Required Treatment of District Thermal Energy in LEED-NC version 2.2 and LEED for Schools

Version 1.0 May 28, 2008

Administrative

All LEED-NC v2.2 or LEED for Schools projects that register with USGBC on or after May 28, 2008 are required to follow this guidance if the project building will use district thermal energy. All LEED-NC v2.2 or LEED for Schools projects that registered before May 28, 2008 are allowed to follow this guidance but are not required to.

This document represents the initial version of the district thermal energy guidance. USGBC expects to refine and improve it over time. To submit a suggestion for improving this document, send an e-mail to leedinfo@usgbc.org. Please reference this document in the subject line of your e-mail.

Overview

A typical building has its own energy conversion plants (chillers, boilers, furnaces) that provide heating and cooling energy, but some buildings are connected to a district thermal energy system that provides that energy. Generally such district energy systems are designed for high levels of energy efficiency or to use less environmentally damaging energy sources, but they may be old and have poor part-load performance, high parasitic energy consumption, or thermal losses. From the global environmental perspective it doesn't matter whether the building heating or cooling is generated within the building itself or in a district energy plant and delivered by a thermal distribution system – a green building should properly account for the performance of a district system if it's connected to one.

The intent of this document is to clarify whether and to what degree project teams must account for a district energy system in the scope of the prerequisites and credits in version 2.2 of the LEED for New Construction and Major Renovations Rating System (LEED-NC) and LEED for Schools. This document defines requirements that apply to all such district energy systems, whether new or pre-existing, or whether owned by the project building's owner or another entity. This document does not apply to projects using earlier versions of LEED-NC unless they are using v2.2 credit substitution for the relevant credits. Projects using versions 2.1 or earlier of the LEED-NC credits shall ignore the effects of the district energy system. This document does not change the usage of prerequisites or credits – all prerequisites are still required, and all credits are still optional[1].

Treatment of combined heat and power systems in an energy model is addressed by a previous policy document "**CHP Calculation Methodology for LEED-NC v2.2 EA Credit 1,"** which describes how to account for cogeneration effects in LEED's energy efficiency credit. The CHP document offers additional, optional guidance that the project team may use in concert with this document if appropriate. However, this district thermal energy document supersedes the CHP document; if the two documents conflict on any provisions for a CHP in a district thermal energy system, this document governs.

The only portions of LEED-NC affected by the presence of a district energy system are the Energy and Atmosphere prerequisites and credits. Other LEED-NC credit categories are unaffected. Also, the

[1] except EA credit 1, which has a 2-point minimum requirement

requirements in this document apply only to the satellite buildings served by the central plant building; the central plant building itself is treated as an ordinary building in LEED-NC.

Terminology

District Energy System (DES) – a central energy conversion plant and transmission and distribution system that provides thermal energy to a group of buildings (heating via hot water or steam, and/or cooling via chilled water). An example is a central cooling plant on a university campus. This definition includes only thermal energy systems; central energy supply systems that provide only electricity are excluded from this definition.

Upstream equipment – all heating or cooling systems, equipment, and controls associated with the DES, but not part of the project building's thermal connection or interface with the DES. This includes the central energy plant and all the transmission and distribution equipment associated with transporting the thermal energy to the project building and/or site.

Downstream equipment – all heating or cooling systems, equipment, and controls located within the project building and/or on the project site associated with transporting the thermal energy of the DES into heated or cooled spaces. This includes the thermal connection or interface with the DES, secondary distribution systems in the building, and terminal units.

EA prerequisite 1 – Fundamental Commissioning

EA credit 3 – Enhanced Commissioning (if pursued)

EAp1

All downstream equipment is included in the scope of EAp1. Such equipment includes but is not limited to heat exchangers, steam pressure reduction stations, pumps, valves, pipes, building electrical services, and controls.

All upstream equipment is *excluded* from the scope of EAp1.

