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Sub-Metering Benefits and Requirements

It's all about Energy… and how we use it

- The World will consume more energy in the next 30 years then it has since the beginning of recorded time *

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* *(Source: International Energy Agency (IEA) 2007)*

Business Drivers for Energy Metering

- Energy prices will continue to rise
- Natural resources are being consumed at an ever increasing rate
- Awareness of global climate change is pushing sensitivity to energy consumption
- Metering is a key part of Federal Government energy legislation and stimulus related Energy Efficiency and Smart Grid initiatives
- Metering is integral to LEED certification
- Metering is a key component of High Performance Green Buildings functionality including Demand Response
- Metering is integral to Measurement and Verification (M&V)

Energy Wisdom

- ***You Can't Manage What You Don't Measure***
  - Energy accounts for approximately 30% of a properties controllable costs (80% of which is electric) therefore sub-metering…

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Metering Policies

	Energy Policy Act of 2005	Energy Independence and Security Act 2007	DoD Instruction 4170.11	Executive Order 13423
Metering Requirements Section	Section 103	Section 434(b)	Paragraph 5.2.4.2 on Metering	Not required in Executive Order
Applicability	All agencies	All agencies	DoD facilities	All agencies
Key Requirements	-All building -Where practicable -By October 1, 2012 -Meter electricity -Hourly interval data (minimum) collected at least daily	-All buildings -Where practicable -By October 1, 2016 -Meter natural gas and steam	-Meter electricity, natural gas, and water in "appropriate facilities" by 2012. -Electricity, natural gas, and water meters with interval and remote reading capabilities on all new construction and renovation projects exceeding $200,000. -Steam will be metered at plants	Instructions for Implementation encourage that meters be applied to "measure consumption of potable water, electricity, and thermal energy in Federal buildings and other facilities and grounds." Instructions also recommend considering the inclusion of meters in alternatively financed projects.

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Sources: FEMP Metering Best Practices, 2007 and EISA 2007

Legislative Mandates

- **EPACT05 – Section 103- Energy Use and Accountability**
  - Advanced electric meters in all buildings practicable by Oct. 1, 2012
  - Provide date at least daily and measure at least hourly consumption
- **EISA2007- Section 434**
  - Modified above requirement to include gas and steam
  - Required by Oct. 1, 2016

The True Cost of Your Utilities

- Utility costs can exceed 30 percent of overall operating expenses
  - Includes: Water, Air, Gas, Electric, Steam (WAGES)
- Energy is one of the most easily controlled expenses in an organization
- Energy is typically the largest unverified expense in overall operating expenditures
- Studies continue to document the link between utility conservation and separate billing for utility usage.

The Energy Landscape

Monitoring and verification

- **Can you account for your energy usage?**
- What is your projected annual energy spend for electricity, gas, water, oil and steam?

Who uses your energy?

- Do you monitor awareness levels and attitudes toward energy efficiency in your company?
- Applying effective monitoring and verification measures to energy consumption increases accountability and the success of energy efficiency.

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So What is Sub-Metering?

- Sub-metering is the process of installing individual meters in a master-metered property
  - also referred to as *Tenant Metering* and or *Sub Billing*
- Utility costs are distributed to each tenant based on actual usage as measured by individual “Sub” meters
- Provides the needed granularity to understand how and where energy is actually being used in a facility

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Sub-Metering Applications

1. - Tenant Sub Billing
2. - Departmental allocation
3. - LEED® Certification
4. - EPAct 2005 & EISA Compliance
5. - Demand Response Programs
6. - Measurement & Verification
7. - Real time power monitoring

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Benefits of Sub-Metering

- Enhance profitability
  - Reduce energy expenses and increase net operating income
  - Lower capital expenses and better utilize current infrastructure
  - Reduce labor and increase cash flow with automated billing
- Measure building performance
  - Allocate energy costs by usage
  - Quantify the financial impact of conservation measures
  - Benchmark efficiency against industry standards
- Reduce financial risk
  - Purchase bulk energy contracts
  - Implement demand control to avoid demand ratchet charges
  - Manage and respond to utility curtailment events

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Therefore the Reason to Meter…

