

# Asset Management for Energy Supply

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# Discussion Items

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- The Business Opportunity
  - Hard Money Benefits
  - Asset Management for Energy Toolbox
  - Process for Creating Value
- AME Services
  - Commodity Acquisition Management
  - Utility Management
  - Energy Tracking
- Next Steps
  - Define Client Objectives
  - Verify the Opportunity
  - Commit to Move Forward





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# The Opportunity

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Set Goals > Establish Benchmarks>Measure Progress>Support Mission> Continuous Improvement

- Goal: Minimize Energy and Operating Costs
  - Expert system = better information and decision support
  - **Measure** energy costs, consumption and efficiency
  - **Improve** energy purchasing strategies and enhance supply chain management
  - **Efficiency** through integrated budget, procurement, and operations functions

The tool: Asset Management for Energy (AME)





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# Operational Excellence Philosophy

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- ***Well informed personnel make better decisions***
  - In a “do more with less” environment people need support systems to reduce the time needed for each issue
  - \$\$ Savings - by linking energy usage and costs, managers can see the financial impact of various energy strategies
    - Ø Take action to minimize the volatility of the energy markets
    - Ø Anticipate budget impacts
    - Ø Reduce future costs using expert techniques
    - Ø Enhance revenue by charging tenants or programs for energy
- ***Managing energy for multiple facilities is a complex task!***
- ***Energy budgets are “assets” that can be managed!***



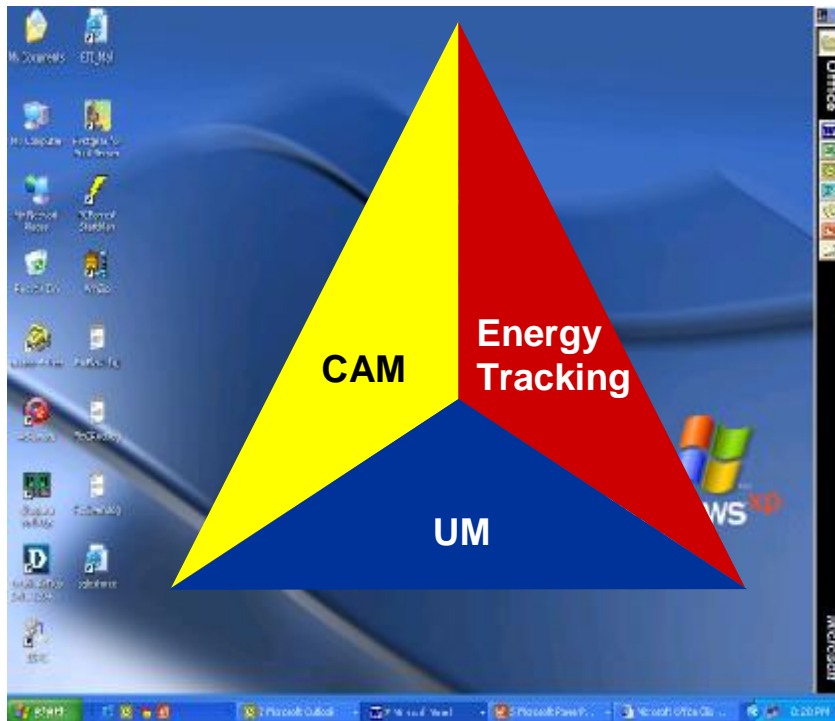


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# Asset Management for Energy



- A Decision Support Toolkit
  - Commodity Acquisition Management
    - Active management by subject matter experts
    - Risk mitigation, reliability, and budget stability
    - Lower cost procurements
    - Contract and tariff analysis
  - Utility Management
    - Energy and facilities database to improve operations
    - Continuous benchmarking and performance measurement
    - Consolidate all pertinent information in one place
  - Energy Tracking
    - Real time data to support procurement strategies
    - Continuous monitoring and operational improvement





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## What's different about AME?

