

Buying Power in Competitive Retail Markets -- Part 2

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Module 3: Retail Market Power Pricing

- Translating wholesale into retail
- Usage patterns affect power pricing
- Service & pricing choices
- Renewable and on-site power options

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Retail Power Pricing Drivers

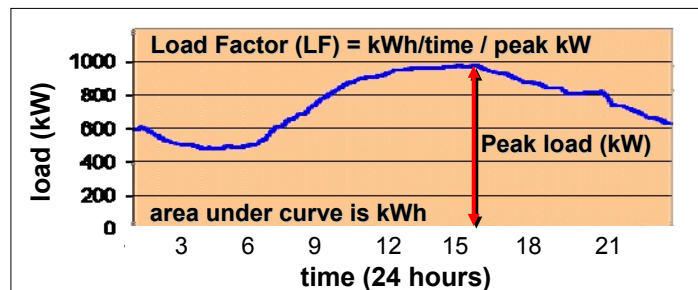
- ❑ **Location** (*ISO, zone, etc.*)
- ❑ **Natural gas pricing** (*varies across U.S.*)
- ❑ Load shape/profile and/or service class
- ❑ Contract volume (total annual kWh)
- ❑ Term (*i.e.*, duration of contract)
- ❑ **Market timing** (*i.e.*, **wholesale pricing**)
- ❑ Customer credit / bill payment record
- ❑ Predictability of usage
- ❑ Level of service (full, firm, interruptible)
- ❑ Price structure (e.g., fixed, index, etc.)
- ❑ Premium services (e.g. “green” power)

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What Is A Load Shape?

- ❑ Electric load (wattage) varies with time; a chart of that variation is a load “profile”.
- ❑ Typical load profiles are therefore two-dimensional, with power on one axis and time on the other:



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Finding Monthly Load Factor

Bob's Buy-It Mall
422 Consumer Way
Hightown, CT 06068

service period: service class:

M D - M D Y SC 4C

7 9 6 7 98

Usage

2666164 kWh

5945 kW

Total Chg.

Charge

\$119549.22

\$71340.00

\$260543.10

$$LF = \frac{\frac{2666164 \text{ kWh}}{32 \text{ days} \times 24 \text{ hr/day}}}{5945 \text{ kW}} = .58$$

The same calculation may be made for a year's use by dividing total kWh/yr by 8760 hrs. (to derive annual average load) and then dividing by annual peak load.

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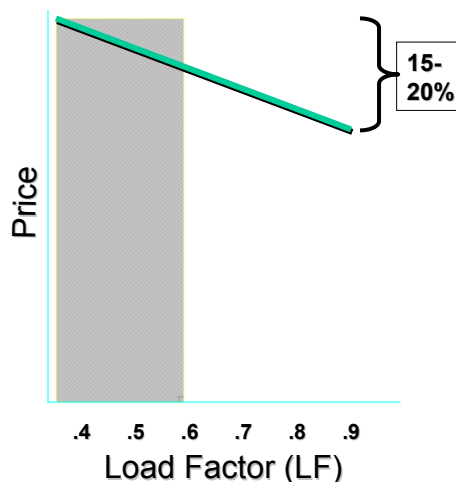
Load Factor vs. Power Pricing

Power pricing may be higher when Load Factor is low, especially where demand, capacity, and ratchet charges are high (e.g., >20% of total bill).

LFs at most buildings are in this shaded range.

Raising LF is one way to cut power cost.

What are some ways to raise your Load Factor?



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Utility Rates Vs. Load Profiles

Utility rates are based on averages of many load profiles (good & bad) within each customer class.

Some HVAC and control systems (e.g., demand response), or 24/7 occupancy schedules (e.g., hospital), tend to flatten an hourly load profile.

