

US EPA ARCHIVE DOCUMENT

# Tribal Casino Efficiency (or Pollution Prevention)

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# Make Change Appealing:



# Three Rules:

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- #1 Frame the Business Decision
- #2 Reduce, then Reuse, then Recycle
- #3 Move Closer to the Source (Purchase)



# #1 Frame the Business Decision

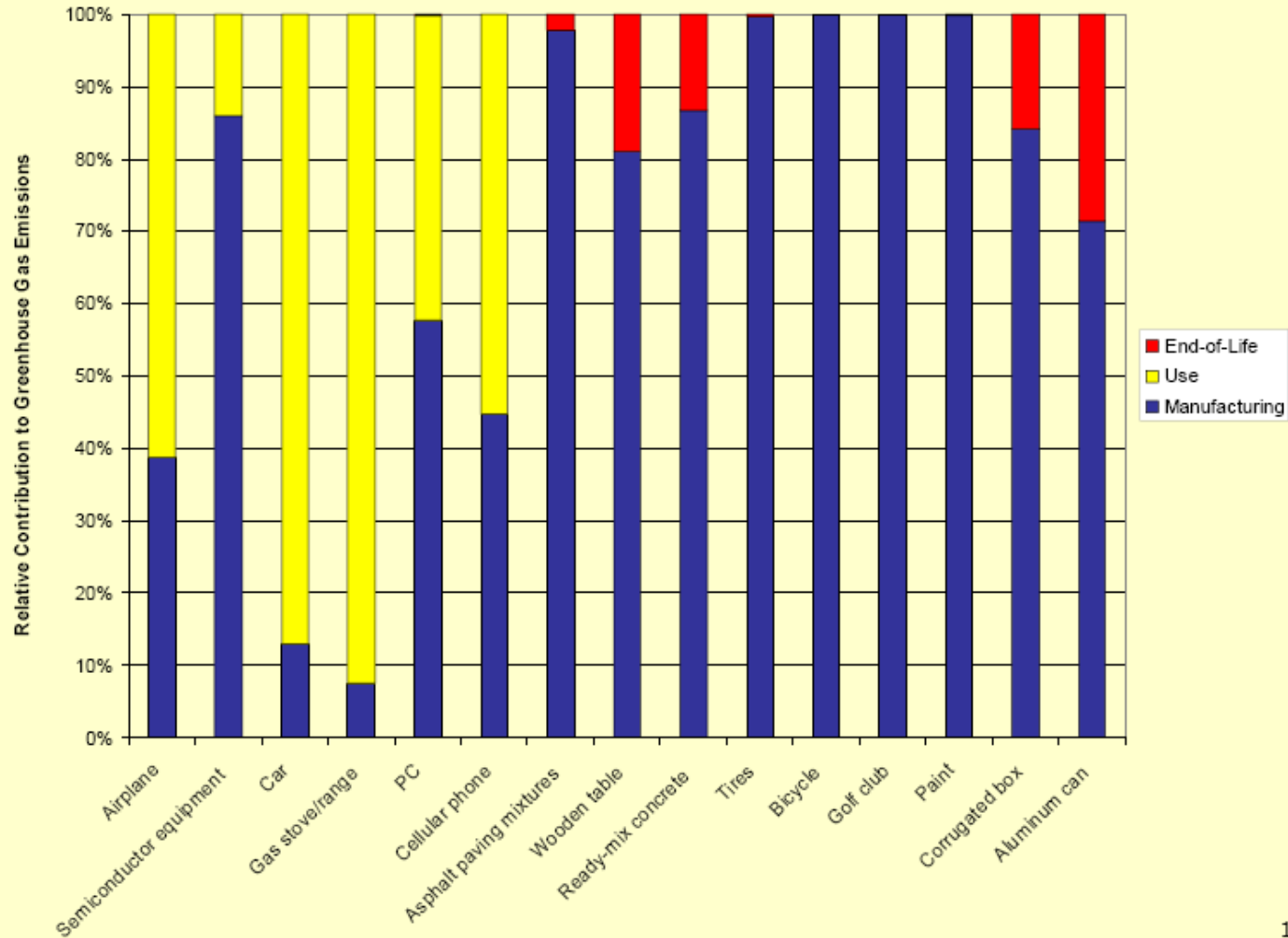
- Grows Business
  - Better customer experience
  - Attracts customers
- Saves Money
  - Supplies last longer
  - Less waste
- Makes Job Easier
  - Better ergonomics
  - Worker satisfaction/pride
- Works Better
  - Cleaner
  - Quieter
- Works Faster
  - Increases throughput
  - Decreases labor

...and yes,  
environmental  
benefit too...