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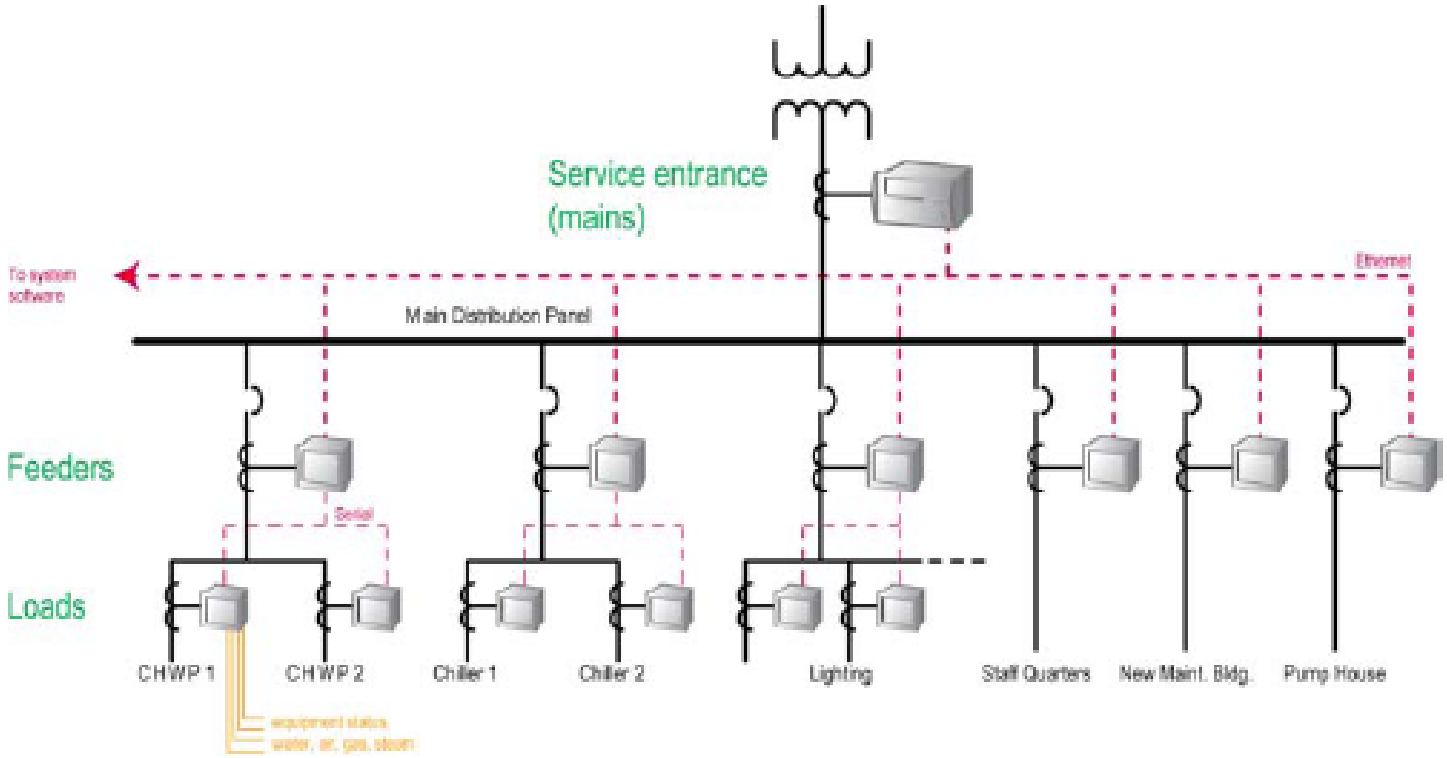
Sub-Metering Solution Examples

