



The Treatment of Utility Costs
– and –
The Utility Cost Adjustment (UCA)

August 30, 2016
NECA Conference



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Introduction

Who Are We? A Unique Perspective

➤ Introduction

- Mark Davis
- Tony Benigno
- Monika Moses

➤ Stepping Stones (Savage Engineering → Strategistics → Attain)

- Special Utility Cost Allocation Studies in the 1980's- 1990's (45 IHEs)
- We speak 'Facilities' and 'Finance'
- Involved in the discussions around the UCA
- Routinely evaluate opportunities to defensibly improve O&M
 - UCAS
 - Metering
 - Metering Plus UCA

Preview of what's to come...

Case Study 1 Did not receive UCA prior to UG Comparison of Allocation Models with the UCA (MTDC = \$20.5 M)

| Allocation Bases | Allocation to OR of U&UR \$ | UCA impact on \$ to OR | | | | Total \$ to OR (POINTS) |
|---|----------------------------------|------------------------------------|-----------------------------------|-----------------------|-------------------------|------------------------------|
| | (A) Same methodology pre/post UG | (B) Allocation to OR applying REUI | (C) UCA Calculated (B - A) / MTDC | (D) UCA Capped at 1.3 | (E) Cost to OR | (D) Combined Impact (A + E) |
| Default - Campus Wide | \$564,689 | \$902,314 | 1.65 (over 1.3 cap) | 1.30 | \$266,500 | \$831,189 (4.1p) |
| Recommended Allocation based on Meters | <u>\$1,019,816</u> | \$1,257,810 | 1.16 | | <u>\$237,800</u> | <u>\$1,257,616</u> (6.1p) |
| Impact (Meter - Campus Wide) | \$455,127 | | | | (\$28,700) | \$426,427 (2.1p) |

O&M and Space: Separate but Connected

Operations and Maintenance (O&M)

Why are we here talking about O&M

- Largest Uncapped Pool in F&A – can account for 15+ points in the rate.
- Allocation to Organized Research can be improved by 30% on average by selecting the appropriate allocation base
- How do you allocate your O&M Costs to Organized Research now?

Types of O&M Costs

- Administration
- Asbestos Removal
- Buildings/Grounds
- Carpenters
- Contract Services
- Controls
- Electricians
- Electricity
- Emergency/Contingency
- Environmental Services
- Equipment
- Fabrication
- Fuel Oil
- Grounds
- Locksmiths
- Natural Gas
- Painters
- Plant Maintenance
- Program Development
- Project Management
- Radiation Safety
- Refrigeration
- Residence
- Security
- Steam

How O&M costs are allocated?

➤ O&M expenses shall be allocated as described in Uniform Guidance

- 2 CFR Part 200 Appendix III Section B.4.a. and b. and c.
- 2 CFR Part 200 Appendix III Section B.2.b.(2) and (3)

➤ Multiple function space – space used in support of more than one function

“Shall be allocated to the individual functions performed in each building on the basis of useable square feet of space”

- Usually through a space survey

A Closer Look at the Different Type of O&M Costs

NON UTILITY RELATED

- Buildings & Grounds
- Elevator
- Fire Protection
- Flooring
- General Contracting
- Housekeeping
- Laundry
- Locksmith
- Painting
- Security
- Training
- Transportation
- Waste Disposal
- Window Replacement

UTILITY RELATED

- Building Management Systems
- Emergency Generation
- Facility Management
- Heating Ventilation and Refrigeration Repair
- Lighting
- Maintenance Contracts
- Project Management

UTILITY COSTS

- Electric
- Steam
- Oil
- Natural Gas
- Chilled Water
- Water & Sewer

Ways to allocate = Campus wide or Building specific

Space Survey

- The Most Important Process!
- Most often will be reviewed by the HHS - CAS
- Should correlate closely with MTDC bases of research departments = *Space and Base*
- Facility components are NOT CAPPED
- Will support the allocation of space related pools.
 - » Building depreciation
 - » Equipment depreciation
 - » Interest expense on capital facilities
 - » Operation and maintenance expenses
- Space is weighted by the REUI to calculate the UCA

The History of UCAS and UCA Boiled Down to 5 key points

Utility Cost Recovery Before the UG

1. OMB A-21 allowed special studies for utility cost allocation (UCAS) that were never popular with the Government.
2. 1996/1997 Farewell UCAS; hello Utility Cost Adjustment (UCA). Special studies to allocate utility costs were disallowed.
3. Allocate Utility Costs in the same manner as Depreciation: cost at the building level then to function by assignable area.
4. IHEs who performed UCAS (65 on Exhibit B) could add a UCA of 1.3 points onto their F&A rate.
5. IHEs recognize that campus level metering does not provide equitable cost recovery. Enter the age of building metering for cost allocation.