EAc3 (if pursued)

All downstream equipment is included in the scope of EAc3. Such equipment includes but is not limited to heat exchangers, steam pressure reduction stations, pumps, valves, pipes, building electrical services, and controls.

All upstream equipment is *included* in the scope of EAc3 if the following conditions are true for the project building; otherwise upstream equipment is *excluded* from the scope of EAc3:

- the project building's gross floor area is greater than 50,000 square feet, and
- the DES supplies energy constituting more than 20% of the project building's annual energy cost, as determined from the Proposed Case modeling run of the EAc1 Step 2 scenario (Aggregate Building / DES) described in the EAc1 section of this document. For projects not required to run the Step 2 model, the Proposed Case run from the Step 1 scenario (Building stand-alone) is used. Projects that use no energy model shall assume the DES supplies at least 20%.

AND EITHER

- the project building is pursuing any points under EAc1 using the performance path (energy model) beyond the minimum number required,

OR

- The project building's connected load is 50% or more of the DES total connected load or expected connected load at the date of the building's substantial completion.

All upstream DES equipment subject to EAc3 requirements may show compliance with EAc3 using either of the following options:

1. If the DES is new, being upgraded, or conditions are otherwise suitable – commissioning or recommissioning of the DES equipment has taken place within the past five years of the date of the project building's substantial completion (see specific requirements under "interpretations" below), or
2. If the DES is pre-existing and in ongoing operation – show that preventive maintenance, corrective maintenance, and efficiency monitoring programs have been in place for the DES equipment that ensure ongoing DES energy efficiency performance meets or exceeds the DES design intent. Show that DES energy efficiency performance has been tested and recorded under those programs within the past five years of the project building's substantial completion. Any reasonable efficiency metric may be used for this purpose, such as overall system COP, kW/ton, etc.

Interpretations

Commissioning of upstream equipment applies to the entire DES serving the building, including both the central plant and the transmission and distribution systems.

Commissioning applies only to the DES services the project building is using. For example, if the building is using only the heating services of a district heating and cooling plant, then only the heating systems of the DES must be included in the scope of EAc3.

If option 1 (commissioning) is chosen above, use the following guidance to define the specific commissioning requirements. A DES that is five years old or less at the date of the project building's substantial completion is considered "new" construction and is to be commissioned in accordance with the requirements of LEED-NC v2.2 EAc3. A DES greater than five years old is considered to be "existing" and is to be commissioned in accordance with the requirements of LEED for Existing Buildings: Operations &Maintenance (2008 version) EA Credit 2.2 or 2.3.

EA prerequisite 2 – Minimum Energy Performance
EA credit 1 – Optimize Energy Performance

Table 1: Summary of EAp2 / EAc1 Compliance Paths for DES

	Prescriptive	Performance
EAp2	ASHRAE 90.1-2004: • Meet all mandatory measures for downstream equipment • Meet all prescriptive requirements for downstream equipment	ASHRAE 90.1-2004: • Meet all mandatory measures for downstream equipment AND do either of the following • Complete ASHRAE 90.1-2004 ECB Models (Chapter 11) **OR** • Complete the EAc1 analyses described under "EAc1 general path" below to document performance
EAc1 2-point minimum (if required)*	• See EAc1 general path below	Complete an energy model using the **Building stand-alone scenario** described in "EAc1 general path" below
EAc1 general path	• Meet all credit requirements for downstream equipment for any of the EAc1 prescriptive Options • Meet all credit requirements for upstream equipment in cases where the referenced standards specifically covers upstream equipment; otherwise ignore upstream equipment	Complete 2 energy models using the following methods: • Step 1: **Building stand-alone scenario** - document performance of project building alone, with upstream equipment modeled as cost neutral • Step 2: **Aggregate building / DES scenario** – document combined performance of the building and central plant by including the performance of upstream equipment

* Projects registered after 06/26/2007 must achieve a minimum of 2 points in EAc1

Minimum requirements – EAp2

All downstream equipment is always included in the scope of EAp2 and EAc1. Such equipment includes but is not limited to heat exchangers, steam pressure reduction stations, pumps, valves, pipes, building electrical services, and controls.

