



Do not submit separately. Must be incorporated in the drawing set

# EN1: Energy Cost Budget Worksheet

Must be typewritten

<b>1 Location Information</b>				
House No(s)	Street Name			
Borough	Block	Lot	BIN	CB No.
Work on Floor(s)			Apt/Condos No(s)	

<b>2 Applicant Information</b>				
Last Name		First Name		Middle Initial
Business Name			Business Telephone	
Business Address			Business Fax	
City	State	Zip	Mobile Telephone	
Email			License Number	

<b>3 Energy Modeling Information</b>
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Energy Modeling Protocol (check one):  Section 11 ECB  Appendix G PRM

Modeling Software & version: \_\_\_\_\_ Weather File: \_\_\_\_\_

Total Modeled Square Feet: \_\_\_\_\_ Conditioned Square Feet: \_\_\_\_\_

Proposed Unmet Load Hours: \_\_\_\_\_ Baseline Unmet Load Hours: \_\_\_\_\_

Proposed Site EUI (kBtu/sf): \_\_\_\_\_ Baseline Site EUI (kBtu/sf): \_\_\_\_\_

<b>4 Purchased Energy Rates</b>							
Fuel	Utility Rate Provider/ Rate Structure (i.e ConEd)	Virtual Utility Rate (\$/unit)	Baseline Design Total Charge (\$)	Virtual Utility Rate (\$/unit)	Proposed Design Total Charge (\$)	Supporting Doc. Location	Model Output Report
Electric							
Gas							
Steam							
Other:							
<b>TOTAL</b>							

This project contains on-site generation.

5 Energy Modeling Usage Summary							
	Baseline Model			Proposed Model			Model Output Location (Report)
	Electric Usage (kwh)	Gas/Steam Usage (MMBTU)	Other Usage (i.e. chilled water) (indicate units)	Electric Usage (kwh)	Gas/Steam Usage (MMBTU)	Other Usage (i.e. chilled water) (indicate units)	
Interior Lighting							
Misc. Equip.							
Space Heat							
Space Cool							
Heat Rejection							
Pumps & Misc							
Vent Fans							
Dom. Hot Water							
Exterior Lighting							
Exterior Misc.							
<b>TOTAL</b>							

**6 Energy Inputs and Supporting Documentation Index**

a Above-Grade Wall & Fenestration Areas								
	Orientation	Baseline Case		Proposed Case		Supporting Doc. Location	Model Output Report	
		Window + Wall Area (ft <sup>2</sup> )	Vertical Glazing Area (ft <sup>2</sup> ) (%)	Window + Wall Area (ft <sup>2</sup> )	Vertical Glazing Area (ft <sup>2</sup> ) (%)			
Above-Grade Wall & Vertical Glazing Area by Orientation	North							
	East							
	South							
	West							
	<b>Total</b>							
Roof & Skylight Area	Roof + Skylight Area (ft <sup>2</sup> )	Skylight Area (ft <sup>2</sup> ) (%)		Roof + Skylight Area (ft <sup>2</sup> )	Skylight Area (ft <sup>2</sup> ) (%)		Supporting Doc. Location	Model Output Report
	<b>Total</b>							

b Vertical Fenestration												
Model Input Parameter	Category (Res/Non-Res)	Item #	Baseline Case				Proposed Case				Supporting Doc. Location	Model Output Report
			Description (from ASHRAE)	Ass'y U-factor	SHGC	VLT	Description (from design)	Ass'y U-factor	SHGC	VLT		
Vertical Glazing		1										
Vertical Glazing		2										
Vertical Glazing		3										
Vertical Glazing		4										
Vertical Glazing		5										
Vertical Glazing		6										
Vertical Glazing		7										
Skylights		1										
Skylights		2										
Shading Devices			<input type="checkbox"/> No shading projections, manual shading devices, or self-shading have been modeled. <input type="checkbox"/> Any shading by adjacent structures has been modeled identically to the proposed case.				List any permanent or auto-controlled shading devices:					

How were the Proposed case framed assembly fenestration U-factors determined? (Choose one)

- NFRC testing for site-assembled fenestration
- NFRC testing for manufactured fenestration assemblies
- Table A8.2 (windows) and Table A8.1 (skylights)
- LBNL Window 5 or Window 6 calculations
- Energy simulation includes separate frame and glazing
- Other (Describe) \_\_\_\_\_

**c Envelope Assembly**

- Check if additional envelope descriptions are attached (Please use the EN-1c).
- All proposed roofs, above-grade exterior walls, below-grade exterior walls, exposed floors, slab-on-grade floors, and opaque doors were modeled as-designed and with assembly U-factors/C-factors/F-factors consistent with ASHRAES 90.1 Appendix A values.