# #2 Reduce, then Reuse, then Recycle

## California/LBL Greenhouse Gas/Product Life Cycles (2004)



# #3 Move Closer to the Source (Purchase)

## Green Building is Best...

- Become part of the planning and design process
- Decision makers want to know: how does it:
  - Improve **Customer Experience?**
  - Decrease **Operational Cost?**
  - ...and maybe...
  - Enhance **Community Perception?**
  - Reduce **Environment Impact?**
- Remodeling and expansion always ongoing



# Making the Business Case

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- Speak the Language and Understand Motivators
  - *Cost*
  - *Customer Experience*
  - *Community Perception*
  - *Compliance/Regulatory*
- Know Your Numbers
  - *ROI - Return on Investment*
  - *Simple Payback*
  - *Purchase Cost vs. Total Cost to Operate*
- Benchmark/Compare
  - *Energy*
  - *Water*
  - *Solid Waste*





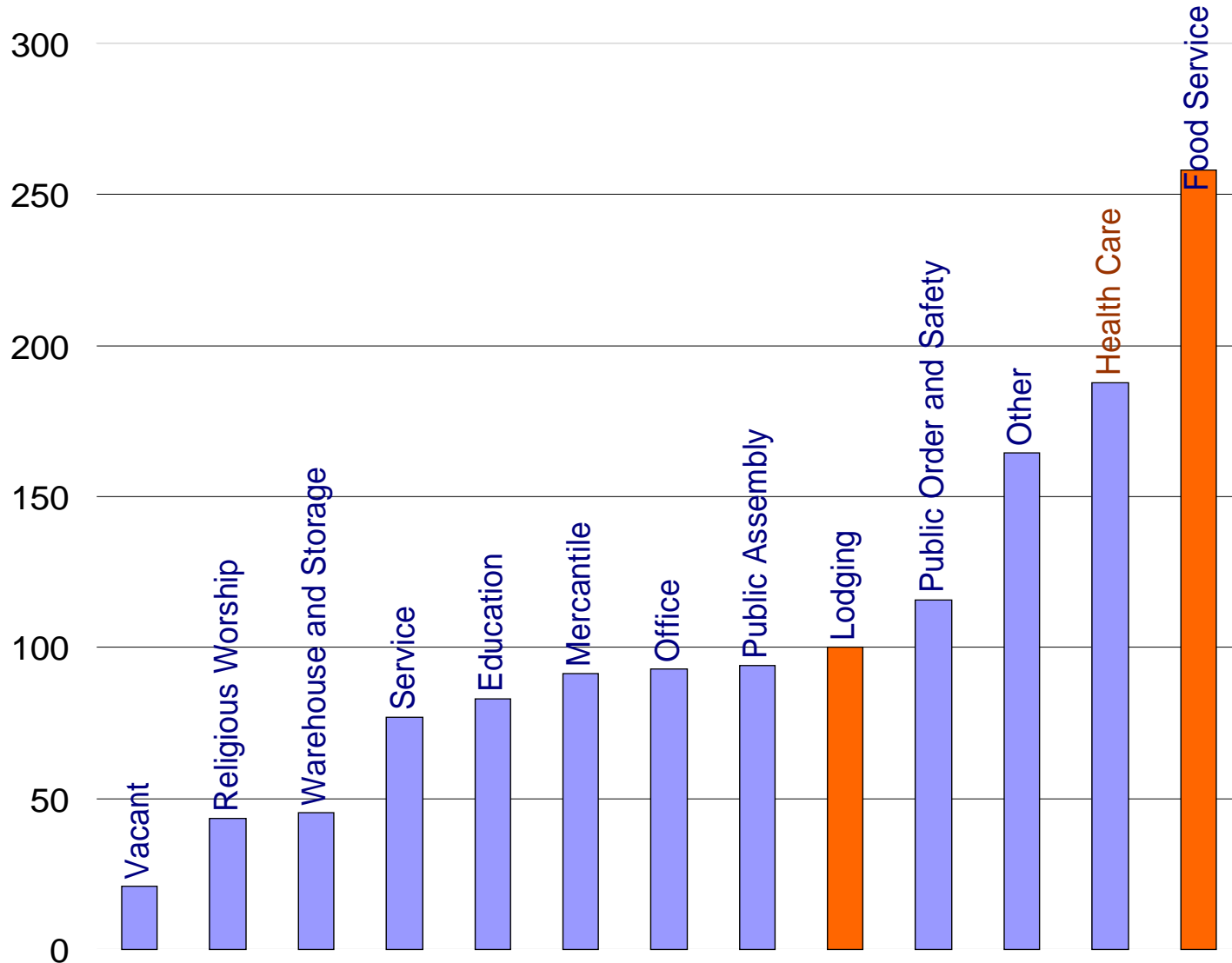
# Focus Areas

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- **Energy:**
  - Lighting: Operation & LED and Fluorescent
  - HVAC: Operation
  - Hot Water: kitchen, guest rooms
- **Water:**
  - Kitchen Dishwashing
  - Landscaping
  - Bathrooms
- **Solid Waste:**
  - Food Waste
  - Diverting Recyclables
  - Bathrooms
  - Green Waste/Landscaping



# Energy Use Intensity By Building Type



2003 CBECS Data: <http://www.eia.doe.gov/emeu/cbecs>



# Energy Use Data:

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- Casinos can use 5+ times as much per sq.ft. (351 kw-hr/sq.ft./year) as the average large hospital

