



Combined Heat and Power(CHP) for Apartment Buildings

**Q&As
From the 1989 NY
"Cogen Manual"**

HUD Energy Action Plan



Energy Task Force

-21 Actions

**-Number 20 is promote CHP in housing
and community development**

DOE-HUD IAA Major activities:

-Update 1989 NY Cogen Manual

**-Work with Regional Application
Centers**



The NY Cogen Manual Outline

- **Q&A (Covered here.)**
- **Pre Screening Analysis**
- **Selecting equipment**
- **Installation**
- **Management**



CHP basics, what, how and why

- **What is CHP?**
- **How is it used for multifamily housing?**
- **What are the benefits?**



Packaged CHP Systems

- **What are Packaged CHP Systems?**
- **What is modular CHP?**

Building Considerations



- How are these systems used in apartment buildings?
- Are there any limitations regarding building size?
- Are there Guidelines for estimating CHP equipment size?



Resident Considerations

- **Will the residents be inconvenienced?**
- **After installation, do the residents receive less hot water or electricity?**
- **Is the unit noisy?**



Installation Considerations

- How much space is required for a typical packaged CHP unit?
- Where are the systems usually located?
- Are CHP systems expensive to install?
- Do these systems require many approvals?



Utility Considerations

- **Why is it important to have the utility provide backup (standby) services?**
- **Why can it be important for the utility to buy the excess electricity?**
- **So, deciding to install CHP doesn't affect the relationship with the utility?**
- **Are there utility considerations that affect the economics of CHP?**



Service and Maintenance Considerations

- Will the building still have heat, hot water and electricity if the CHP system is down for repair or maintenance?
- Who maintains the system?
- Will maintenance personnel need additional training?
- Is it necessary to have an operating engineer on site?
- How are CHP systems monitored?



Electric Metering Considerations

- Will the way the building is electrically metered affect the CHP system?
- How about a building that is sub-metered?
- What does direct or master metering have to do with CHP?
- Is it possible to switch from direct to master metering? How? Is it worth it?
- Can CHP serve part of a building?



Load Considerations

- **What is "peak load?"**
- **What is "base load?"**
- **Can one large CHP system provide all the building's energy at peak load?**
- **How should a CHP system be sized?**



Fuel considerations

- Do these systems need a special type of fuel?
- What is "interruptible gas"?
- What is "firm gas"?
- What do gas rates have to do with CHP?



Electrical rate schedule considerations

- How do different electric rate schedules affect CHP?



Economic Issues

- **What makes a building a good candidate for CHP?**



General Considerations

- **Why is CHP an attractive energy conservation measure?**
- **Can CHP be combined with other improvements?**
- **How does CHP affect the state or the country?**
- **What are some of the risks?**



Environmental Considerations

- **What impact does CHP have on the environment?**
- **Are there emissions credits for installing CHP?**

Next steps



- **What is an initial screening procedure?**
- **Are there computer programs to help with the analysis?**
- **Are there sources of technical assistance?**



Interested In Cogeneration, What Next?

Complete the Economic Evaluation Worksheet to help determine if cogeneration can be an economically viable project for your building.



Hire an Engineer to do a preliminary feasibility study

Study Determines:

- approximate equipment sizing,
- costs (equipment, operating and maintenance),
- savings and paybacks
- system configuration.



Reach a Decision

Decide on whether or not it is feasible to continue with this project and with what type of equipment