Typical metering points for M&V applications



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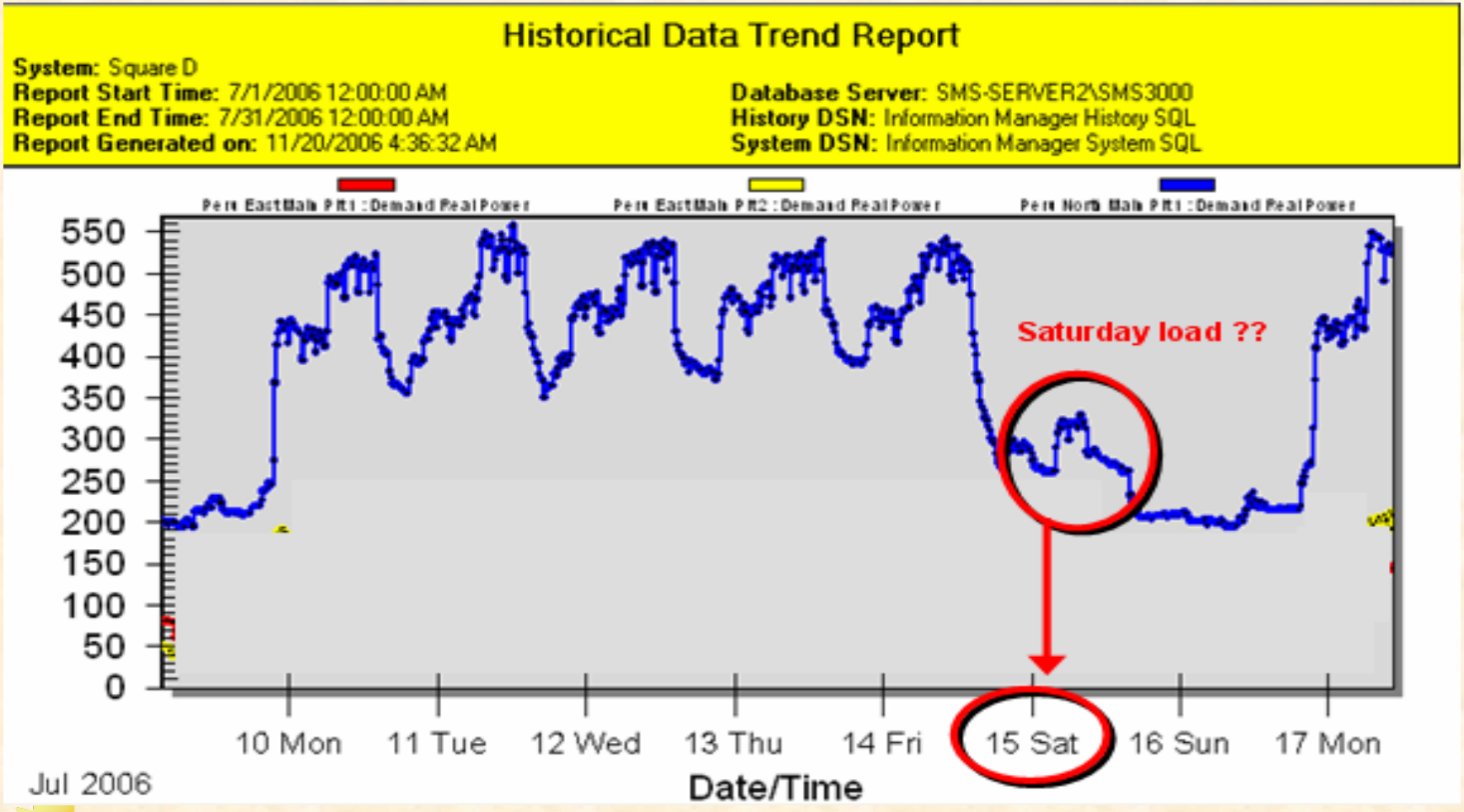
What is your Power Monitoring system doing?