(EnergyServices. March 2006. Casino Energy Management Fact Sheet.  
[www.wapa.gov/es/pubs/fctsheet/casino%20fact%20Sheet.pdf](http://www.wapa.gov/es/pubs/fctsheet/casino%20fact%20Sheet.pdf))

- **Hospitality and Lodging** (Energy and Environment Benchmark for Hotel Industry. 2006. Engineering.  
[www.fhrai.com/BenchMark/Engineering.asp](http://www.fhrai.com/BenchMark/Engineering.asp))

|               |     |
|---------------|-----|
| Space heating | 31% |
| Water heating | 17% |
| Cooling       | 15% |
| Lighting      | 20% |
| Kitchen       | 10% |
| Elevators     | 3%  |
| Other         | 4%  |



# Water Use Data: Distribution

| Water Use Area     | Hagler Bailly |
|--------------------|---------------|
| Guest Rooms        | 33%           |
| Kitchens/Coldrooms | 18%           |
| Landscaping        | 15%           |
| Public Bathrooms   | 15%           |
| Laundry            | 11%           |
| Building Operation | 5%            |
| Pool               | 3%            |
|                    | 100%          |



# Solid Waste Data: Generation Rates

## Hotels/Lodging Waste Generation

CIWMB. Waste Disposal Rates for Business Types

[www.ciwmb.ca.gov/WasteChar/DispRate.htm](http://www.ciwmb.ca.gov/WasteChar/DispRate.htm)

- 2.1 tons/employee/yr
- 35 - 45% of municipal solid waste is from commercial sources

## EcoPurchasing Guide for Hotels and Motels, Univ. of Fla.

[www.ciwmb.ca.gov/WasteChar/WasteGenRates/Service.htm](http://www.ciwmb.ca.gov/WasteChar/WasteGenRates/Service.htm)

- Restaurants: 1 lb/seat/day, 17 lb/employee/day
- Hotels: 2-4 lbs/room/day of solid waste



# Solid Waste Data: Hospitality

| Component                    | CIWMB  | Mohegan                            |
|------------------------------|--------|------------------------------------|
| Food/organics                | 37.1%  | 37.5%                              |
| Grease                       |        | 1%                                 |
| Cardboard                    | 5.7%   | 7%                                 |
| Glass bottles and containers | 9.9%   | 4.5%<br>("commingled recyclables") |
| Metal                        | 3.2%   |                                    |
| Paper                        | 31.4%  | 50%<br>("trash")                   |
| Plastic                      | 10.4%  |                                    |
| Const & Demo)                | 1.2%   |                                    |
|                              | 100.0% | 100.0%                             |



# Tribal Casino P2 Assessments

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- **Six P2 assessments conducted to date in CA**
  - Pre-visit data collection
  - 1 day visit
- **Free assistance from EPA Region 9, not compliance-related**
- **Small and large casinos**
- **Report includes a “menu” of 3-5 projects**
- **Include:**
  - Cost analysis (based on facility data)
  - Challenges
  - How? - Implementation
  - Vendors/Resources





# WILDHORSEPASS

HOTEL & CASINO



#1: Lobby/Reflection Lounge/Bathrooms

#3: Pool/Bar and Garbage Dumpsters

#2: Hotel Rooms

■ Non-Gaming Areas

- LOCATED ON SECOND FLOOR**
- Shula's American Steakhouse
  - Classics with a Twist
  - Airia Nightclub
  - Fitness Center
  - The Board Room



# Mini-Assessment Exercise

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1. Pick a focus media (water, solid waste, or energy) for each area
2. Evaluate “efficiency features and opportunities” compared to your facility
  - Centrally controlled thermostats, low flow toilets
  - Is data collected? Tracked? Managed?
3. **Business Case: What data is needed?**
  - Cost analysis (based on facility data)
  - Challenges
  - Implementation
  - Vendors/Resources



# Mini-Assessment Exercise (cont.)

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- **Newly-Opened Casinos/Hotels:**
  - Look for fine tuning/shakeout issues
  - Focus on operations, then equipment
- **Older Facilities**
  - Get in on remodeling plans
  - Set up replacement programs; e.g., CFLs, LED lights
- **Find Problems**
  - Compliance
  - Ergonomics
  - Cost/Waste



# Energy Efficiency - LED Slot Machine Retrofit

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1. Reduce Energy Use
  - 40-60% less than fluorescents
2. Reduce Heat Generation
  - \$1 - \$3+ /year per LED lamp depending on rates
3. Reduce Maintenance
  - 1 to 2 hours/week more for each 100 machines that used LEDs
4. Easier/Cheaper Disposal
  - No Universal Waste/Cost



## Payback:

- 0.6 years
- \$53 retrofit
- \$86 savings/year



# Solid Waste - Hand Air Dryers

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- Eliminate cost of purchasing and changing of paper towels; (\$10,000-\$30,000/restroom/yr)
- Reduce most of the labor cost associated with managing solid waste from bathrooms.
- Eliminate housekeeping issues associated with paper towels on the floor and overflowing garbage receptacles

## Payback:

- 2 ½ months: light (100 use/day)
- 8 months: heavy (400 use/day)
- \$1,500 installation