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- Energy users gain knowledge to obtain the upper hand
- Simple, straightforward, easy to use
- Available to multiple users, anytime, anywhere
- Incorporates the know-how of experienced energy managers
- Link budgets, energy markets and operations decisions
- Enhances existing networks, building systems, and management processes
- Independent of utility companies and energy suppliers





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# Management Benefits

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- Avoided cost of energy purchases
- Allows for more accurate planning and budgeting
- Permits real time energy procurement
- Increases coordination between purchasing and operations
- Streamlines all facilities and energy reporting
- Supports benchmarking and key performance metrics
- Moves from “putting out fires” to anticipating problems
- Possible outsource of support services
- Takes advantage of deregulating energy markets
- Answers critical management questions





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# Management Questions

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- Has price volatility affected budgeting process?
- Can avoided energy costs be reallocated to other uses?
- Are you managing or procuring energy in real time now?
- How does coordination between purchasing, bill payment, and operations work in your organization?
- Are there benchmarks for facility performance?
- What has been done to take advantage of deregulation?
- What challenges and issues are you currently facing can be addressed through energy asset management?

*The following slides provide details about the AME process.*



# Commodity Acquisition Management

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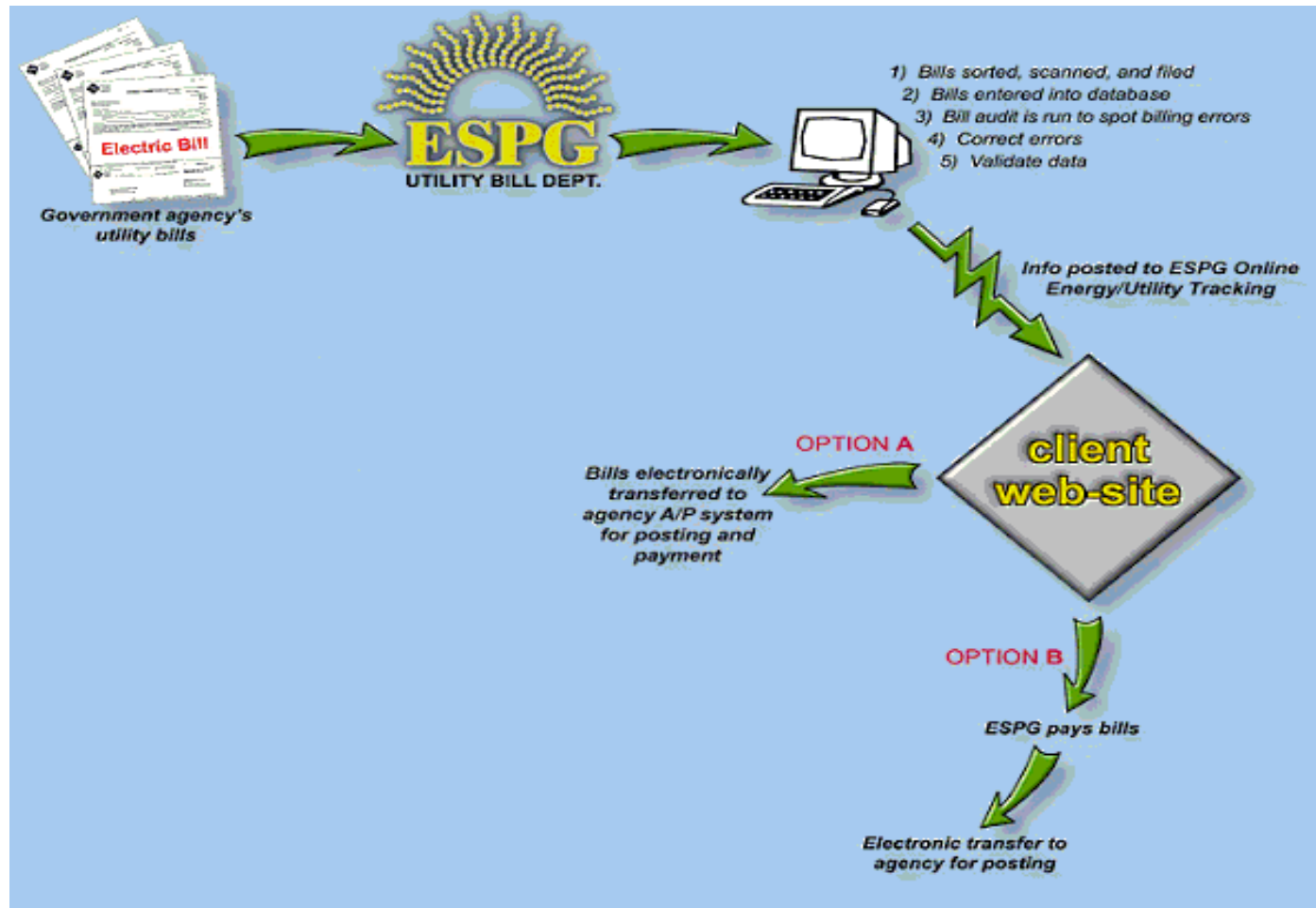
- Energy purchasing techniques and supply chain management by subject matter experts
  - Procurement strategies
  - Competitive supplier selection
  - Risk mitigation
- Complete commodity management
  - Fuel utilization strategies
  - Contract review and analysis
  - Service reliability
  - Budget and price stability
  - Tariff analysis