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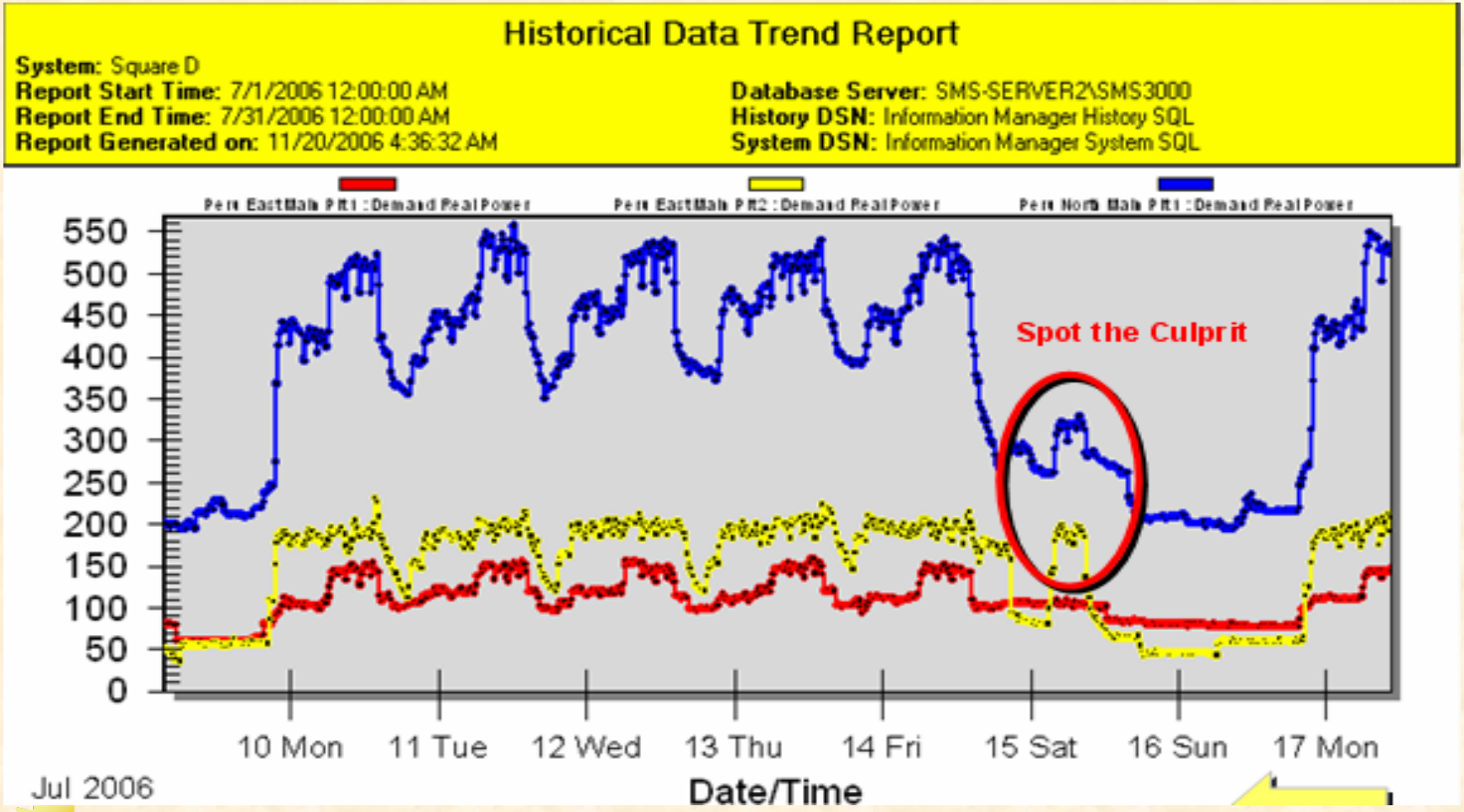
Sub Metering has the Answer!



