

PMC-ND
(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**

**RECIPIENT:** University of California, Los Angeles (UCLA)**STATE:** CA**PROJECT TITLE:** Clean Energy Smart Manufacturing Innovation Institute (CESMII)

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001263	DE-EE0007613	GFO-0007613-BP3	GO7613

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

A11 Technical advice and assistance to organizations Technical advice and planning assistance to international, national, state, and local organizations.

B1.31 Installation or relocation of machinery and equipment Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.

B3.6 Small-scale research and development, laboratory operations, and pilot projects Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to the Clean Energy Smart Manufacturing Innovation Institute (CESMII) for DOE's third Manufacturing Innovation Institute under the Clean Energy Manufacturing Initiative. The purpose of the Clean Energy Manufacturing Initiative is to strengthen U.S. clean energy manufacturing competitiveness and to increase U.S. manufacturing competitiveness across the board by boosting energy productivity and leveraging low-cost domestic energy resources as fuels and feedstocks. CESMII is funded under a Cooperative Agreement with the DOE and with participation from numerous sub-recipients, formally known as Regional Manufacturing Centers (RMC's), but now transitioning to a distributed network of Smart Manufacturing Innovation Centers (SMICs). These SMICs would develop an integrated system of advanced sensors, controls, platforms, and modeling across a diverse portfolio to drive technology, manufacturing practice, and technical projects and services to achieve wide spread Smart Manufacturing and industry driven transformation.

This project has five budget periods but only project activities within budget periods 1, 2 and 3 (BP1, BP2 and BP3) have been defined. This NEPA Determination is specific to BP3 only. DOE completed previous NEPA

Determinations (GFO-0007613-001 on 12/07/2016; A9, A11, B1.31, B2.1 and GFO-0007613-BP2 on 3/6/2018; A9, A11, B1.31, B2.1) for BP1 and BP2 activities. Further NEPA review will be required for the remaining budget periods once those activities have been defined and negotiated.

Each task/subtask in BP3 will be completed by either the prime recipient or one of the sub-recipients. For the prime recipient and the sub-recipients listed in the table for question 2b of the completed EQ1, (which includes the document "CESMII BP3 EQ1 Table Jan 2020" attached in the Project Management Center), the scope of work for proposed activities in BP3 are generally intellectual, academic and analytical activities with research and development limited to five areas: management and operations; technology research and development including evaluation and analysis; education and workforce development; CESMII sustainability; and communications and outreach.

The location of the facilities and description of proposed activities for the prime recipient and each sub-recipient is detailed within the table for question 2b of the completed EQ1 for the project. Initially, entries detailed in the table for question 2b include only those projects approved by the contracting officer at the start of BP3. Additional entries in the table for question 2b may be incorporated as new sub-recipients are brought into the CESMII project and specific sites are identified as long as these additional entries conform to the rationale and CXs applied in this NEPA Determination. Any new sub-recipients or sites that do not fit the above referenced table will be required to submit separate EQ1s for further review, including a new facility for CESMII offices, since the previously identified location is no longer under consideration.

None of the activities occurring at any of the listed facilities would require any new permits, licenses or authorizations for BP3 activities and all listed facilities would conduct activities consistent with current operations and would not be expanded or modified beyond small, nonstructural improvements for equipment installation. Manufacturing activities at some locations would require the use of various hazardous materials, including metals and industrial solvents with requirements for high temperatures. All hazardous materials and protocols for high temperature activities would be in accordance with federal, state, and local regulations, as well as health and safety policies and procedures at each facility.

The University of Louisville will build an outdoor 20 x 20 x 12 foot temporary shelter that is expected to be in place approximately 24 months. The shelter would be designed to protect a laboratory kiln. The kiln and support systems would be located on a steel tube frame on existing pavement. All ducting and material handling systems would be attached to the frame. All flammable gas would be stored as required to meet OSHA and local university regulations. Safety equipment and training would be provided to all researchers working with or around the kiln.

NEPA PROVISION

DOE has made a conditional NEPA determination.

The NEPA Determination applies to the following Topic Areas, Budget Periods, and/or tasks:

Budget Period 1, 2 and 3 activities

The NEPA Determination does not apply to the following Topic Area, Budget Periods, and/or tasks:

Budget Periods 4 and 5 activities

Include the following condition in the financial assistance agreement:

The Recipient is required to consult with the DOE Project Officer and NEPA Specialist regarding any activities that would result in:

*changes to existing use of facilities, and/or

*modifications to existing facilities, and/or

*ground disturbing or new construction activities

prior to initiating any of these activities in order to determine whether additional NEPA review is required.

