

中美气候变化工作组

2017 中美合同能源管理（EPC）示范项目

征集标准

目标

“中美合同能源管理示范项目”是中国国家发展和改革委员会、美国能源部、美国国务院共同发起的合作项目，是中美战略与经济对话框架下气候变化工作组的能效合作之一，旨在促进两国在合同能源管理（EPC）市场方面的交流、借鉴和学习。

示范项目须在项目设计、能源审计、节能保障、第三方融资方式、合同方式、节能量评估和验证（M&V）等方面具有创新性，将通过一体化的解决方案挖掘出深层次节能潜力，在两国具有卓越的推广和示范价值。项目参与者将采用综合解决方案促进深度节能，体现出项目在设计开发、能源审计、节能量保证、融资、合同模式及节能量测量与认证上的最优组合。**迈入第三个年头，中美合同能源管理项目将继续向潜在申报单位开放新一轮示范项目的申请。**

所有入选的示范项目均必须包来自中方和美方机构的共同参与。项目地点可以在中国或美国。工业、建筑、公共基础设施领域的合同能源管理项目均可申报。中美双方政府对示范项目不提供资金支持。

对参与者的价值

如果提交申请的项目满足示范项目基本要求，作为提交者的中方和美方主要机构将有机会在中美能效论坛上得到表彰。论坛将为所有入选项目授予证书。明显优于示范项目基本要求并具备卓越可行性和可复制性的代表性项目将有机会在能效论坛开幕仪式全体大会环节签署备忘录。在中美双方机构代表签署备忘录的同时，项目的相关内容将会得到公开介绍，签署代表将与中美双方重要政府官员合影。此外，2017年示范项目的代表将受邀参与合同能源管理相关的分论坛，期间示范项目还将作为中美合同能源管理项目工作的一部分进行展示。

作为能效论坛表彰的补充，示范项目还可以通过一系列的公开渠道得到积极正面的宣传推广，从而提升项目参与机构的整体形象。创新、表现优异的项目有望在中美合同能源管理项目后续的活动得到额外的表彰。对项目参与者而言，这些活动不仅能起到良好的宣传作用，还可能带来额外的商务交流和商业合作机会。

时间表

2017年中美能效论坛预计将于秋天举行，提交项目申请和备忘录的截止日期为**2017年7月28日**，此日期之前提交的项目将优先评审。请将**中英双语**的项目申请和备忘录发送到 international@emca.cn, m.evans@pnnl.gov 和 qing.tan@pnnl.gov。未使用中英双语或信息不完整的项目将可能失去入选资格。所有项目申请必须经由中美双方共同评审。美国能源部和中国发改委将考查项目申请的完整性，对项目进行评审并撰写统一的评审意见，最后共同选取项目。中国节能协会节能服务产业委员会（EMCA）和美国西北太平洋国家实验室（PNNL）将在评审过程中提供协助。**美国能源部和中国发改委将于2017年9月**

11 日前通知相关机构该项目是否会在中美能效论坛得到表彰及是否需要现场签署备忘录。项目申请信息必须属实，且项目必须在良好的诚信和合作关系中开展，备忘录的签订将被视为项目参与方对此要求的知悉和确认。

示范项目基本要求

项目参与方应如实填写项目申请的“基本信息”、“选取标准”和“其他”部分（项目申请模板见附件），否则不予考虑。本文件最后提供了推荐的备忘录模板。2017 年示范项目必须满足以下基本要求：