The proposed Building must be compliant with EAp2 without the effect of the DES. To demonstrate compliance, use the worksheets in the ASHRAE 90.1-2004 User's Manual based on the standard's mandatory requirements and either the prescriptive path or performance path. If the performance path is used to demonstrate minimum compliance and the project is pursuing points under EAc1, then the "Building stand-alone" scenario modeled for EAc1 may be used for demonstrating EAp2 performance compliance (see detailed guidance below). If the Energy Cost Budget Method is used for documenting performance compliance, Proposed and Baseline Buildings are defined based on purchased energy costs

in the energy model per ASHRAE 90.1 2004, Section 11 with no local boilers or chillers, i.e., the DES energy source is held cost-neutral in the model. The EAp2 Submittal Template must be completed to verify compliance.

Minimum Requirements - 2-point minimum in EAc1 (if applicable)

This is required for all projects that registered for LEED after 26 June 2007.

Prescriptive options – Project teams using any prescriptive option to achieve the 2-point minimum requirement shall document that the project complies without the effect of the DES. In cases where the applicable reference standard listed in the LEED Rating System specifically includes the effects of upstream DES equipment, additional documentation shall be provided verifying that the project also achieves the 2-point minimum requirement when the upstream DES equipment is included.

Performance option – Project teams using the performance compliance option must verify the 2-point minimum is met without the effects of DES (Step 1 - Building stand-alone scenario). Follow the modeling guidelines and requirements in ASHRAE standard 90.1-2004 Appendix G, except as noted under "Energy Model Implementation" below.

EAc1 – beyond the 2-point minimum

Prescriptive options – project teams using any prescriptive option to earn additional EAc1 points shall include or exclude effects of upstream DES equipment as specified in the applicable reference standard listed in the LEED Rating System. If the reference standard does not specify either approach, the upstream effects shall be excluded.

Performance option – project teams using a whole-building energy model shall include the effects of upstream DES equipment in the energy model (Step 2 – Aggregate Building / DES scenario). Follow the modeling guidelines and requirements in ASHRAE standard 90.1-2004 Appendix G, except as noted under "Energy Model Implementation" below.

Energy Model Implementation - Treatment of heating/cooling equipment

Model for Step 1 (Building stand-alone scenario):

In Step 1 the energy model's scope accounts for only downstream equipment. This scenario is modeled in accordance with ASHRAE 90.1-2004 Appendix G requirements with the following exceptions:

1. The energy source is modeled as purchased energy in both the Proposed and Baseline buildings in order to hold the DES cost-neutral in the model (Table 2 below).
2. Where necessary, building Baseline HVAC system types from Tables G3.1.A and G3.1.B are modified to be consistent with the purchased energy source (Table 3 below). Any system parameters not specifically referenced in Table 3 are modeled as specified in Appendix G.

Table 2: Building stand-alone scenario - energy source

	Baseline	Proposed
district heating	purchased heat	purchased heat
district cooling	purchased chilled water	purchased chilled water

Table 3: Building stand-alone scenario - secondary equipment (distribution and terminal units)

Scope of DES	Baseline	Proposed
district heating only	Same system type and system descriptions as listed in Tables G.3.1.A and G3.1.1B, except for heating type (energy source)	As Designed*
district cooling only	Same system type and system descriptions as listed in Tables G.3.1.A and G3.1.1B, except: • System 1 & 2 – constant volume fan coil unit with hot water fossil fuel boiler • System 3 & 4 – constant volume single zone air handler with fossil fuel furnace and no reheat • Use System 7 in place of System 5 • Use System 8 in place of System 6	As Designed*
district heating and district cooling	Same system type and system descriptions as listed in Tables G.3.1.A and G3.1.1B, except: • System 1 – constant volume fan coil unit • System 3 – constant volume single zone air handler with no reheat • Use System 7 in place of System 5	As Designed*

* For conditioned spaces where either a heating or cooling system has not been included in the design, the guidance in Table G3.1(10) must be followed for the Baseline and Proposed Case.