Current Status

The Era of the Uniform Guidance

- COGR Response to OMB-2015-001, Item 7 **UCA**: “Appendix III, B.4.c **may be the single most confusing section of Uniform Guidance** and will require close collaboration between our institutions and Federal officials to achieve a successful roll-out of this section.”
- Most schools have not prepared an F&A rate proposal that required justification of the UCA. FY 2016 is the first year.
- In our experience, Very few schools have been able to justify a UCA at 1.3 points (the cap) using an REUI of 2.0.

The Uniform Guidance re: Utility Cost Allocation: What HAS NOT changed?

- Special studies for utility cost allocation are not allowed.
- The allocation of Utility Cost is to be calculated using the same methodology as building depreciation.
- Utility related cost is allocated by metered usage by utility.
- The UCA is to be added to the calculated rate in the F&A proposal.

The Uniform Guidance re: Utility Cost Allocation: What HAS changed?

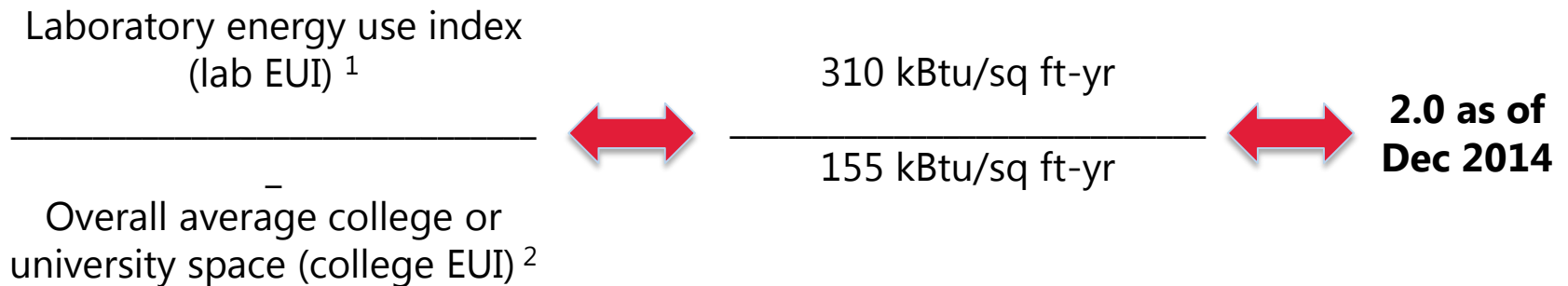
- UCA can be used by all schools on the long form.
- UCA must be justified by calculations provided by the UG.
- UCA is CAPPED at 1.3 percentage points.
- An REUI (Research Energy Use Index) is used to weight Research Laboratory Space to calculate the UCA.
- The REUI is currently stipulated to be 2.0. It may be adjusted by OMB not more frequently than annually; not less frequently than every five years

How is it Calculated?

An introduction to the UCA

That REUI thing – a 10,000 foot view

- Effective area is calculated for multi function space where metering can't isolate utility cost to a single function.
- Research Laboratory Area is multiplied by a Relative Energy Utilization Index (REUI). Constants: $1y < Review < 5y$



Note 1: Lawrence Berkeley Laboratory "Labs for the 21st Century" benchmarking tool [310 based on 2012 database](#)

Note 2: US Department of Energy "Buildings Energy Databook" [155kbtu/sf based on 2003 database](#)

The Calculation (an Example)

The Utility Cost of Space X is \$1,000 per year

| Space Function | Un-weighted Space (asf) | Un-weighted Cost (\$) | Weighted OR Lab REUI = 2 Effective Area (asf) | Weighted Cost (\$) | Increased Cost to OR (\$) |
|-------------------|-------------------------|-----------------------|--|--------------------|---------------------------|
| Administration | 500 | \$ 100 | 500 | \$ 69 | |
| Instruction | 1,200 | \$ 240 | 1,200 | \$ 164 | |
| Non-OR (res. Lab) | 800 | \$ 160 | 1,600 | \$ 219 | \$ 0 |
| OR (non res. lab) | 1,000 | \$ 200 | 1,000 | \$ 137 | \$ (63) |
| OR (res. lab) | 1,500 | \$ 300 | 3,000 | \$ 411 | \$ 111 |
| Totals | 5,000 | \$1,000 | 7,300 | \$1,000 | \$ 48 |

Contribution of Space X to the 1.3 Cap = \$48; compute cumulative total of all space contributions to the Organized Research Rate to calculate UCA as a percentage of Organized Research MTDC (not to exceed 1.3 points)

(Note: Space X can be a site, building, floor or room).