- **项目规模：**建筑项目，总建筑面积不少于 1500 平方米；工业或公共基础设施项目，改造前三年设施的年均总能耗不少于 5000 吨标煤。
- **中美合作：**项目申请提交时已建立双方确认的中美合作关系；可以体现在但不限于能源管理公司/节能服务公司、技术提供方及融资机构（如：美方节能服务公司、中方技术提供方及中方商业银行的组合形式）。代理商将作为其业务所在国家的参与方考虑，例如：美国公司的中国代理商视为中方机构。
- **至少涉及 3 个系统的改造：**项目应采用综合改造方案进行针对至少三个系统的改造（如：暖气、空调、热电联产、照明、通风系统等）
- **工程时间：**入选项目必须在 2017 年中美能效论坛表彰后九个月内开始改造。施工中或已完工的项目也具备入选资格，但改造完工时间不得早于 2016 年中美能效论坛（2016 年 10 月 13 日）。
- **节能量：**与基准能耗（过去三年的年平均能耗）相比，至少实现如下节能量：
 - 工业或公共基础设施项目 - 能耗减少 10000 吨标煤或改造系统能耗平均减少 20%
 - 建筑项目：建筑整体能耗减少 20%

申请者应说明节能预测的依据。

- **改造后碳排放减少：**项目在改造后应减少二氧化碳排放量。申请者需要将能耗数据转化为二氧化碳排放当量并比较改造前后的数值。项目不需要在其申请中说明碳减排量的估算过程，但在改造完成后需要提供这方面的详细信息。
- **M&V：**项目应采用详尽、可靠的节能量测量与认证方法。申请者应详细解释项目采取的 M&V 方法，如[国际节能效果测量与认证规程（IPMVP）](#)、测量与认证方面的国家标准或其他标准。申请者应注明项目采用的 IPMVP 选项或其他 M&V 标准名称。
- **创新点：**采用创新的合同模式、融资手段、M&V 机制及其他项目要素，解决项目在其所在市场可能遭遇的传统壁垒¹。创新的合同结构（例如：能源费用托管、混合型等）可以解决项目所在国现有的“奖励分散”、缺乏融资机会和其他的市场壁垒等问题。由于节能服务公司自筹资金在中国非常普遍，项目应采用公私合作（PPP）或其他创新的融资模式。在美国，应采用为消除市场壁垒而设计的融资工具。理想的创新型融资模式应当利用政府或行业协会资源合理规避市场风险，并引入多样化的融资策略来合理分配风险和成本。项目所采用的 M&V 机制应适用于一系列不同的项目情境，便于清楚理解深度节能改造的影响。对节能量的直接测量和完整记录很有必要，尤其是在对基准能耗状况进行调整的情况下。M&V 规程在严格程度和总体原则上应与 IPMVP 保持一致，以确保 M&V 的准确性

¹ 更多关于市场壁垒及其创新解决方案的信息请参照[“市场机会分析白皮书”（Opportunity Analysis White Paper）](#)。

和可信度。申请者应列举出创新的项目要素，并详细解释它们如何创新，即这些创新点如何帮助项目规避市场中的传统壁垒。

补充信息

申请者可在此阐述该项目与市场中的其他项目相比有哪些优越性（例如：获得 LEED 认证或评选为市级或以上示范项目）。如果由 EMCA 和中美能源合作项目（ECP）建立的中美行业领导的合同能源管理工作组曾为项目的开展或实施提供帮助，申请者也可在此阐述。同时欢迎申请者附上项目图片及提供额外的项目信息，这些均有可能增加项目在评审中的竞争力。

示范项目承诺

项目申请要求中美双方主要参与机构的公章和相关部门负责人的签名，证明项目有良好的诚信和合作关系中开展。如果项目入选为示范项目，项目参与机构同意每季度以邮件形式向美国能源部及中国发改委或两部门指定单位进行至少一次的进度汇报（包括计划和实际采用的节能措施、改造前/后能耗情况、投资收益、实际二氧化碳减排量等），用于工作汇报和项目推广。

备忘录模板 - 推荐格式 (包含项目选取要求)

请在“<……>”中填写具体信息。如有需要，请在本模板基础上进行添加。

简介

本备忘录（下文简称“备忘录”）由<美方和/或中方节能服务公司名称>与<美方或中方业主公司或机构名称>（即：项目甲方）双方共同签署。项目牵头的<节能服务公司或能源管理公司，二者选填其一>为<公司名称>。本项目还将包含<公司名称>的参与。