# Utility Management

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- Track, monitor and analyze energy cost and consumption
  - Facility reports and “out of tolerance” notices
  - Identify trends and savings opportunities
  - Secure web-based access
- Streamline processing of utility bills
  - Reconcile, audit and archive invoices
  - Budget management
  - Authorize payment and link to G/L
  - Avoid late charges and duplication of effort
- Revenue enhancement
  - Supports tenant billing and cost allocation
  - Capable of sub-metering

# Typical UM Process

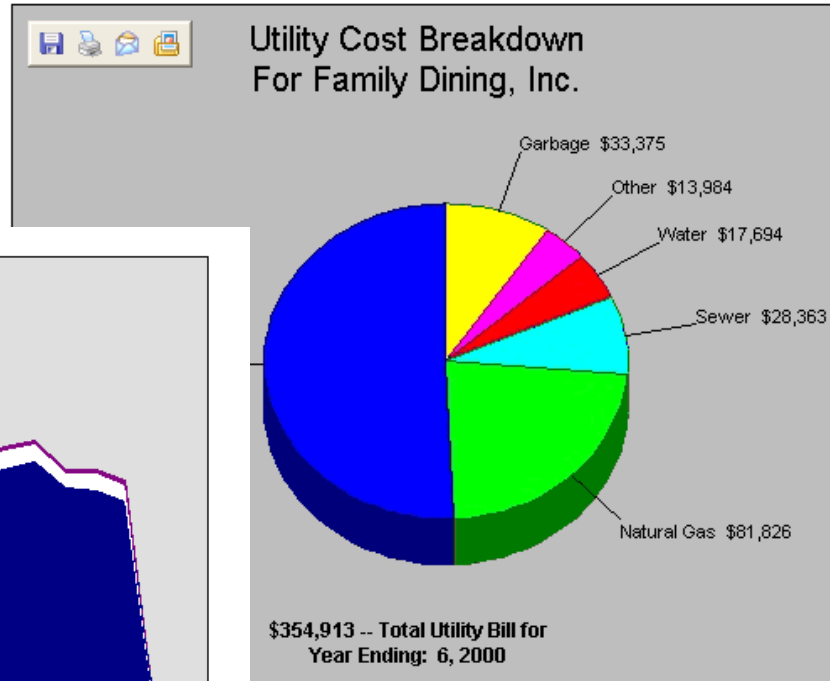
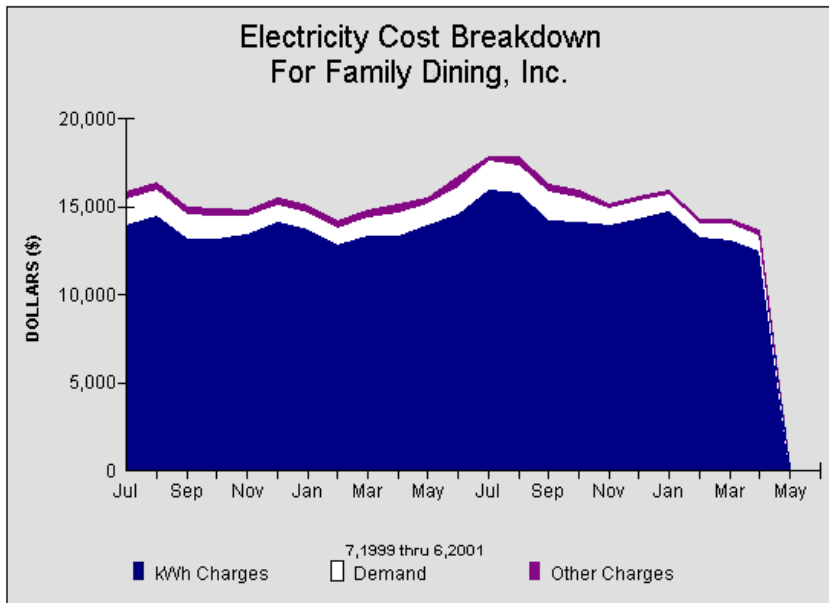


