

# 3<sup>rd</sup> Party Development Opportunities for CHP

**California Energy Commission  
IEPR Committee Workshop**

July 23, 2009  
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**DOCKET**  
**09-IEP-1H**

DATE July 23 2009

RECD. July 27 2009



# Burns & McDonnell - Overview

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- 100% Employee Owned
- 3000 Employees
- \$1.2 Billion Revenue
- World Headquarters in Kansas City, MO
- 18 Regional Offices including San Diego and San Francisco

***Over 113 years of power generation, utility and infrastructure experience***

# Markets Best Served by CHP

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- Hospitals/Research
- Data Center/Telecommunications
- Department of Defense
- Universities and Colleges
- Municipalities

# Facilities Best Suited for CHP

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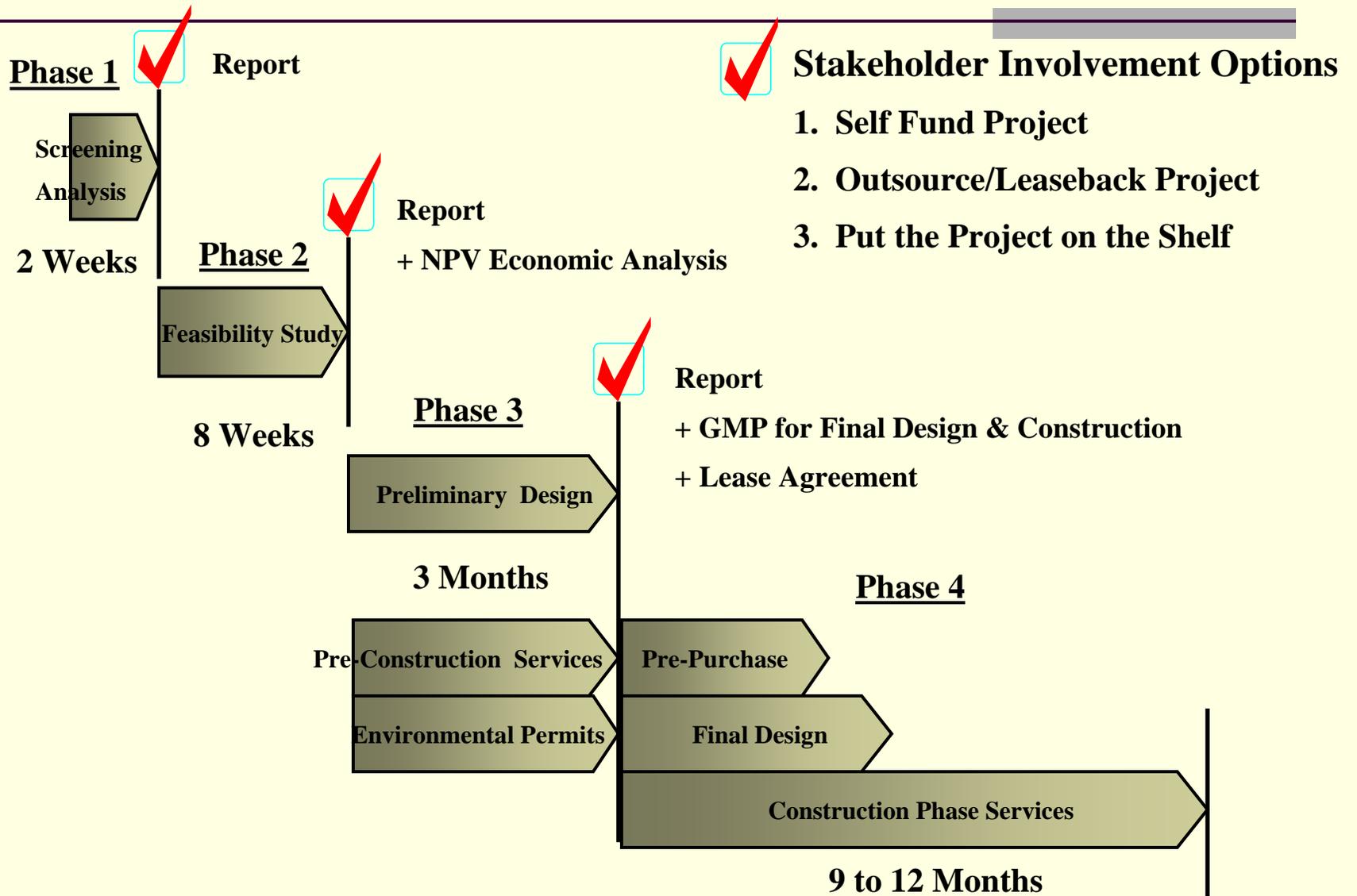
- CHP *“Best User” Profile* is:
  - Coincident electrical and thermal loads
  - 24 hour/day, 7 day/week, 365 day/year operation
  - Low seasonal variation in loads
  - High power reliability needs
- Hospitals fit the *“Best User” Profile* for Combined Heat and Power applications