“签订方”代表节能服务公司或项目甲方，“签订双方”代表节能服务公司和项目甲方。

备忘录签订双方在彼此诚信的情况下同意对<设施名称及类型/用途>实施合同能源管理，项目位于< 国家省/直辖市/自治区 市/镇/乡>。

时间表

备忘录在所有签订方授权的指定人员签字后开始生效。备忘录中提及的项目最迟实施时间为<自 2017 年中美能效论坛起九个月>。

范畴

位于< 国家 省/直辖市/自治区 市/镇/乡>的<设施名称><建筑面积 平方米或耗能 吨标煤/年，二者选填其一>，目前每年消耗<能耗总量>。该设施主要用于<功能>。备忘录签订双方将通过合同能源管理运用综合方案对设施的至少<不小于 3>个系统进行节能改造，初步包括<系统类型>。与最近三年的基准能耗状况相比，改造将使<设施名称>整体能耗至少减少<工业设施减少 10000 吨标煤或以上或被改造系统减少 20%或以上，建筑 20%或以上，二者选填其一>。节能量的预测是基于<阐述预测过程和主要假设>。

本项目由<融资机构名称>出资。其他主要合作方包括<机构名称及类型>。

本项目将采用如下创新机制来克服<美国或中国，二者选填其一>市场中的传统壁垒。与市场中的其他项目相比，本项目有以下几个方面的创新：<具体说明在哪些方面有这样的创新点>。因此，本项目将会采用<公私合作（PPP）、第三方或其他>融资模式、<节能量保证、能源费用托管或其他>合同结构以及<描述具体的测量与认证规程>的测量与认证机制。

要求

备忘录签订双方同意在每季度通过电子邮件提交项目进展报告，以及在下届中美能效论坛期间分享此合同能源管理项目的进展。商业敏感信息不会被泄露。

参与机构在彼此诚信的情况下同意开展本项目，请所有参与机构的授权代表在备忘录上签字作实。

U.S. - China Climate Change Working Group - Energy Performance Contracting (EPC) Initiative

2017 Pilot Project Opportunity

OBJECTIVE

The Energy Performance Contracting (EPC) Initiative aims to accelerate the EPC market in China and the United States by promoting high-profile pilot projects that employ multiple technologies and demonstrate deep energy savings, new financing models, the use of standard protocols, and other noteworthy concepts. **Now in its third year, the EPC Initiative seeks applicants for its next round of pilot projects.**

The objective of recognizing projects is to encourage collaboration with local practitioners and obtain experience in each respective market using innovative feasible business models. The result is best practices from one market are introduced and applied in the other and shared with the broader sector. Participants will use integrated solutions to foster deep energy savings, demonstrating an optimal combination of innovative project development and design, energy auditing, energy savings guarantees, financing, contracting, and measurement and verification (M&V). For example, an innovative pilot project may consist of a bundle of short and long-payback measures for an attractive overall return on investment and deeper energy savings than shorter-payback measures, alone. Pilot projects can be public infrastructure, public and commercial buildings, and industrial facilities. Projects can be located in the U.S. or China. **All projects recognized should have participation from both Chinese and U.S. entities.**

Funding is not provided by either government, as the projects are intended to demonstrate replicable, self-sustaining models based on measured energy savings.

VALUE PROPOSITION

U.S. and Chinese organizations who propose an EPC project that meet the pilot project requirements will be recognized at the annual U.S. – China Energy Efficiency Forum (EEF). Each pilot project will receive a certificate. Noteworthy projects that exceed the minimum requirements and demonstrate the greatest viability and replicability may receive additional recognition in a memorandum of understanding (MOU) signing ceremony during the high-profile EEF plenary. For example, a project with a newly completed investment-grade audit will be a more compelling candidate for MOU recognition than another project that otherwise proposes the same level of energy savings and meets the other minimum requirements. A description of these select projects will be read while the parties sign an MOU formalizing their cooperation on-stage, complete with photographs taken with lead U.S. and Chinese officials. In addition, representatives of the 2017 EPC Pilot Projects will be invited to a special breakout session on the topic. The pilot projects will be listed in an EPC Initiative presentation.