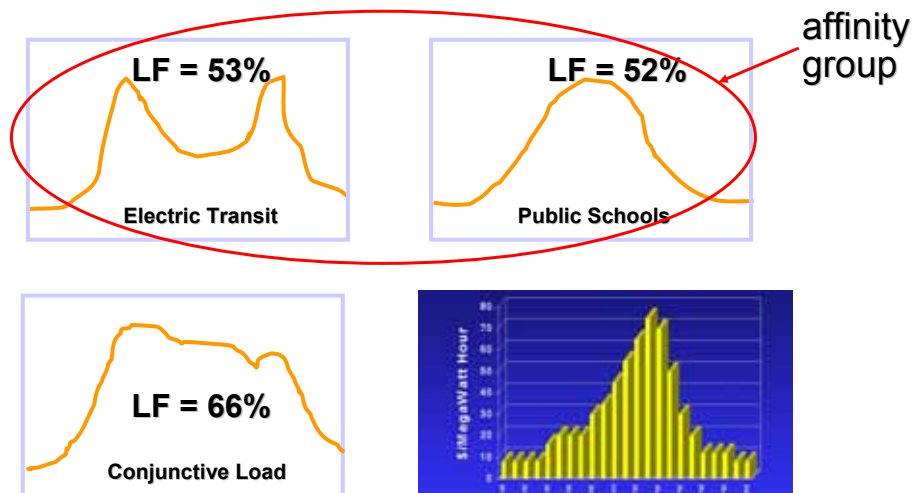
Without hourly load data, suppliers must use standard profiles, limiting their ability to offer good pricing. Standard profiles may thus yield a higher rate. 'Smart' meters collect hourly data.

The price for power delivery may also be affected. An alternative delivery rate may exist.

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Aggregating To Increase Volume



Note potential for cross-subsidizing among accounts.

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Metering/Profiling Resources

NYSERDA's free "Primer On Smart Metering" covers the essentials and provides links to info on specifying and deploying interval meters. Find it at: sites.energetics.com/MADRI/toolbox/pdfs/background/primer.pdf



AEE has an online seminar on load profile analysis and ways to cut peak demand. Find details at: www.aeeprograms.com/realtime/LPonline/



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Term, Timing, Credit

Term: fixed pricing for contracts > 2 yrs. may yield savings, but a customer risks overpaying if the wholesale price drops during that long term.

Market timing: in some markets, wholesale prices may bottom out during two periods: early spring and early fall. Review historical trade data or have a consultant verify that timing.

Credit: Suppliers check it before offering pricing. Verify your D&B (or other) credit rating before seeking pricing. A poor rating may lose bidders, raise price or late fee %, or incur a deposit.

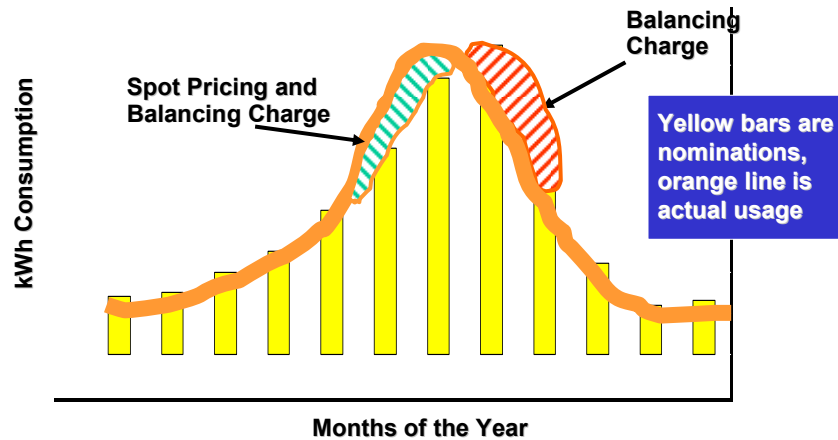
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Predictability Of Usage

line thickness = “swing” or “allowed variance”