# Utility Management

## Family Dining, Inc. Site Energy Statistics Comparison -- Year Ending 03/2001

Site	SqFt	Customers	Electricity (kWh)	Total Elec Cost	Total Elec Cost /Customer	Electricity kWh /Customer	Natural Gas (Therms)	Natural Gas Cost	Natural Gas Cost /Customer	Natural Gas Therms /Customer
Carson City, NV	6,250	132,084	371,350	\$24,577	\$0.19	2.811	20,235	\$10,598	\$0.08	0.153
Sparks, NV	6,500	134,484	371,350	\$23,310	\$0.17	2.761	15,176	\$7,984	\$0.06	0.113
Kent, WA	5,200	131,795	368,786	\$21,224	\$0.16	2.798	15,083	\$7,911	\$0.06	0.114
Auburn, WA	5,500	130,815	368,786	\$20,622	\$0.16	2.819	9,050	\$4,747	\$0.04	0.069
Shelton, WA	5,205	246,940	332,199	\$20,283	\$0.08	1.346	18,521	\$10,085	\$0.04	0.075
Bremerton, WA	4,700	246,081	317,679	\$19,765	\$0.08	1.291	27,056	\$15,104	\$0.06	0.110
Mandan, ND	5,500	153,372	294,339	\$12,921	\$0.08	1.919	539	\$259	\$0.00	0.004
Libby, MT	4,980	142,231	290,017	\$12,793	\$0.09	2.039	17,325	\$6,196	\$0.04	0.122
Centralia, WA	5,105	125,503	299,328	\$11,476	\$0.09	2.385	17,992	\$9,969	\$0.08	0.143
Grapeview, WA	5,760	139,605	266,520	\$11,043	\$0.08	1.909	20,159	\$11,275	\$0.08	0.144
Bismarck, ND	4,800	140,803	224,943	\$9,152	\$0.06	1.598	6,202	\$3,566	\$0.03	0.044
<b>Company Totals:</b>	<b>59,500</b>	<b>1,723,713</b>	<b>3,505,297</b>	<b>\$187,166</b>	<b>\$0.11</b>	<b>2.034</b>	<b>167,338</b>	<b>\$87,693</b>	<b>\$0.05</b>	<b>0.097</b>