Model for Step 2 (Aggregate Building / DES scenario):

In Step 2 the energy model's scope accounts for both downstream equipment and upstream equipment. Step 2 is required only for project buildings pursuing optional EAc1 points beyond the minimum number required (either zero or two points, depending on project registration date). For such projects the secondary equipment within the building is modeled as described in Table 3 above (i.e., the same way as in Step 1). However, the energy source is no longer modeled as cost-neutral purchased energy; rather, a virtual DES-equivalent plant for the Proposed case is constructed and compared to a code-compliant on-site plant for the Baseline case (Table 4). The Proposed case modeling requirements differ from those in ASHRAE standard 90.1-2004 Appendix G; however, the Baseline case is modeled as instructed in Appendix G.

Table 4: Aggregate building / DES modeling guidance – energy source

district heating	baseline	on-site heating plant or fossil fuel furnaces as defined in ASHRAE 90.1-2004 Appx. G, tables G3.1.1A and G3.1.1B, representing code minimum efficiency
	proposed	virtual on-site hot water or steam boiler representing upstream DH system
district cooling	baseline	on-site cooling plant or packaged cooling as defined in ASHRAE 90.1-2004 Appx. G, tables G3.1.1A and G3.1.1B, representing code minimum efficiency
	proposed	virtual on-site chiller representing upstream DC system

Efficiency calculation

The energy model for Step 2 shall specify the efficiencies of the energy sources as follows:

Baseline building, heating or cooling: use the nominal rated efficiencies for the appropriate system as instructed in Appendix G and as defined in Paragraph 6.8, Minimum Equipment Efficiency Tables. Model the actual operating inefficiencies and part-load performance for all equipment and systems using the rules and procedures defined in Appendix G.

Proposed building, heating: use a virtual heating plant with the same seasonal heating efficiency of the entire upstream DES heating system as derived from monitored data or an engineering analysis. It is permissible to account for the actual operating inefficiencies in the DES heating plant itself by modeling part-load conditions based on the rules and procedures defined in Appendix G.

Proposed building, cooling: use a virtual chiller plant with the same seasonal cooling efficiency as the entire upstream DES cooling system as derived from monitored data or an engineering analysis, including the separate local secondary or tertiary pumps if proposed. It is permissible to account for the actual operating inefficiencies in the DES cooling plant itself by modeling part-load conditions based on the rules and procedures defined in Appendix G.

The DES central plant itself shall always be modeled as a total, entire unit. When new chillers or boilers are added to an existing plant, their performance shall be combined with that of the pre-existing chillers or boilers to derive the overall plant-average performance.

Transmission and distribution system: secondary pumping energy, leaks, and thermal losses between the DES central plant and the satellite building in both directions must be accounted for in all cases where they apply. Projects shall use actual DES operational data if the DES is pre-existing, or for new DES's design estimates based on expected operation may be substituted.

Default efficiencies

Actual efficiency performance data on the DES serving the project building is preferred, based on either ongoing operations (existing DES) or design specifications (new DES). If the project team cannot obtain the actual performance data, it is permissible to use the following default seasonal performance values. These values are conservative, intended to represent a DES with relatively low efficiency. A well-

designed, maintained, and operating DES will generally offer better performance than the defaults listed here. Default values are as follows:

- DES heating plant – 70% (Higher Heating Value) for the total boiler plant efficiency.
- DES cooling plant – COP of 4.4 for the total cooling plant efficiency (including cooling towers and primary pumps).
- Thermal distribution losses – the following values may be used to account for seasonal thermal distribution losses including minor leaks and/or condensate losses (but not pumping energy, which must be accounted for separately where it applies): chilled water district cooling 5%; hot water district heating 10%; closed loop steam systems 15%; open loop steam systems 25%. Steam systems that are partially open/closed must prorate between the above 15% and 25% losses in accordance with the fraction of expected or actual condensate loss.