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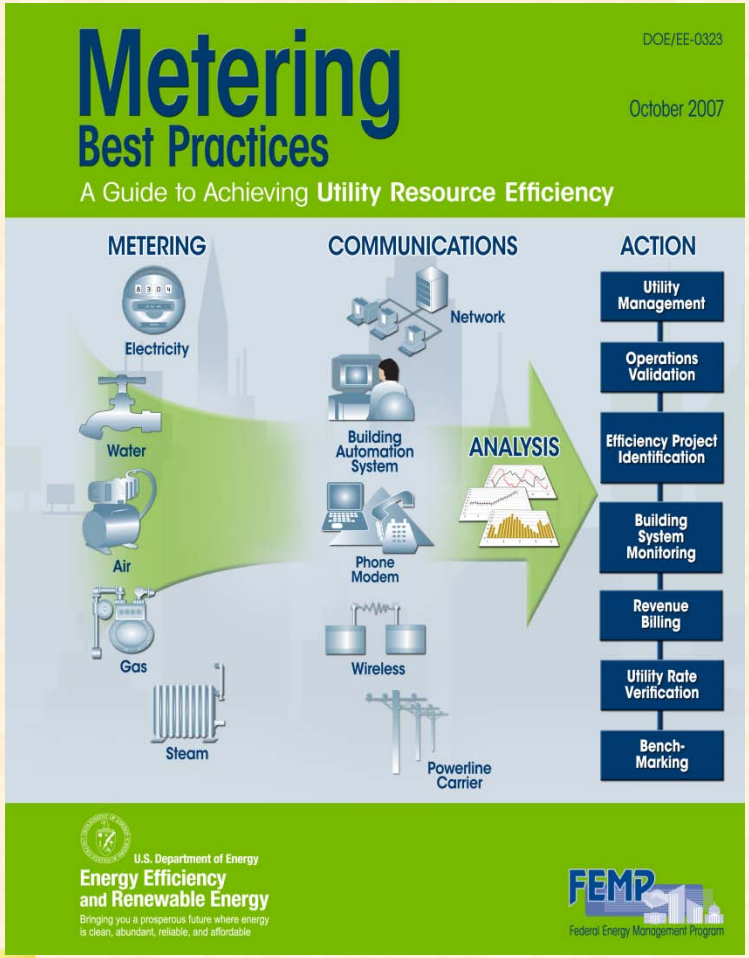
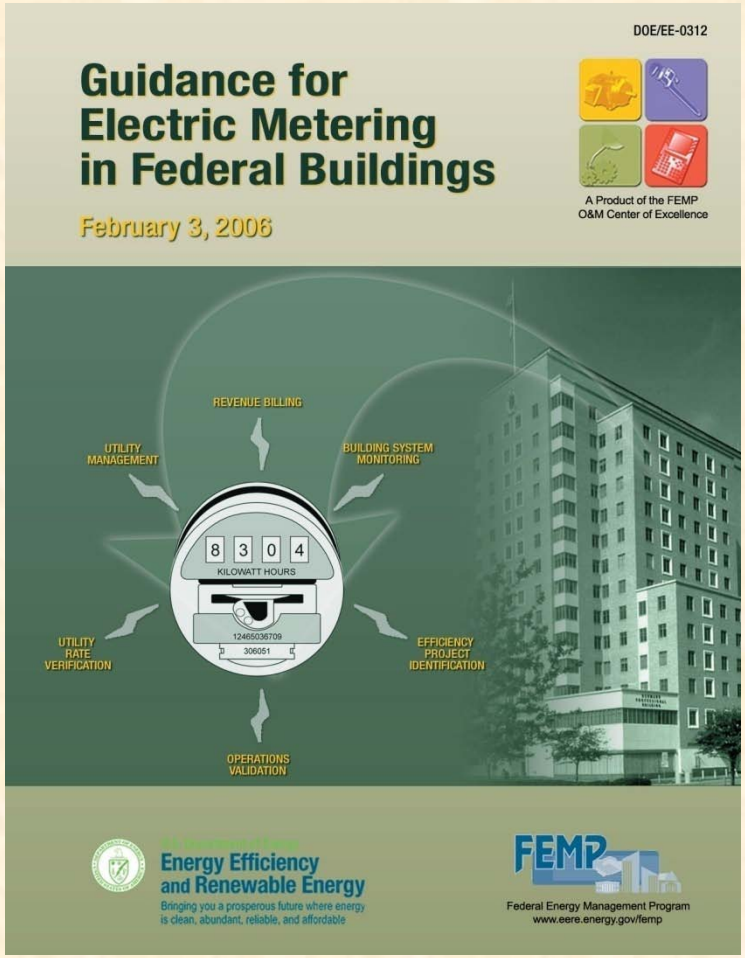
Metering for Resource Efficiency & W.A.G.E.S.





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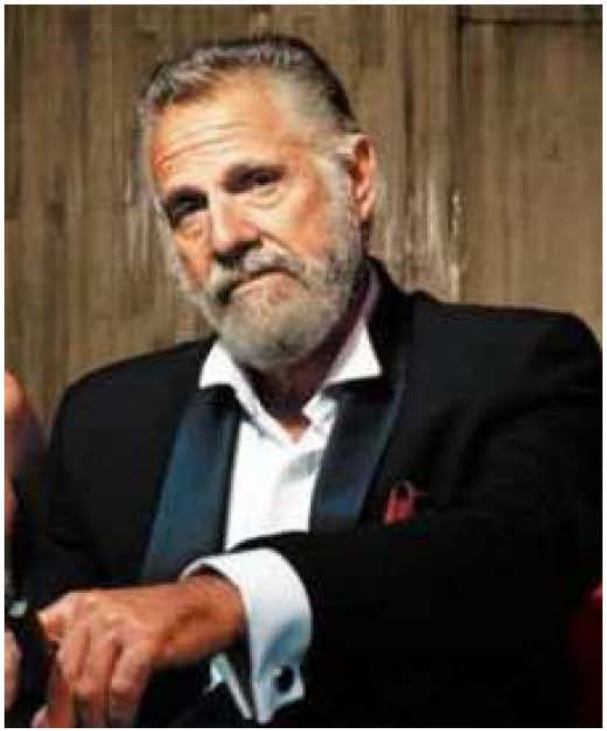
Questions??



Presented by the
Most Interesting Man
In the World

"I don't always use Sub Metering, but when I do, I prefer PowerLogic Sub Metering"

Stay informed, my friend…

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