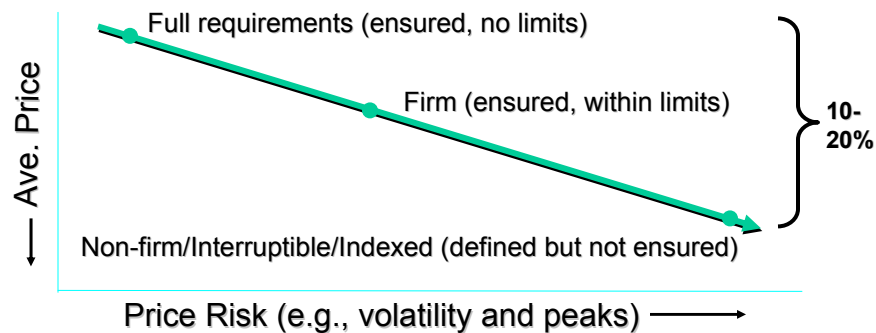


When monthly usage is specified in a contract, major variations may result in extra charges.

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Levels of Service



Price varies based on the type of service you request, and the level of price risk you can tolerate. All load need not be priced the same. Look for ways to cut price while controlling risk (e.g. 50% fixed block + 50% indexed pricing).

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Sample Pricing Structures

- ❑ index/discounts (\$ or %) relative to:
 - ❑ present tariff (if best available)
 - ❑ ISO/standard offer/published index
 - ❑ natural gas price ('heat rate' product)
- ❑ fixed/floating price:
 - ❑ all components fixed, no matter what
 - ❑ fixed energy, floating capacity
 - ❑ ISO price with a floor, cap, or collar
- ❑ contracts-for-differences (CFD)
- ❑ fixed block + market index for balance

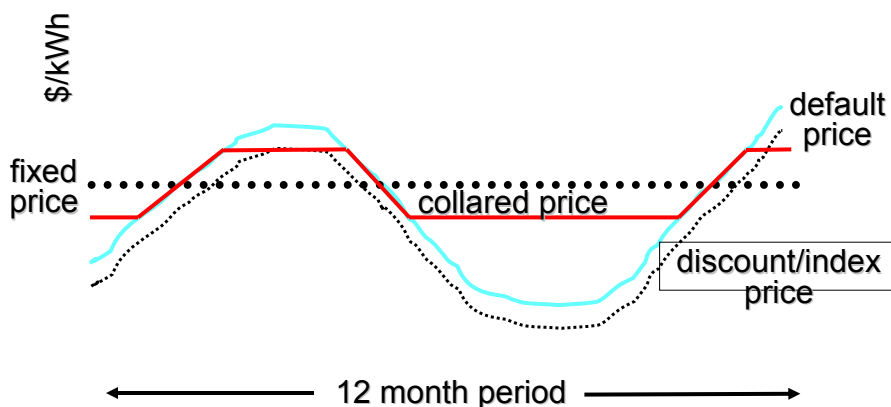


Start simple: get sophisticated in 2nd or 3rd contract.

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What They Look Like



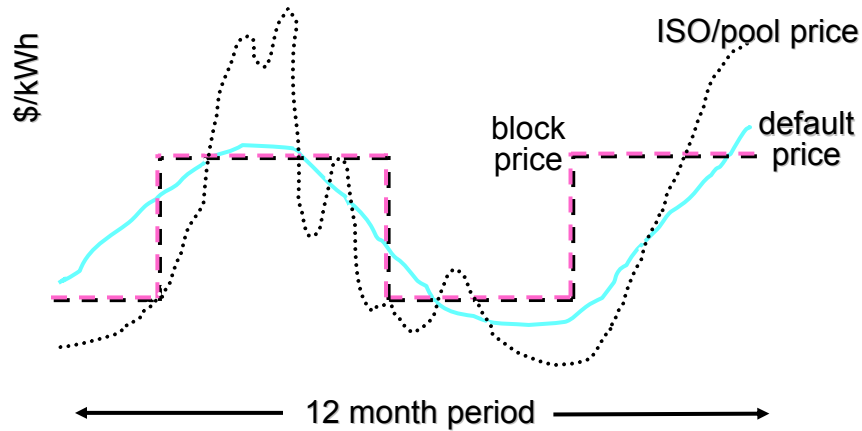
When you use much of your power could make a big difference in your total annual cost.