Interpretations

➤ Define "Research Laboratory Space?"

| Room Type | Standard FICM Code |
|---|--------------------|
| Research Laboratory space includes wet and dry labs, lab support rooms such as cold rooms and dark rooms. | 250, 255 |
| Some space in animal facilities | 570, 575 |
| Greenhouse | 580, 585 |

➤ All space that is classified as Research Laboratory Space (regardless of functional use and the funding source) should be weighted by the REUI.

Case Studies

Lets Speak a Common Language

- Default Methodology: Allocate all costs equally across all Assignable Area
- Existing Metering: Allocate costs via primary utility and sub-utility meter information
- Enhanced Metering: Allocate costs using sub-metering to isolate Energy Dense Research Bldgs. From less Energy Dense Bldgs.

Case Study 1 - School not on Exhibit B

Case Study 1 Did not receive UCA prior to UG Comparison of Allocation Models with the UCA (MTDC = \$20.5 M)

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•HIGHLIGHTS –

- “I get 1.3 Points I didn’t have before so I am done” ???
- The client believed that the calculated UCA of 1.3 meant they identified the highest possible recovery of cost until we demonstrated that utilization of the meter data improved the identified cost **an additional \$426,400 or 2.1 points.**

Case Study 2 – School that was on Exhibit B

Case Study 2 Formerly Received UCA of 1.3 under OMB A21 Comparison of Allocation Models with the UCA (MTDC = \$53M)

| Allocation Bases | Allocation to OR of U&UR \$ | UCA Impact on Cost to OR | | | | Total \$ to OR (POINTS) |
|---|-------------------------------------|---------------------------------------|--------------------------------------|--------------------------|-------------------------|--------------------------------|
| | (A) Same methodology pre/post UG | (B) Allocation to OR applying REUI | (C) UCA Calculated (B - A) / MTDC | (D) UCA Capped at 1.3 | (E) Cost to OR | (D) Combined Impact (A + E) |
| Default - Campus Wide | \$1,783,464 | \$2,226,324 | 0.84 | 0.84 | \$445,200 | \$2,228,664 (4.2) |
| Recommended Allocation based on Meters | <u>\$2,192,066</u> | \$2,576,500 | 0.73 | 0.73 | <u>\$386,900</u> | <u>\$2,578,966</u> (4.9) |
| Impact (Meter - Campus Wide) | \$408,602 | | | | (\$58,300) | \$350,302 (0.7) |

•HIGHLIGHTS –

- To obtain the benefit from “Recommended Allocation based on Meters” the institution needs to install hardware (meters).
- Total increase in Utility and Utility related cost is 0.7 points or **\$350,000**.

Common Case Study Observations

- The objective is to defensibly MAXIMIZE the recovery of utility cost from the cumulative results of the normal allocation of cost PLUS the UCA.
- Building level meters may reduce the points calculated to justify the UCA.
- The allocation at the building level meters plus the UCA will be greater than an allocation using campus wide assignable area plus the UCA.

What Can Universities Do?

A Major Tool to Increase the Recovery of \$\$\$

➤ Metering

- Primary Meters: Utility Company meters
- Building Level Meters: Institution installed meters
 - Price
 - Installation and maintenance issues
 - Can have significant impact on recovery
 - Enables the Segregation of Energy Dense Research Buildings

Observations About Metering on Campus:

- Facilities management always said YES when asked if buildings were metered (although some were not)
- Some buildings were metered for some utilities some of the time; seldom were all of utilities in key buildings or at strategic locations metered
- Often meters were not located in buildings that they served
- Meters were not properly applied or sized

Final Thoughts

Final Thoughts

- **As demonstrated in the Case Studies the UCA is not the “end all be all” but rather a number that is part of the equation.**
- **The intent is not to maximize the UCA but maximize the identified cost to research and meters still play an instrumental role.** In both examples the campus wide allocation of U&UR was greater than calculated after using a metered allocation.
- Some reasons to bring in help - There are intricacies around properly calculating the UCA (which go beyond the level of today’s discussion)
 - Calculation needs to be done on a room by room basis, not at a building or campus level.
 - How utility costs are allocated to ‘pools of buildings’ is not straight forward and how institutions calculate the UCA may not be defensible.
- Timeframe impacts strategies

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