

# ***“Cogeneration (CHP) in Multifamily Buildings”***

***A Program Designed for Residential Buildings***

***Presented by: Herbert E. Hirschfeld, P.E.***



***Hazel Towers, Bronx NY***

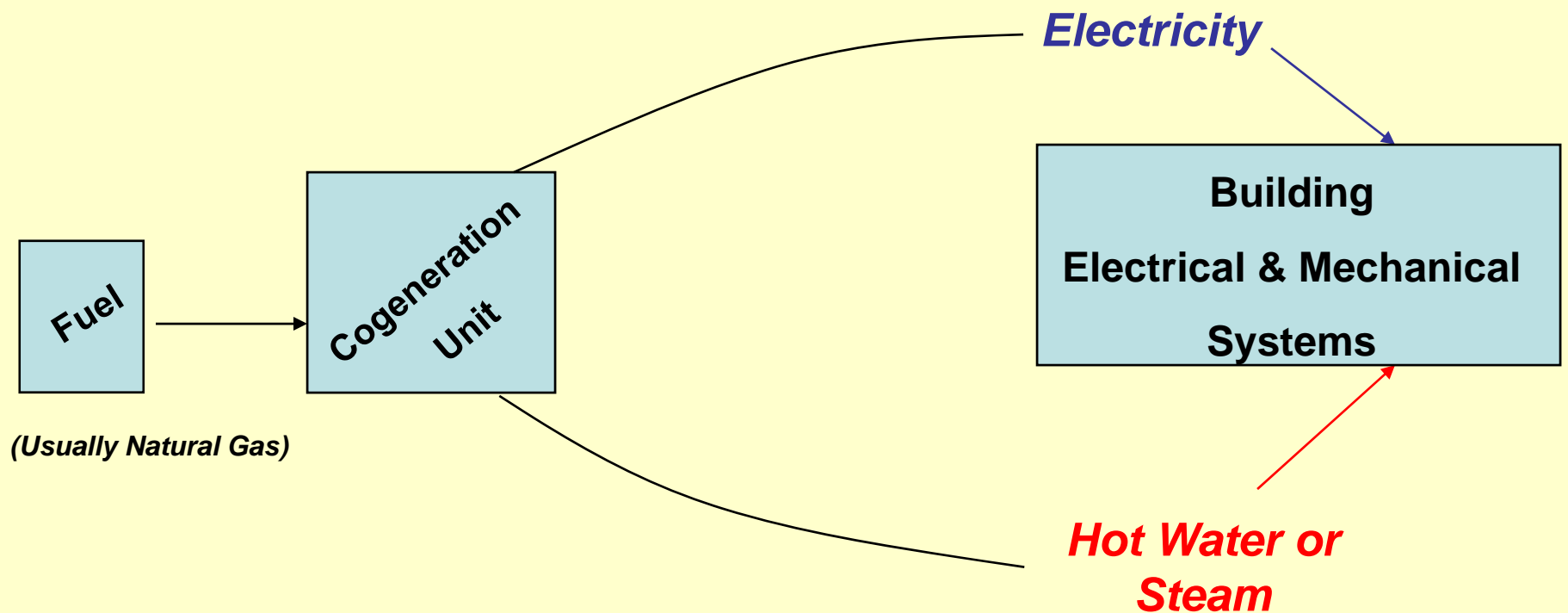


***Stevenson Commons, Bronx NY***

# What Is Cogeneration?

*From "cogenerationonline.com"*

**Cogeneration allows for efficient production of two forms of energy from a single fuel powered device. It thereby limits energy costs for residential buildings.**



# Types of Cogeneration Equipment Under Consideration

## Microturbine Cogeneration Unit

- *Inherently higher reliability due to fewer moving parts*
- *Fewer scheduled maintenance procedures ensuring more operating hours*
- *Lower maintenance costs*



# Types of Cogeneration Equipment Under Consideration

## Internal Combustion (IC) Engine-Powered Cogeneration Unit

- *Higher capacity units currently available*
- *Generally less expensive to purchase*
- *Longer track record*