Energy Model Implementation – Energy rates

Energy rates for both the Proposed and Baseline Buildings must be identical to each other for the corresponding energy types, and are defined in the models as follows:

Step 1 (Building stand-alone scenario) – energy rates for all non-DES-supplied energy are assigned using the normal ASHRAE and LEED modeling rules, using the local utility rate schedules as they would normally apply to the project building. All DES-supplied energy is modeled using the actual purchased energy rates if it is purchased from a third-party organization (i.e., private DES utility or municipal system). If the DES-supplied energy is not actually purchased, (e.g., if a single organization owns or operates both the DES and the satellite project building, or if the DES uses free qualifying renewable energy generated on-site), use approximations of local market rates as explained in the LEED-NC v2.2 Reference Guide.

Step 2 (Aggregate Building / DES scenario) – in this modeling scenario the DES-supplied energy is not modeled as cost-neutral purchased energy, and thus purchased DES rates (chilled water, steam, hot water) are ignored. Fuel and electricity rates are assigned using the local utility rate schedules as they would normally apply to the building and using the normal ASHRAE and LEED modeling rules. For the Baseline Building the rates are applied to the code-compliant heating or cooling plant as instructed in Appendix G, and for the Proposed Building the rates are applied to the virtual plant according to the actual energy sources used in the upstream DES (electricity, gas, oil, etc.).

Energy Model Implementation - Run and compare the proper scenarios

Assess the number of potential points earnable using the performance tiers listed in the Rating System. Compliance with the modeling requirements in ASHRAE 90.l-2004 Informative Appendix G is required, except where modified in this document. If pursuing only the minimum number of required points under EAc1 (either zero or two points, depending on project registration date), only Step 1 must be followed, and only the Step 1 documentation needs to be loaded onto LEED Online. If pursuing more than the minimum number of points, both Steps 1 and 2 below must be followed, and the results from both scenarios must be posted to LEED Online in order to document EAc1 performance.

Step 1 (Building stand-alone scenario): Perform an initial model run on the project building to determine the number of EAc1 points earned without the effect of the DES, i.e., by modeling only downstream equipment and holding the DES cost-neutral in the model.

Step 2 (Aggregate building / DES scenario): Perform a second model run that incorporates the effects of the DES on the heating and/or cooling systems as described above (i.e., modeling both downstream

and upstream equipment). Both the DES central plant and the transmission and distribution network shall be accounted for using the above guidance. This may be procedurally implemented in any technically reasonable manner, e.g., a chiller or boiler efficiency correction coefficient within the model to account for upstream energy losses, post-processing of the energy model results, etc. The procedural method chosen must be fully explained in the LEED certification application. Compare the energy model results for the project building using the runs from steps 1 and 2.

Under Step 2 the EAc1 LEED Online documentation submittal must include two versions of the EAc1 Submittal Template. The EAc1 template containing the results from Step 1 (Building stand-alone scenario) is uploaded as backup documentation. The EAc1 template containing the results from Step 2 (Aggregate Building / DES Scenario) is loaded as the primary LEED Submittal template.

The total number of EAc1 points achievable in Step 2 is limited to 4 points above the number determined in Step 1, up to a maximum of 10 total points for the project. To manually edit the number of points documented in the Step 2 template to reflect this limitation, click the "Alternative Compliance Points Documented" checkbox on the last page of the submittal template, and indicate in the narrative: "Points are limited to X points in accordance with the Required Treatment of District Thermal Energy" document.

Provide a narrative that derives the claimed DES performance and explains how it is used in the energy model. Also, upload all other documents required in the EAc1 submittal template "Documentation Description Log" for both the Step 1 and Step 2 scenarios.