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What They Look Like

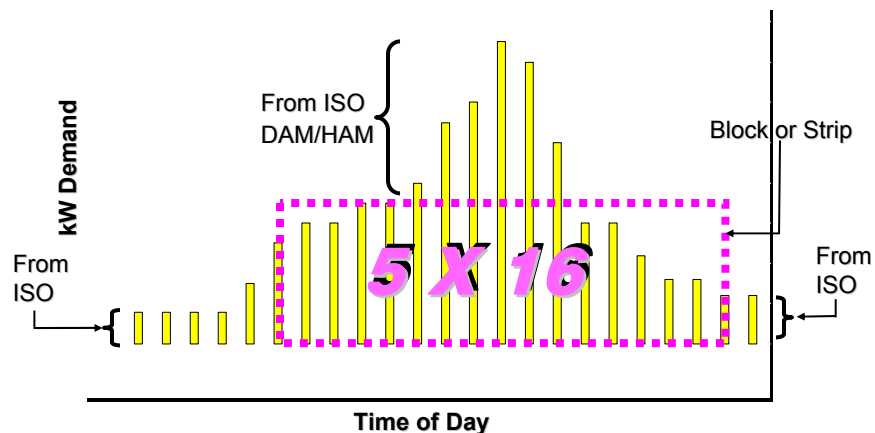


When you use much of your power could make a big difference in your total annual cost.

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Fixed Block Plus Index



This method allows you to set your own level of price volatility / risk.

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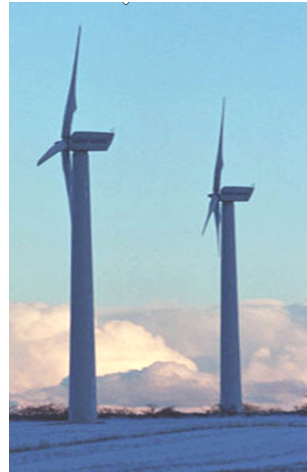
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Buying “Green” Power

Specify % of power to come from renewables (e.g., wind), but premium may be \$.003 - \$.02/kWh. For guidance on buying renewable power: www.wri.org/publication/corporate-guide-to-green-power-markets

But if goal is carbon neutrality, carbon offsets may cost a fraction of ‘green’ power. See: <http://apps3.eere.energy.gov/greenpower/markets/carbon.shtml?page=0>



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Buying On-Site Power

Many states (including still regulated) allow buying power from an on-site non-utility supplier (ask utility acct. rep. regarding tariff specifics on this option).

Choices include solar PV and CHP (Combined Heat and Power, where the customer buys both).

These Power Purchasing Agmts. (PPA) are long-term and may include buying the balance of your supply from others.

Scrutinize pricing formulae for sale of heat & power to ensure acceptability. Unbundle pricing of power (kW) and energy (kWh); meter in 15-min. intvls.



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Review Questions

1. Load factor = _____ demand / _____ demand.
2. Using standard utility load profiles yields the lowest power pricing. True or False?
3. Aggregating loads may cause one load to _____ the price of _____.
4. List 3 more ways to structure a load's price: fixed, _____, _____, _____.
5. Circle the level of power service that has the highest average price:
interruptible firm spot market

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Module 4: Preparing A Facility To Buy Power

- Preparations before procurement
- Using brokers/consultants: pros & cons
- Gathering/configuring your data for RFP
- Identifying assets to leverage

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Don't Start in the Middle

Many make their first mistake by starting with an RFP (as if they were buying office supplies).