# Business Drivers for CHP

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- **Cleaner Normal Power** Local generation is anticipated to provide fewer sags and surges. Conversion from primary power to grid backup is measured in “cycles” rather than “seconds”.
- **More Backup Power** Both Grid backups supply 100% of the Hospital’s needs; not just its Life Safety requirements; imagine no chillers or HVAC in August.
- **More Reliable Backup Power** Probability of failure of the traditional Hospital “grid plus backup” is 67% according to Primen Perspective’s *RX for Health Care Power Failures*, DE-PP-24, 11/2003
- **“Island” Power** In the event of a grid failure due to natural, technical, or terrorist causes, this strategic community asset will remain in operation when we need it most.
- **Reliable Normal Power** When a hospital converts to fully digital Medical Records, RFID/Bar Code Scan Drug delivery, Computerized Physician Order Entry, etc., *health care delivery will stop if the “lights go out”*.

# CHP Project Methodology



# CHP Project Development Matrix

	Phase 1	Phase 2	Phase 3	Phase 4
DB	Review energy survey and utility data; run CHP computer model to analyze economics	Develop base case, schematic design of CHP options; NPV analysis	Select CHP option; preliminary design; establish GMP; pre-construction services, permit applications	Final design procurement & construction; start-up & commissioning
FO		NPV of financing options, analysis; prepare/review bond lease	Lender proposal, negotiate lease, construction loan and sign lease agreement	Permanent loan and CHP closing
OM		Establish O&M costs	Third-party O&M proposal	Negotiate and sign O&M contract

# Financing Mechanisms

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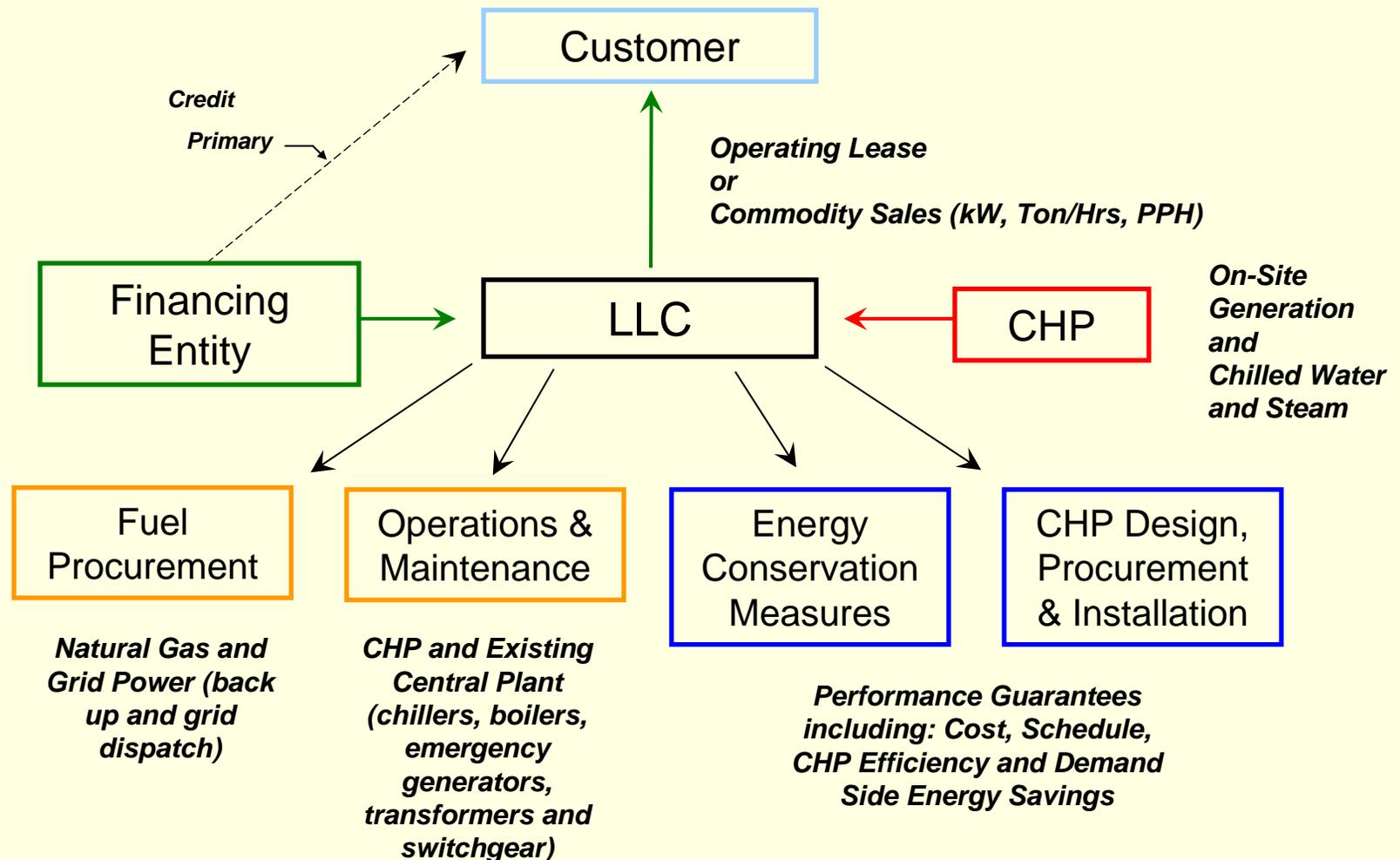
- Off Balance Sheet Financing
  - Protect the balance sheet of the borrower/lessee from underlying debt
- Financing Alternatives
  - Operating leases – defined by “*FASB 13*”
  - Capital leases – “*note and security*”
  - True lease – hybrid offering “*purchase option*”
  - Leverage lease – bond equivalent with “*no purchase option*” only “*lease renewal*”