Additional profile-raising avenues will be pursued to complement the recognition offered at the EEF. Top performing, innovative projects may receive additional recognition for their progress at subsequent EPC Initiative events. These efforts will provide significant exposure that may foster additional networking and business opportunities.

TIMELINE

The Energy Efficiency Forum is slated to occur in the fall of 2017, and the deadline for submitting a project application and MOU is **July 28**. Projects submitted prior to this date will be given prioritized review. The project application and MOU should be submitted in **English and Chinese** to international@emca.cn, m.evans@pnnl.gov and ging.tan@pnnl.gov. Failure to submit **complete, bilingual project information** may result in ineligibility. Each project application and MOU must be reviewed by the U.S. and China. The U.S. Department of Energy (DOE) and China National Development and Reform Commission (NDRC) will review the application for completeness, evaluate and develop a consensus view on project merits, and jointly select projects. The Energy Service Company (ESCO) Committee of China Energy Conservation Association (EMCA) and the U.S. Pacific Northwest National Laboratory (PNNL) will provide DOE and NDRC with assistance in reviewing the applications and MOUs. **DOE and NDRC will notify the interested parties by September 11, 2017 whether the project will be recognized and whether they will be selected to sign an MOU at the U.S. China Energy Efficiency Forum.** The signing of the MOU is taken as an assurance that participating parties are doing so in good faith.

CRITERIA

Participants must fill out Basic Information, Criteria, and Other sections of the pilot project application and an MOU to be considered. A sample MOU template is provided. Projects must meet the following minimum criteria (#11-21 on application) in order to be a 2017 EPC Pilot Project:

- (11.) Scale: For buildings, total floor space (in m²) must be at least 1,500 m²; for industrial facility / plants and public infrastructure, average annual energy use (in TCE or kWh) must be at least 5,000 metric tons of coal equivalent (TCE) for three preceding years.
- (12.) U.S. and Chinese Partnership: A firmly established, mutual relationship of cooperation between U.S. and Chinese participants at the time of application submission. Partners include energy management companies (EMCs)/ESCOs, technology providers, and finance companies (e.g. U.S. ESCO + Chinese technology provider + Chinese bank). Distributors are regarded as participants from the country it is based in, e.g. a Chinese distributor of a U.S. company is seen as a Chinese participant.
- (13.) Minimum of three systems: Projects should have an integrated approach to retrofit at least three systems (i.e. hot water heating, air conditioning, combined heat and power, lighting, fenestration, etc.).
- (14 & 15.) Construction timeline: Construction must start no later than nine months after recognition at the 2017 EEF. Projects may also be underway or completed after 2016 EEF (October 13, 2016).
- (16. – 18.) Energy Savings: Projects should result in energy reductions relative to baseline conditions (derived from average energy consumption over the preceding 3 years) by at least:
 - 20% and/or 10,000 TCE energy across the affected systems in an industrial facility / plant or public infrastructure
 - 20% of the entire building's energy use in a commercial / public buildingApplicants should include basis for estimated energy savings.

- (19.) Reduced carbon emissions after retrofit: Projects should result in carbon dioxide (CO₂) emissions reductions. This requires converting energy consumptions before and after retrofits into CO₂ equivalents and conducting a comparison. Projects do not have to list their calculations in the submission template or MOU, but will be asked to provide the information after the retrofit is completed.
- (20.) M&V: Projects should involve a robust and well-documented methodology of M&V for energy savings. Applicants should explain the methodology used for project M&V, e.g. the [International Performance Measurement and Verification Protocol](#) (IPMVP); national M&V and/or other standards. In each case, applicants are asked to specify the IPMVP option or specify national M&V and other standards.
- (21.) Innovations: This includes the use of innovative contract structures, financing methods, M&V, and/or other project elements to address traditional barriers² in the host market. Innovative contract structures (e.g. energy savings agreements, hybrid models, etc.) may address split incentives, lack of access to financing, or other barriers that are the status quo in the host country. Self-financing is typical in China, so employing a public-private partnership or other type of financing can be innovative. In the U.S., innovation may be the use of financial vehicles designed to overcome market barriers. Ideally, innovative financing would leverage government or industry association to reduce market risks and introduce diversified financing strategies to fairly allocate risks and costs. M&V models should fit a range of project situations to allow for a clear understanding of the impact of deep retrofits. Direct measurement of savings and thorough documentation are necessary, particularly if there are adjustments to baseline conditions. Including M&V protocols consistent with the rigor and principles of the IPMVP can ensure accuracy and credibility. **Applicants should specify the elements of innovations and explain why they should be considered as innovations, i.e. how they help address traditional market barriers.**

