markets

10% or more savings, where applicable
Approach plant wide, implement overall energy strategy

Negotiations

Based on regulatory climate and utility attitude, negotiations are possible regarding beneficial OSP tariff structure

Utility Savings Identified

MSOs recently audited by Coppervale

	MSO 1	MSO 2	MSO 3	MSO 4
Utility and Tariff Based Savings	\$130,000	\$222,000	\$240,000	\$900,000
Errors	-	\$17,000	\$44,000	\$500,000
Open Market Savings	-	-	\$750,000	-
Possible Utility Negotiation Upside	several \$100k	several \$100k	-	-

**US cable television companies collectively
can realize annual savings of
\$60,000,000 to \$80,000,000
without any capital investment**

Mind Shift:

**Utility costs are not a fixed
business expense.**

Ongoing Utility Cost Management

- Once audit is complete and savings recovered, the real work begins
- Ongoing management is required because the financial rewards are significant
- Monitor utility relationship
- Use information proactively to procure best rates
- Hedge against energy price fluctuations

Education, Monitoring, Measuring

- Track energy spend against benchmark to measure progress against goals
- Train engineering, operations and procurement staff to use energy spend data in design and purchasing decisions
- Data useful for holistic capital investment strategy and public reporting of energy reduction and environmental progress

Thank you!



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