Instead, start by assessing your options, which should be summarized at your PUC web site.*

If you have multiple energy accts. in one market, centralize power purchasing. Coordinate this effort: don't allow ad hoc buying by your fac. mgrs.

Nothing requires you to choose a new power supplier. Your utility will still supply electricity (though that may change in the future).

*find links to PUC sites at www.naruc.org/commissions.cfm

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Examine All Your Options

Savings may be found in several places, not just in cheaper supply; review each pricing component.

- generation: do some of it yourself e.g., via CHP?
- transmission/distribution: buy at higher voltage?
- tariff class: is a better utility rate (e.g., economic development, time-of-use, RTP) available?
- metering/billing: submeter tenants/departments?
- taxes: have they been minimized?

And don't neglect your utility: when markets first open up, it may offer a decent one-time deal.

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Don't Act Alone

Before pursuing a power contract, secure clear upper management support and authority.

Access appropriate internal resources (e.g., legal).

Work with relevant dept. heads (e.g., facility mgt., purchasing, accounting, legal, PR, marketing, tenant billing) to coordinate their involvement and to secure agreement on pricing & terms.

Consider engaging a specialist (i.e., a broker or consultant) to guide your first power procurement effort.



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Broker Vs. Consultant

A broker is paid by the supplier. His fee is included in the supplier's price to you. A consultant is paid by you at a known fee/rate.

Most dereg states require brokers to be licensed. None require licensing of consultants.

Some brokers focus on maximizing their fees by pushing multi-year contracts, or steering you to the bidders offering them higher fees.

If using a consultant, contractually bar him from also collecting a broker's commission.

Consultants may offer a wider range of options than brokers (who like to simplify the process).

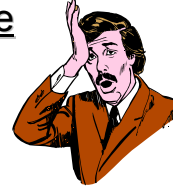
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Why Not Do It In-House?

Problems resulting from using in-house personnel may not appear on a balance sheet, but could lead to losses (e.g., contract errors, impact operations or business, lose options).



Cost range for a broker or consultant to handle several mid-size accounts in one market may be \$.001 to \$.003 per kWh (i.e., 1 to 3 mills/kWh).

Example: 10 million kWh/yr (~3 MW), 10 accounts, 1-yr term. Fee could run between \$10K and \$30K. For a 2-yr deal (minimal extra work), that's \$20K to \$60K.

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Choosing Your Support

If your typical site bill <\$20K/yr (<~50 kW), seek informal bids (+ financials if 1st time), or join an aggregation group. A specialist or a formal RFP would likely be overkill.



For multiple accounts each spending at least \$300K/yr (~1 MW), or totaling ~\$1M/yr, use a specialist to handle the process. For big spend, (e.g., \$5M+/yr), set a fixed fee \leq .5 mill/kWh.

Specialists do well with high kWh volume accounts, but not with small accounts behind multiple utilities.

Note the preferred method for price discovery (e.g., auction). It may impact choice of power products.

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Using a Consultant

What are you able to spend on a consultant? Total fee may exceed your consulting budget.

Look for verifiable procurement experience, not company size or claimed “connections”.

Ask what % of expected savings his fee will be.

Review his knowledge of your utility’s tariffs, load analysis, negotiation of power contracts, etc.

Check broker licensing at PUC sites.

Find CEPs at www.aeecenter.org/custom/cpdirectory/index.cfm.



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Compare his proposed scope of work with this task list:

- ☐ help assemble account data
- ☐ check suitability of existing delivery tariff(s) & taxes
- ☐ benchmark annual usage/demand
- ☐ for large accounts, analyze hourly load profile(s)
- ☐ review year-to-year consistency of account usage
- ☐ assist with credit issues or financial standing
- ☐ explain pricing structures and risks
- ☐ offer options for price discovery methods
- ☐ critique bidder contracts prior to pricing
- ☐ forecast utility and bidder pricing
- ☐ watch market for pricing opportunities
- ☐ model total costs of proposals
- ☐ ensure simple signing procedure
- ☐ aid in securing non-price benefits

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Joining An Aggregation Group

Aggregators organize energy-purchasing groups and act as their brokers, taking a commission.