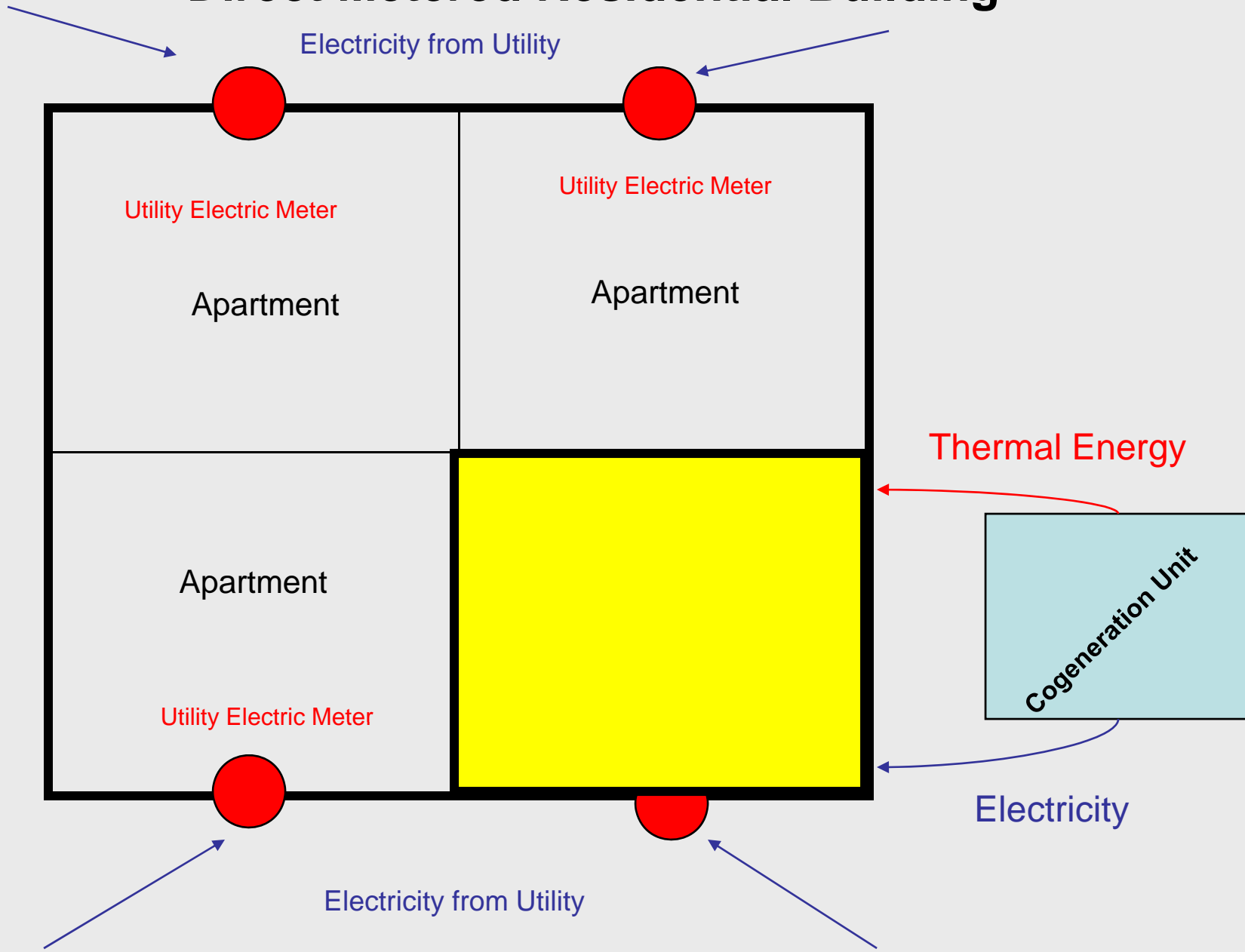
## ***Issues and Barriers to Implementation at Hazel Towers***

***To be addressed to DHCR's ORA in consideration of metering options for rent stabilized and rent controlled apartments and associated rent reductions.***

- a) Direct metering maintains PSC and Utility oversight.***
- b) Under Submetering tenants pay landlord for electricity.***