EA credit 2 – On-site Renewable Energy (if pursued)

Renewable energy sources as defined in LEED-NC v2.2, EAc2 (e.g., electricity, heat, or chilled water energy produced from photovoltaics, solar thermal systems, wind turbines, geothermal, low-impact hydro, wave/tidal, untreated wood waste, agricultural crops or waste, animal and other organic waste, and landfill gas) are the only renewable sources allowed for credit under EAc2. The use of air; ocean, lake, or river water; or ambient earth for a thermal heating or cooling sink is categorized as an efficiency strategy in LEED and falls under EAc1. The proper treatment of renewable energy in LEED certification application calculations is covered in the LEED-NC v2.2 Reference Guide.

For projects documenting EA credit 1 using the performance method (energy model), qualifying renewable energy sources according to the definition above used in a DES may earn points in EAc2, i.e., they count as "on-site" renewable energy for the project building. Performance for EAc2 is calculated in the normal way, based on the fraction of the project building's annual energy cost that is renewable energy. The project building's total annual energy cost shall be derived from the Proposed Case modeling run of the EAc1 Step 2 (Aggregate Building / DES) scenario described in the EAc1 section of this document. For projects not required to run the Step 2 model, the Proposed Case run from the Step 1 model is used.

The fraction of renewable energy contributed by the DES depends in turn on how much energy the DES delivers to the building, how much of the building's load the DES supplies, and how much of the DES energy source is renewable. Calculate the overall performance by multiplying together the following three factors:

1. The fraction of the estimated or actual DES total energy use provided by qualifying renewable sources
2. The fraction of the estimated or actual DES total delivered energy that is supplied to the project building
3. The fraction of the project building's annual energy cost that is supplied by the DES, i.e., (DES energy supplied to building * unit energy (fuel or electricity) cost of the DES) / total building energy cost over all fuel types

If renewable energy contributions from the DES are applied to the project, a letter must be provided from the DES owner or operator verifying that the renewable energy reported (in # 1 above) is allocated specifically to the DES generation and/or distribution equipment, and confirming that no renewable energy allocated specifically to the DES central plant building, if any (in a separate LEED application), is being counted towards the renewable energy contribution of the satellite project building. The letter must also confirm that no renewable energy is being double-counted among any satellite project buildings (in separate LEED applications).

For projects without an energy model, EAc2 credit may not be taken for renewable energy sources used for the DES upstream of the project. However, credit may be taken for on-site renewable energy associated with the project building itself. In this situation project teams follow the standard guidance provided in the LEED v2.2 Reference Guide for documenting renewable energy percentage using the DOE Commercial Building Energy Consumption Survey (CBECS) data.

EA prerequisite 3 – Fundamental Refrigerant Management
EA credit 4 – Enhanced Refrigerant Management (if pursued)

EAp3

Follow the provisions of the LEED-NC Application Guide for Multiple Buildings and On-Campus Building Projects, even if the LEED project includes only a single building.

EAc4 (if pursued)

Follow the provisions of the LEED-NC Application Guide for Multiple Buildings and On-Campus Building Projects, even if the LEED project includes only a single building.

EA credit 5 – Measurement & Verification (if pursued)

All downstream equipment is included in the scope of EAc5. Such equipment includes but is not limited to heat exchangers, steam pressure reduction stations, pumps, valves, pipes, building electrical services, and controls.

All upstream equipment is *included* in the scope of EAc5 if the following conditions are true for the project building; otherwise upstream equipment is *excluded* from the scope of EAc5:

- the project building's gross floor area is greater than 50,000 square feet, and
- the DES supplies energy constituting more than 20% of the project building's annual energy cost, as determined from the Proposed Case modeling run of the EAc1 Step 2 scenario (Aggregate Building / DES) described in the EAc1 section of this document. For projects not required to run the Step 2 model, the Proposed Case run from the Step 1 scenario (Building stand-alone) is used. Projects that use no energy model shall assume the DES supplies at least 20%.