Model Input Parameter	Space-Conditioning Category (Res/Non-Res)	Item #	Baseline Case		Proposed Case		Supporting Doc Location	Model Output Report
			Description	Assembly U-factor/ C-factor/ F-factor	Description	Assembly U-factor/ C-factor/ F-factor		
Roof Construction		1						
			Solar Reflectance	SR =	Solar Reflectance	SR =		
		2						
			Solar Reflectance	SR =	Solar Reflectance	SR =		
Above-Grade Exterior Wall Construction		1						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
Below-Grade Exterior Wall Construction		1						
		2						
Exposed Floor Construction		1						
Slab-On-Grade Floors		1						
Opaque Doors		1						
		2						

**d | Interior Lighting Power**

Check if additional lighting power forms are attached (Please use the EN-1d).

The lighting power is calculated using the (check one)  space by space method or  building area method.

Space Type (Table 9.6.1) or Building Area Type (Table 9.5.1)	Total Area Space/Blg Type (ft <sup>2</sup> )	Baseline Case			Proposed Case			Supporting Doc. Location	Model Output Report
		Auto. Controls (Yes/No)	Daylight Ctrls (Yes/No)	Modeled LPD (W/ft2)	Auto. Controls (Yes/No)	Daylight Ctrls (Yes/No)	Modeled LPD (W/ft2)		
<b>Total</b>									

<b>e   Exterior Lighting Power</b>	Baseline Design (Watts)	Proposed Design (Watts)	Supporting Doc. Location	Model Output Report
Tradable Lighting Power				
Non-Tradable Lighting Power				
5% Allowance				
Total Lighting Power				

<b>f   Process/Receptacle Equipment</b>						
Space Type (or Equipment Type)	Space Area (or # Equip.)	Equipment Power Density (W/SF) or (Equip Demand)	Modeling Parameters/ Schedule	Baseline Modeled Identically? (Yes/No)	Supporting Doc. Location	Model Output Report
<b>TOTAL</b>						

<b>g   Service Hot Water Systems</b>						
Service Hot Water Heaters						
Model Input Parameter	Baseline Design	Units	Proposed Design	Units	Supporting Doc Location	Model Output Report
System Type & Fuel						
Input Rating						
Efficiency						
Storage Volume		Gal		Gal		
Storage Temperature		°F		°F		
Peak HW Demand		GPM		GPM		
Number of Primary DHW pumps		#		#		
Primary DHW Pump Power		KW		KW		
Primary DHW Pump Control						

<b>h   HVAC Narrative. Please provide a brief narrative of the building's HVAC systems.</b>	

<b>i</b>	<b>Air-Side HVAC</b>
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Each individual system may be entered separately, or multiple systems may be grouped together if all input parameters identified with an (\*) are similar.

Check if additional Air-Side HVAC forms are attached (Please use the EN-1i).

Model Input Parameter	HVAC System / Group (BASELINE DESIGN)		HVAC System / Group (PROPOSED DESIGN)		Supporting Doc. Location	Model Output Report
	Description	Units	Description	Units		
Air-Side HVAC Systems						
System Description	Baseline System Description & System #:					
System Designation(s)						
# of Similar Systems						
Total Cooling Capacity						
*Table 6.8.1 Unitary Cooling Capacity Range						
*Unitary Cooling Eff. (EER or SEER)						
*Unitary Cooling Part-load Eff. (if applicable)						
Total Heating Capacity						
*Table 6.8.1 Unitary Heating Capacity Range						
*Unitary Heating Efficiency						
*Fan Control						
Supply Airflow		cfm		cfm		
Outdoor Airflow		cfm		cfm		
*Demand Control Ventilation						
*Economizer High-Limit Shutoff (°F)						
Exhaust Air Energy Recovery Systems						
*Exhaust Air Energy Recovery Effectiveness						
Supply Fan Power		kW		kW		
Return/Relief Fan Power		kW		kW		
Exhaust Fan Power		kW		kW		
System Fan Power		kW		kW		
<b>Allowed Fan Power:</b>		kW		kW		
Other (describe)						
Other (describe)						
Other (describe)						
Other (describe)						

<b>j</b>	<b>Water-Side HVAC – Chilled Water</b>
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Check if additional Chiller HVAC forms are attached (Please use the EN-1j).

Model Input Parameter	HVAC System / Group (BASELINE DESIGN)		HVAC System / Group (PROPOSED DESIGN)		Supporting Doc. Location	Model Output Report
	Description	Units	Description	Units		
<b>Chilled Water</b>						
# and Type of Chillers <i>(and capacity of chiller if more than 1 type or size)</i>						
Total Chiller Capacity						
Chiller Efficiency - Full Load						
Chiller Efficiency - Part Load						
Chilled Water (CHW) Supply Temp		°F		°F		
CHW ΔT		°F		°F		
CHW Supply Temp Reset Parameters						
CHW Loop Configuration						
Number of Primary CHW Pumps		#		#		
Primary CHW Pump Power						
Primary CHW Pump Flow		gpm		gpm		
Primary CHW Pump Control						
Number of Secondary CHW Pumps		#		#		
Secondary CHW Pump Power						
Secondary CHW Pump Flow		gpm		gpm		
Secondary CHW Pump Control						
Water-Side Economizer						
Water-Side Energy Recovery						
Other (describe)						
Other (describe)						
Other (describe)						
Other (describe)						



**k | Water-Side HVAC – Cooling Tower & Condenser Water**

Check if additional Cooling Tower & Condenser Water forms are attached (Please use the EN-1k).