# Utility Management

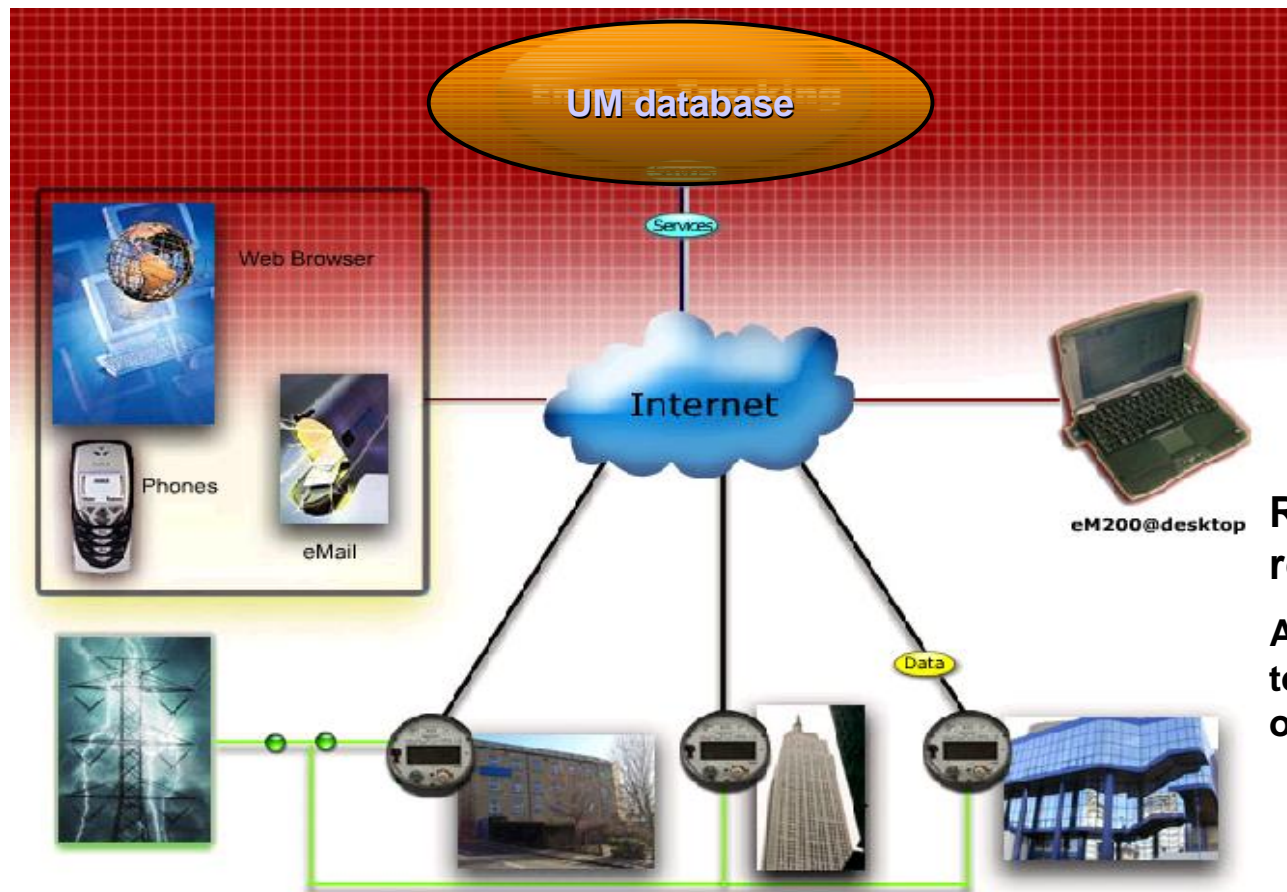


# Energy Tracking

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- A complete arsenal of analysis tools for load profiling, load curtailment management, energy usage alarms, usage comparisons
- **Metering:** State of the art IP revenue grade utility meters
  - ANSI standards, XML, ModBus and has features which allow real time energy usage data streaming, alarm notification - via email, FTP and HTTP
- **Software solutions** to help you easily setup, acquire and present useful data to you when and where you need it. eM200 @Desktop will periodically poll meters, websites to collect load profile and pricing data. Calculate estimated bills mid-month. Generate alarms to email your pager or cell phone