SUPPLEMENTAL INFO

Applicants have the opportunity to indicate how the project is noteworthy relative to others pursued in that market (e.g. LEED or city recognition) and if the project has benefited from the work advanced by the industry-led working group established by EMCA and the U.S.-China Energy Cooperation Program (ECP). Applicants are also encouraged to submit pictures of the project with the application. Providing supplemental information, in addition to exceeding minimum criteria requirements and including noteworthy innovations, will make applications more competitive for an MOU signing at the Energy Efficiency Forum.

EPC PILOT PROJECT OBLIGATION

The application requires the signature and official seal of principals from the appropriate divisions within the major U.S. and Chinese participating organizations indicating that a good-faith effort will be pursued. If an applicant's project is recognized as a U.S.-China EPC Pilot Project, the participants agree to email DOE and NDRC, or their designees, details on general progress (energy efficiency measures recommended and pursued, pre /

² See the [Opportunity Analysis White Paper](#) for more details on barriers and innovative solutions.

post- performance, return on investment, actual CO₂ emission reductions, etc.) at least once each quarter for reporting and pilot project promotion purposes.

Recommended Format for Incorporating Pilot Project Requirements into a Memorandum of Understanding

Please fill in text in <...> with specific information. Additional text should be included, as needed.

INTRODUCTION

This Memorandum of Understanding (“MOU”) is entered into by and between <include at least one U.S. and/or Chinese ESCO> and <include a host company/organization in either the U.S. or China> (“Host”). The lead <ESCO or EMC, specify which> for this project will be <specify company>. This project will also involve <specify companies>.

“Party” means ESCO or Host, and “Parties” means both ESCO and Host.

The Parties to this MOU agree in good faith to participate in an Energy Performance Contract (“EPC”) at <specify facility name and type/purpose>, located in <city/town/village, province/state, country>.

TIMELINE

This MOU shall become effective upon the later date on which the authorized designee of each Party has signed it. The EPC project specified in this MOU will enter into development phase no later than < 9 months from the date of EEF in 2017>.

SCOPE

The <specified facility>, located at <specified location>, is <size in m² or energy consumption in TCE/kWh> and currently consumes <energy consumption amount in TCE/kWh> annually. The facility is primarily used for <function>. Parties to this MOU will enter into an EPC with an integrated approach to retrofit at least <number no smaller than 3> systems that, tentatively, are <specify the types of systems>. The retrofits will result in reduction of facility-level energy consumption at <specified facility> by at least <at least 20% and/or 10,000 TCE energy saved across affected systems for industrial facility or public infrastructure, 20% for building>, compared to baseline conditions over the past 3 years. The estimate savings are based on <indicate how the calculation was made and pertinent assumptions >. The retrofits also lead to greenhouse gas emissions reduction.

This project will be financed by <specify financing institution>. Other key partners include <name and type of organization>.

The project will use the following innovative mechanism(s) to address traditional market barriers in <U.S. or China>. It has the following noteworthy aspects that differentiate it from other projects in the market: <specify aspects>. Thus, the project will employ <public-private partnership, third-party, or other> financing, < guaranteed savings, energy savings agreement, or other> contract structure, and/or M&V through <enter description>.

REQUIREMENTS

Parties to this MOU agree to share progress following inception of the EPC via email on a quarterly basis and during the next Energy Efficiency Forum, with the understanding that no business sensitive information will be revealed.

Signature of authorized representatives from each participating organization indicates approval of the project and that a good-faith effort will be pursued.