## ***How Building Electric Metering Impacts Cogeneration***

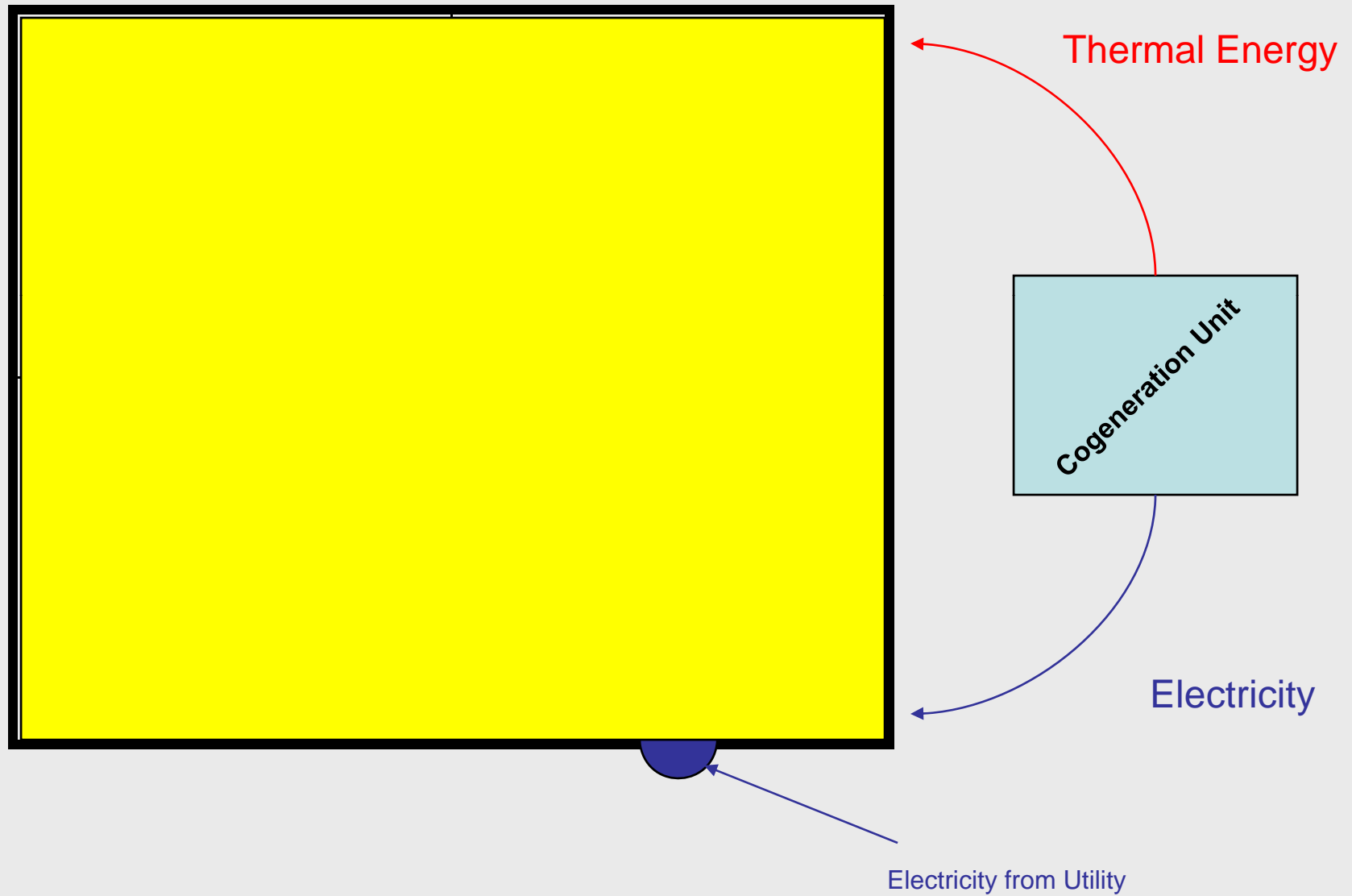
# Direct Metered Residential Building



## Why Directly Metered Residential Buildings Are Generally Poor Cogeneration Candidates

1. The Building Electric Load available to the cogeneration unit is limited by the Common Area Electric Load. The Apartments receive their electricity directly from the utility and are *not* available to the onsite cogeneration system.
2. By restricting the electric load available to the cogeneration system, the amount of thermal energy (hot water or steam) available from the cogeneration unit(s) to the building is *also limited* as this energy form is a by-product of generating electricity.