Some are middlemen seeking purchasing commitments they sell to others. A few try to sell other services (e.g., telecom).



Group members are essentially outsourcing their power procurement needs in exchange for a small discount and (maybe) other services.

Before joining an aggregation group, be sure you fully understand the contract and its implications.

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Start By Organizing Your Energy Account Data

Gather/update/centralize your electric account information: acct. numbers, svc. addresses, etc.

If available, review load profile or LF data to identify and triage poor accounts, or improve LF. Doing so may reduce future pricing.

Based on expected changes to your facilities, forecast kWh usage and kW demand over the maximum acceptable term (e.g., 3-5 years).



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Provide Access To Interval Data

Accounts > 250 kW may be on rates based on interval data (i.e., kWh used in 15- or 30-min. periods). Make it available to both your specialist and power suppliers via an authorization letter or ID and password.

Many power suppliers now request interval data to more tightly price their offerings. Providing access to it through a RFP has yielded lower pricing for many large customers.

Customer	XXXX		
Acct No	123456		
DATE	TIME	kWh mtr 1	kWh mtr 2
10105	15	408.24	810.18
10105	30	418.32	795.06
10105	45	422.1	795.06
10105	100	419.58	795.06
10105	115	413.28	790.02
10105	130	413.28	791.28
10105	145	418.32	787.5
10105	200	417.06	783.72
10105	215	412.02	783.72
10105	230	413.28	778.68
10105	245	410.76	771.12
10105	300	398.16	767.34
10105	315	393.12	772.38
10105	330	394.38	768.6
10105	345	391.86	771.12
10105	400	388.08	769.86
10105	415	393.12	771.12

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Review Potential Assets

Identify items your firm is willing to offer that might improve contract value/pricing, such as:

- ☐ allow use of customer's name/symbol in supplier's marketing.
- ☐ promote supplier on your employee pay stubs, retail receipts, web site, other venues.
- ☐ co-market via mutual discounts.
- ☐ rename athletic field or building with supplier's name during term of contract.
- ☐ use customer gensets in DR program.

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Gather Data For RFP

To elicit complete proposals and pricing, consider a RFP. Provide suppliers with the following:

- ❑ **accurate** listings of account numbers and service addresses, by utility
- ❑ permission to access your utility billing data; for time-of-use (TOU) accounts, provide access to a year of interval data for each
- ❑ pricing spreadsheet format for their responses, showing separate and aggregated pricing
- ❑ if price is not the only goal, describe additional criteria (e.g., 'green' power, summary billing)

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- ❑ list of loads/accounts desiring or capable of non-firm service (e.g., % load curtailment)
- ❑ expected load changes by account (+/-X%/yr), or forecast monthly kWh/kW for each account
- ❑ interest in any other services (e.g., savings verification, sub-billing, demand response)
- ❑ audited financial statement, or other credit data
- ❑ if tax-exempt, attach exemption certificate
- ❑ if required by your Purchasing Department, your firm's up-to-date contract boilerplate text, or its pro forma purchasing contract

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Review Questions

1. Name three depts. in your firm that could be involved in power procurement: _____, _____, _____.
2. Where can you find a written synopsis of your state's deregulation? _____
3. List 4 items needed to assemble your power RFP: _____, _____, _____, _____.
4. Cutting _____ demand may lower your average power price.
5. List 4 assets that may offer price leverage: _____, _____, _____, _____.

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Tomorrow: **Modules 5, 6 & 7:**

***Finding & Choosing Retail Power
Suppliers***

***Analyzing & Negotiating A Retail
Power Contract***

***Securing & Evaluating Competitive
Pricing***

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