# Outsourcing Alternatives

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- Finance, design-build, own and operate
  - Local utility company
  - Energy Services Company (ESCO)
- Terms and conditions will vary
  - Energy services agreement
  - Commodity sales agreement
- Public private partnerships
  - Public and private entities partner to benefit the community

# Typical Outsourcing Business Structure



# State Level Programs to Encourage Clean Energy

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1. Renewable Portfolio Standard (RPS)
2. Standardized Interconnection Rules
3. Public Benefit Funds (PBF) for State Clean Energy Programs
4. Utility Standby Rates
5. Output Based Environmental Regulations (OBR)

# Federal Level - Energy Improvement and Extension Act of 2008

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- Included provisions for CHP and recycled-energy projects:
  - 10% investment tax credit:
    - Applicable to project of up to 50 megawatts
    - Applicable to the first 15 megawatts
    - Worth \$1.35/MWh over project life
  - 5-year accelerated depreciation:

# Federal Level - American Recovery and Reinvestment Act

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- Provides “refundability” for CHP tax credit
- Allows “bonus depreciation” for CHP:
  - 50% of depreciation value can be taken in the first year
  - Remainder over the following four years
- Allows CHP tax credits even if projects are financed with local development bonds
- Allows biomass projects to claim a 30% investment tax credit
- Provides some \$100 billion of additional government-backed loan guarantees for clean energy projects
- Offers \$156 million of cost-share grants for recycled-energy, CHP, and industrial-efficiency projects

# Federal Level - Waxman Markey Bill Passed by the House June 26

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- Mandates GHG-emissions reduction by 83% by 2050
- Sets industrial plant energy efficiency standards
- Authorizes thermal waste energy recovery awards
- Mandates 20% clean energy by 2020, 8% from efficiency
- Expands biomass definition to reward co-firing
- Industrial rebates for GHG compliance costs
- Creates a Clean Energy Deployment Administration to help finance breakthrough technologies
- Allows CHP to qualify for energy saving performance contracts at federal buildings

# Federal Level - Proposed Tax Provisions for 2009

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- Increase investment tax credit to 30% for highly efficient CHP and recycled energy projects
- Increase the ITC's eligibility from 15 to 25 megawatts for projects of unlimited size
- Remove prohibitions against co-firing in the biomass production tax credit

# CHP - Benefits to Utilities

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- *“Demand Side Management”* costs less than constructing new conventional power plants.
- Allows for the integration of *“state-of-the-art”* technologies improving efficiency and demonstrating environmental responsibility
- Useful to Utilities for grid power management
- Avoids Utility Investment where the grid is insufficient due to congestion or in rural areas where it is underdeveloped.

# CHP at Existing Facilities...

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- May need to first consider current energy usage, efficiency, and age or condition of existing equipment- *chillers, boilers, HVAC, lighting, controls, emergency generators, etc.*
- Energy conservation measures create savings that may offset the capital cost of implementing CHP
- ESCo's offer "*performance contracting*" where they will "*guarantee*" the annual energy savings and incorporate CHP as part of the energy conservation measure program

# Questions?

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# Thank You for Your Attention

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