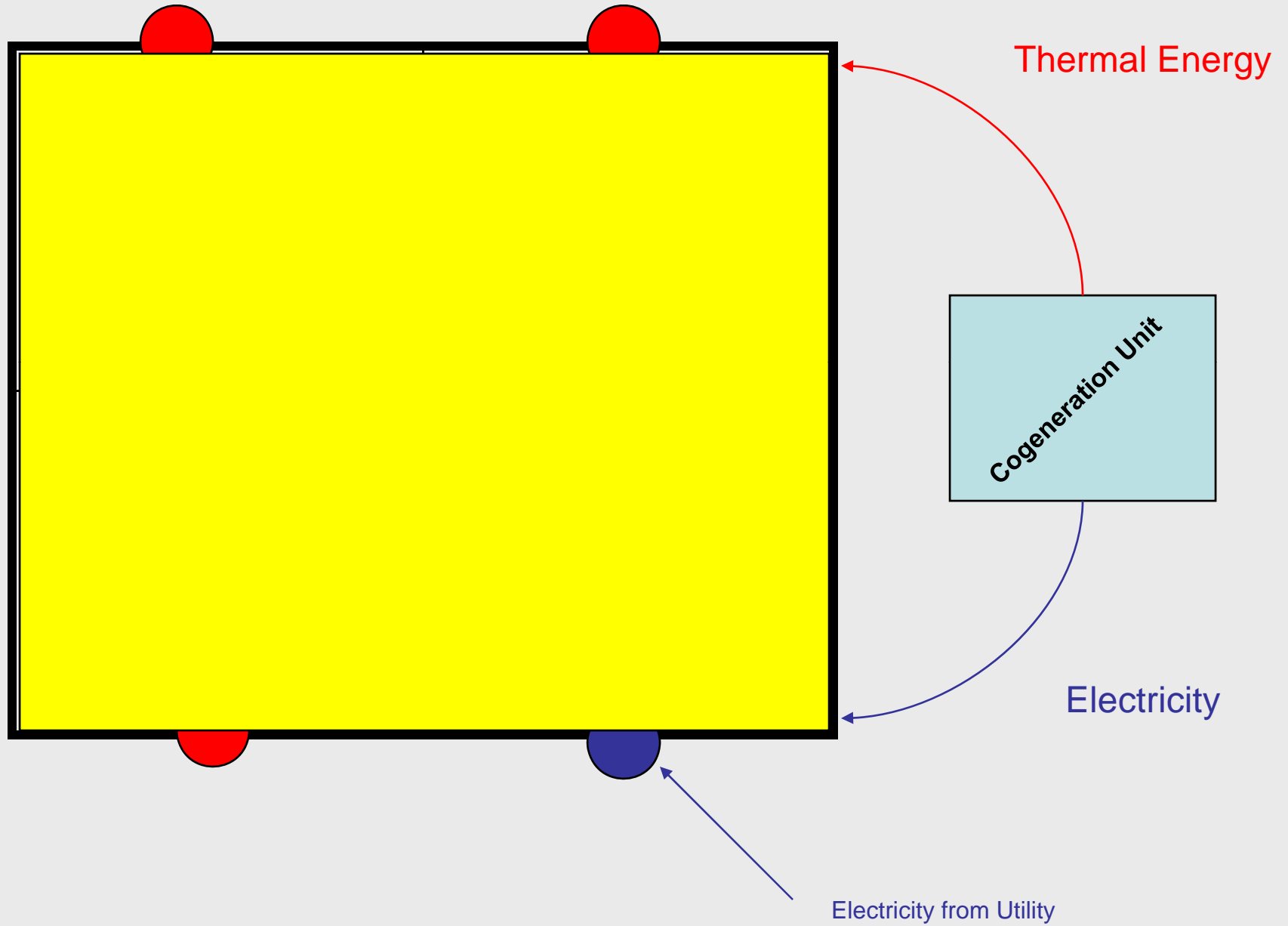
# Master Metered Residential Building



## Why Master Metered Residential Buildings Are Generally Good Cogeneration Candidates

1. The ***entire*** Building Electric Load (Apartment Sector and Common Area) is available to the cogeneration system.
2. Because the electric load available to the cogeneration unit(s) is ***not*** restricted to only satisfying the common area load, a greater amount of thermal energy (hot water or steam) from the cogeneration system can be utilized by the building.

# Submetered Residential Building



# Why Submetered Residential Buildings Are Generally Good Cogeneration Candidates

1. The ***entire*** Building Electric Load (Apartment Sector and Common Area) is available to the cogeneration system because the building continues to receive its electricity in bulk from the utility. The submeters (apartment meters) are ***not*** utility meters but belong to the building.
2. Because the electric load available to the cogeneration system is ***not*** restricted to only satisfying the common area load, a greater amount of thermal energy (hot water or steam) from the cogeneration unit(s) is available to the building.

# **Strategic Alliances**

***Common Market for both Electrical Submetering and Cogeneration are Master-Metered Residential Buildings.***



# Strategic Alliances

**Common market also includes Directly Metered residential cooperatives and condominiums which are permitted (subject to meeting New York State Public Service Commission voting requirements) to convert to Master Metered status and then implement electrical submetering and cogeneration.**

***Remember, building must be **Master Metered** in order for the apartment sector to be available to the cogeneration system.***

# **Strategic Alliances**

**Numerous buildings participating in NYSERDA sponsored cogeneration evaluations and implementations were recruited from the NYSERDA sponsored “*Submetering in Multifamily Buildings*” program.**

# **Other Related NYSERDA Residential Building Programs**

## ***Integrated Building Control Module (IBCM) Program***

- Integrates Electrical Submetering with Apartment Temperature Monitoring, Building Security and Fire Safety Systems***

## ***Comprehensive Energy Management (CEM) Services Program***

- Provides Incentives for Installation of Advanced Metering in 1-4 Family & Multi-Family Buildings in the New York Energy Smart Service Territories and for some associated assistance***

## ***Submetering in Multifamily Buildings Program***

- Provides Technical Assistance to Residential Buildings Evaluating Electrical Submetering***
- Provides for “submeteronline.com” informational website***

**[Link To “submeteronline.com”](http://submeteronline.com)**

***For more information or to request assistance for your building available from this program, you may contact:***

***Herbert E. Hirschfeld, P.E.***

**15 Glen Street, Suite 201**

**PO Box 744**

**Glen Cove, New York 11542**

**or**

***email: “cogenerationonline.com”***