Model Input Parameter	HVAC System / Group (BASELINE DESIGN)		HVAC System / Group (PROPOSED DESIGN)		Supporting Doc. Location	Model Output Report
	Description	Units	Description	Units		
Cooling Tower & Condenser Water						
Number of Cooling Towers / Fluid Coolers						
Cooling Tower Fan Power						
Cooling Tower Fan Control						
Condenser Water (CW) Leaving Temp		°F		°F		
CW ΔT		°F		°F		
CW Loop Temp Reset Parameters						
Number of CW Pumps		#		#		
CW Pump Power						
CW Pump Flow		gpm		gpm		
CW Pump Control						
Other (describe)						
Other (describe)						
Other (describe)						
Other (describe)						

**I | Water-Side HVAC – Hot Water/Steam**

Check if additional Hot Water/Steam forms are attached (Please use the EN-1).

Model Input Parameter	HVAC System / Group (BASELINE DESIGN)		HVAC System / Group (PROPOSED DESIGN)		Supporting Doc. Location	Model Output Report
	Description	Units	Description	Units		
Hot Water/Steam						
Number and Type of Boilers						
Total Boiler Capacity						
Boiler Efficiency						
Hot Water or Steam (HHW) Supply Temp		°F		°F		
HHW ΔT		°F		°F		
HHW Temp Reset Parameters						
HHW Loop Configuration						
Number of Primary HHW Pumps		#		#		
Primary HHW Pump Power						
Primary HHW Pump Flow		gpm		gpm		
Primary HHW Pump Control						
Number of Secondary HHW Pumps		#		#		
Secondary HHW Pump Power						
Secondary HHW Pump Flow		gpm		gpm		
Secondary HHW Pump Control						
Other (describe)						
Other (describe)						
Other (describe)						
Other (describe)						

m Geothermal System						
Model Input Parameter	HVAC System / Group (BASELINE DESIGN)		HVAC System / Group (PROPOSED DESIGN)		Supporting Doc. Location	Model Output Report
	Description	Description	Units			
Geothermal Systems						
Type of Geothermal system	N/A					
Soil Conductivity (if applicable)	N/A					
Geothermal source design temperature - summer	N/A			°F		
Geothermal source design temperature - winter	N/A			°F		
Geoexchange loop design fluid supply temperature - cooling	N/A			°F		
Geoexchange loop design fluid supply temperature -heating	N/A			°F		
Geoexchange loop - operating temperature	N/A					
Geothermal energy transfer effect	N/A					
Geothermal Loop Pumping Configuration	N/A					
Number of Geothermal Loop Pumps	N/A			#		
Geothermal Loop Pump Control	N/A					
Geothermal Pump Power	N/A			W/gpm		
Geothermal Loop Flow	N/A			gpm		
Geothermal Air-side Efficiency curves	N/A					
Other (describe)						
Other (describe)						
Other (describe)						
Other (describe)						

n Combined Heat & Power Systems						
Model Input Parameters	HVAC System / Group (BASELINE DESIGN)	HVAC System / Group (PROPOSED DESIGN)			Supporting Doc. Location	Model Output Report
	Description	Description	Units			
Combined Heat & Power Systems						
CHP: Type of generator	N/A					
Quantity of CHP generators	N/A					
Total capacity of CHP generators (kW) at design conditions	N/A			kW		
CHP: Thermal efficiency (%) at design conditions	N/A			%		
CHP: Electrical efficiency (%) at design conditions	N/A			%		
CHP: Controls / Schedule	N/A					
CHP: Fuel Source	N/A					
CHP: Where is the recovered heat used? (e.g. gas absorption chillers, hot water distribution loop, etc.)	N/A					
CHP: Backup heat source when waste heat from CHP is unavailable? (e.g. fossil fuel boilers)	N/A					
CHP: Parasitic losses (e.g. air handling unit to cool the intake air)	N/A					
Other (describe)						
Other (describe)						
Other (describe)						
Other (describe)						

Falsification of any statement is a misdemeanor under the NYC Administrative Building Code and is punishable by a fine or imprisonment, or both. It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both.

Name (please print)

Signature	Date
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P.E. / R.A. Seal (apply seal, then sign and date over seal)