AND EITHER

- the project building is pursuing any points under EAc1 using the performance path (energy model) beyond the minimum number required,

OR

- The project building's connected load is 50% or more of the DES total connected load or expected connected load at the date of the building's substantial completion.

Interpretations

If required according to the criteria above, M&V of upstream DES equipment shall be implemented to the extent necessary to verify the DES performance claimed under EAc1, and accordingly applies only to the DES systems that the building is utilizing. For example, if the building is utilizing only the heating services of a district heating and cooling plant, then only the heating systems of the DES are to be included in the M&V scope.

This guidance does not necessarily require that any metering be installed on upstream DES equipment itself according the IPMVP protocol. Rather, the M&V Plan for the project building must include metering of the site energy delivered to the project building by the DES (generally using a BTU meter), as well as full accounting of upstream DES whole-system energy performance so that overall (DES+building) energy efficiency can be derived. Generally this requires some knowledge of input energy consumption of the DES central plant. Any reasonable efficiency metric may be used to account for overall upstream system energy performance, such as overall system COP, kW/ton, etc.

EA credit 6 – Green Power (if pursued)

For projects documenting EA credit 1 using the performance method (energy model), green power used in a DES may contribute towards the total green power purchased for the project building. Performance for EAc6 is calculated in the normal way, based on the fraction of the project building's annual electric energy consumption that is supplied by green power. In the DES setting, this fraction depends in turn on how much electric energy is consumed by the DES upstream equipment, how much of the building's load the DES supplies, and how much of the DES energy source is renewable. Calculate the overall performance by multiplying together the following three factors:

1. The fraction of the estimated or actual DES annual electric energy use supplied by qualifying green power sources
2. The fraction of the estimated or actual DES annual electric energy that is supplied to the project building
3. The fraction of the project building's annual electric energy consumption that is supplied by the DES

The project building's total annual electric energy consumption reported for credit compliance Option 1 (Energy Model Option) shall be derived from the Proposed Case modeling run of the EAc1 Step 2 scenario (Aggregate Building / DES) described in the EAc1 section of this document. For projects not required to run the Step 2 model, the Proposed Case run from the Step 1 scenario (Building stand-alone) is used.

If green power contributions from the DES are applied to the project, a letter must be provided from the DES owner or operator verifying that the green power reported (in # 1 above) is allocated specifically to the DES generation and/or distribution equipment, and confirming that no green power allocated specifically to the DES central plant building, if any (in a separate LEED certification application), is being counted towards the green power contribution of the satellite project building. The letter must also confirm that no renewable energy is being double-counted among any satellite project buildings (in separate LEED applications).

For projects without an energy model, EAc6 credit may not be taken for renewable energy sources used for the DES upstream of the project. However, credit may be taken for green power associated with the project itself. In this situation project teams follow the standard guidance provided in the LEED v2.2 Reference Guide for documenting green power percentage using the DOE Commercial Building Energy Consumption Survey (CBECS) data.

Corollary – Required Treatment of District Thermal Energy in LEED-CI 2.0

For projects under the LEED-CI 2.0 rating system, District Energy Systems have no effect on any EA section prerequisites or credits. Any effects of District Energy Systems shall be picked up by SS credit 1, **Site Selection**, under either Option K, **On-Site Renewable Energy** (with renewable energy supplied through District Energy Systems treated as "on-site" for the purposes of this credit, subject to the restrictions listed under the guidance for EA credit 2 above), or Option L, **Other Quantifiable Environmental Performance**.

Corollary – Required Treatment of District Thermal Energy in LEED-CS 2.0

Projects under the LEED-CS 2.0 rating system shall follow the same guidance for District Energy Systems as provided for LEED-NC v2.2. Note that the LEED-CS Reference Guide contains detailed guidance for energy modeling a core and shell project in Appendix 2.