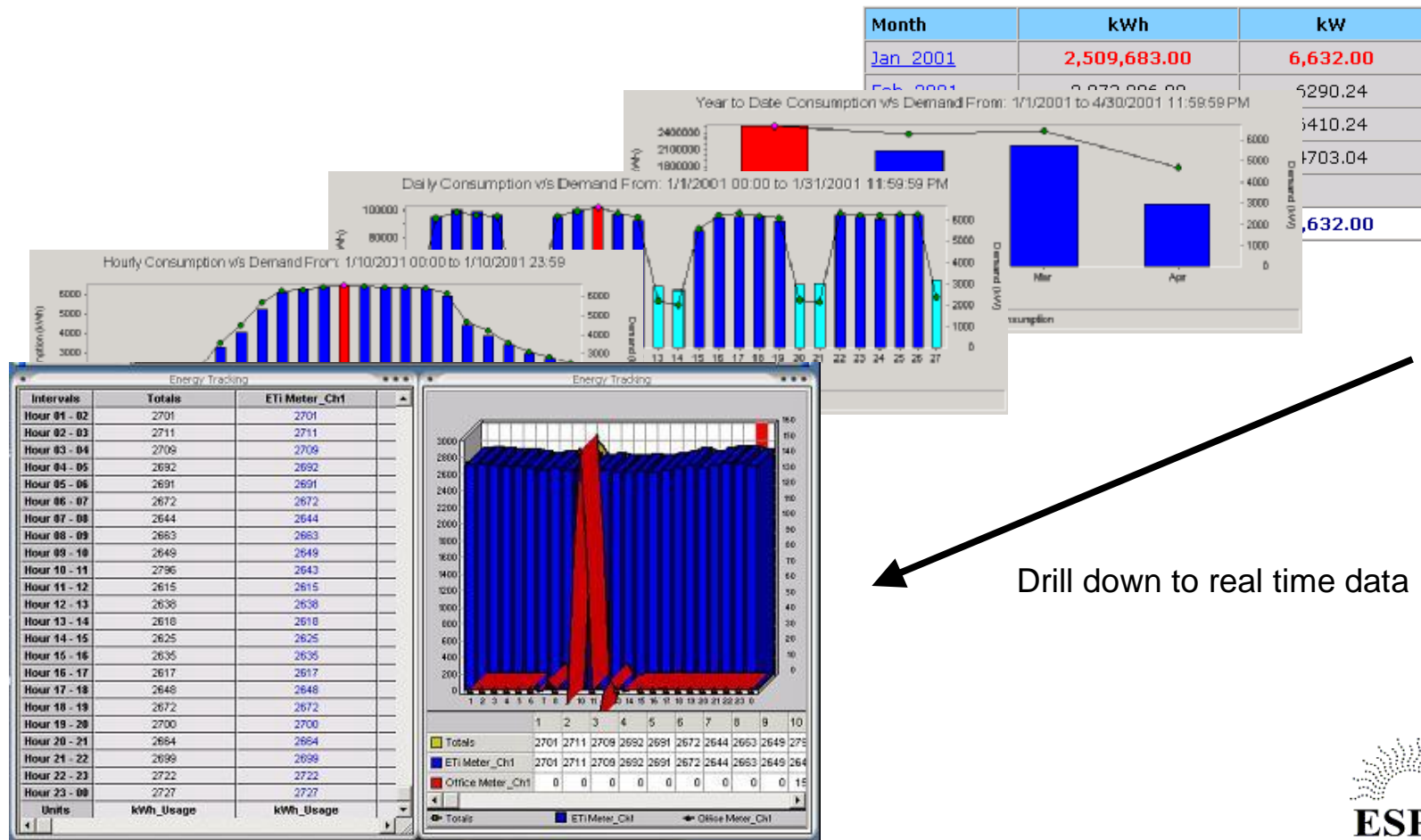
# Real Time Usage Over the Internet



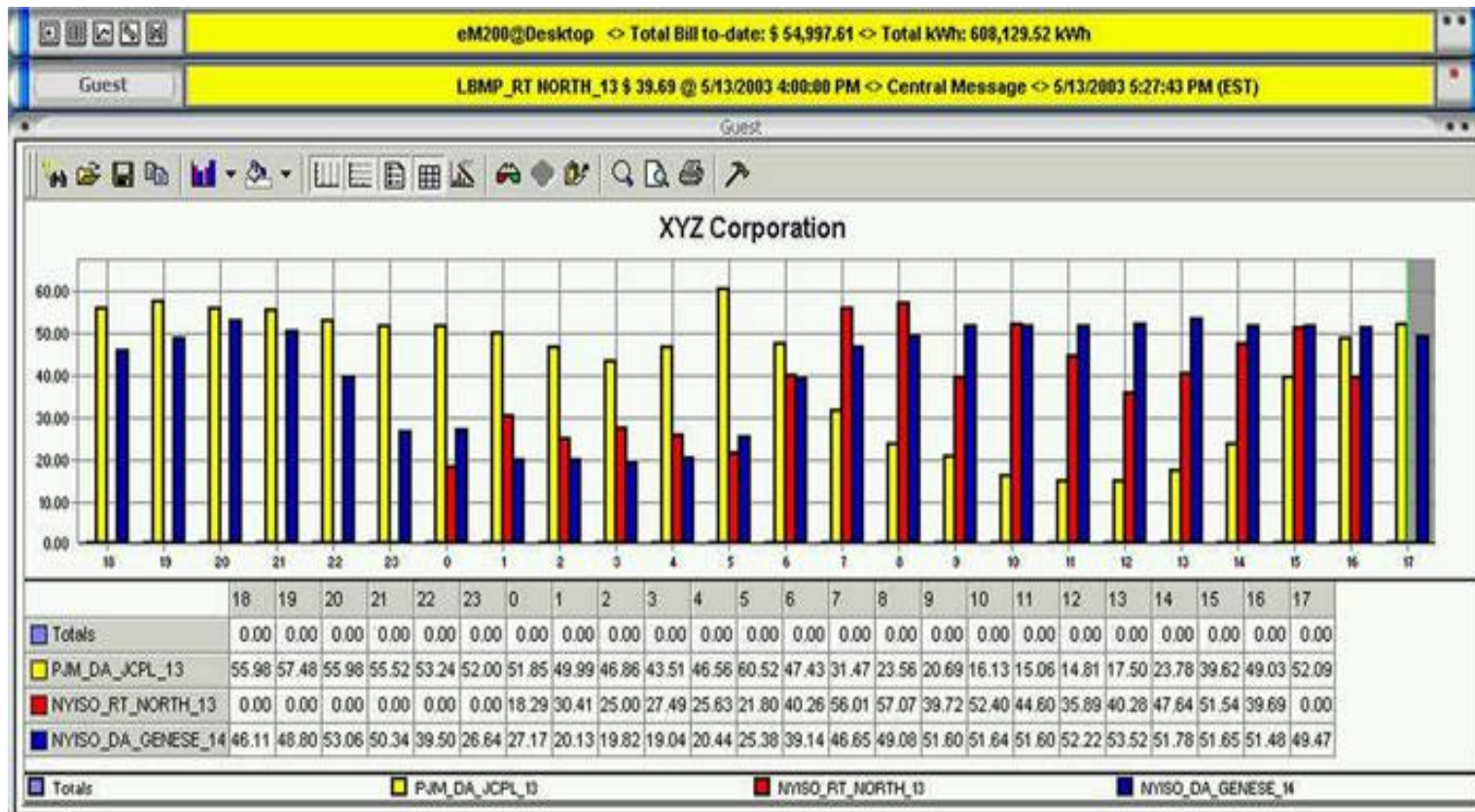
**React faster and  
reduce energy costs**

**Average savings of 1%  
to 5%, with some cases  
of 20%**

# Blend Historic and Real Time Data



# Then Add Real Time Pricing





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## Next step – Investigate the Fit

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- Agree on a set of business objectives
- Define criteria to verify the opportunity
- Select the services needed to achieve goals
- Commit to move forward
  - Establish team
  - Set milestones
  - Contract mechanism/Funding