If the Recipient moves forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, the Recipient is doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Notes:

This NEPA Determination requires a tailored NEPA provision.
Advanced Manufacturing Office
Diana Heyder 01/30/2020

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



Casey Strickland

NEPA Compliance Officer

Date: 2/3/2020

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
 Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____

Field Office Manager

Date: _____

**Subtask # and
Lead for
Roadmap
Project**

Prime (P)/Subs (S)	Activities - BP3
(P) See Line 15 Clean Energy Smart Manufacturing Innovation Institute 411 N. Vermont Avenue, Los Angeles, CA 90004 ** This site was never used** 8/2018-Prime Recipient was novated to UCLA see Line 15.	N/A
CESMII Headquarters 1060 Vetern Ave. Los Angeles, CA 90024	N/A
(S) Rensselaer Polytechnic Institute (RPI), Troy, NY	Intellectual, academic, and analytical activities. Regional Manufacturing Center (RMC)
(S) Texas A&M University, College Station, TX	Intellectual, academic, and analytical activities. Regional Manufacturing Center (RMC)
(S) UCLA, Los Angeles, CA	Intellectual, academic, and analytical activities for hosting Western RMC
(S) North Carolina State University, Raleigh, NC	Intellectual, academic, and analytical activities. Regional Manufacturing Center (RMC)
(S) Pacific Northwest National Laboratory	N/A
(C) California Manufacturing Technology Consulting 690 Knox St. Ste 200, Torrance, CA 950502	N/A
(S) Arconic Technology Center 100 Technical Drive New Kensington, PA, 15069, USA	N/A
(S) UCLA, Los Angeles, CA (Subrecipient) 3354 Math Sciences, Institute for Digital Research and Education, University of California, Los Angeles, Los Angeles, CA 90095 August 2018 - Prime was novated to UCLA	Platform Architecture and Computer based Coding Software development of projects detailed in SOPO and location of some of the hardware used in the project

(S) Nimbis 100 E Campus View Blvd (#250 added in BP2) Columbus OH 43235	N/A
(S) Nimbis 1846 E Innovation Park Drive Oro Valley AZ 85755	N/A
(S) Washington State University (WSU) Olympia Office WSU Energy Program 905 Plum Street SE, Box 43165 Olympia WA 98504-3165	N/A
(P) CESMII Headquarters Office of Information Technology (OIT) 2333 Murphy Hall 410 Charles E. Young Dr. East Los Angeles CA 90095-1405 (This site was initially grouped together with the subrecipient. It was broken out with BP2.)	Intellectual, academic, and analytical activities. Office location of the Project PI, Jim Davis
(S) WeWork New location for CESMII HQ 10250 Constellation Blvd (Century City) Los Angeles, CA 90067	Intellectual, academic, and analytical activities. Location of CESMII Headquarters
(S) OSIssoft, LLC 1600 Alvarado Street San Leandro, CA 94577	N/A
(S) Atollogy 900 Lafayette St #405 Santa Clara, CA 95050 650-460-7325	Intellectual, academic, and analytical activities. Part of Western RMC
(S) Oregon State University School of Mechanical, Industrial, and Manufacturing Engineering Oregon State University Mail: 204 Rogers Hall Office: 218A Dearborn Hall Corvallis, OR 97331	Intellectual, academic, and analytical activities. Part of Western RMC

	(S) El Camino Community College District Dean, Community Advancement Division 13430 Hawthorne Blvd., Hawthorne, CA 90250 (310) 660-3593 x8265	Intellectual, academic, and analytical activities. Part of Western RMC
	(S) UC Irvine California Institute for Telecommunication and Information Technology, 4100 E Peltason Dr, Irvine, CA 92617 949-824-6900	N/A
	(S) Think IQ 65 Enterprise, 3rd Floor Aliso Viejo, CA 92656	See below - listed later
2.3.1 - Honeywell	(R) Honeywell - Tempe 1300 W Warner Rd Tempe, AZ 85284	Program Management
2.3.1 - Honeywell	(R) Honeywell - Phoenix 111 S 34 Street Phoenix, AZ 85034	Smart Factory, Additive Manufacturing, Data generation, Demonstrations
2.3.1 - Honeywell	(R) Honeywell - Plymouth 12001 Hwy 55 Plymouth, MN 55441	Data Analytics, Machine learning, Edge-Cloud workflow
2.3.1 - Honeywell	(S) Morf3D 821 N Nash St El Segundo, CA 90245	N/A - no longer partner in BP3
2.3.1 Honeywell	(S) KAM 258 W. Aviation Dr Statesville, NC 28677	Additive Manufacturing, Data generation, Demonstration
2.3.1 - Honeywell	(S) UCLA Henry Samueli School of Engineering Chemical Engineering Dept. 5531 Boelter Hall Los Angeles, CA 90095 ALSO: UCLA, 405 Hilgard Ave	Data Analytics, Machine learning

2.3.1 - Honeywell	(S) USC Viterbi School of Engineering Epstein Dept of Industrial and Systems Engineering 3715 McClintock Avenue Los Angeles, CA 900089	Data Analytics, Sensors
2.3.1 - Honeywell	(S) Missouri S&T 300 W. 13th Street Rolla, MO 65409	Sensor integration
2.3.1 - Honeywell	(S) Identify3D 4 Joost Ave San Francisco, CA 94131	Cyber security
2.3.1 - Honeywell	(S) Sentient Science 672 Delaware Avenue Buffalo, NY 14209	N/A - no longer partner in BP3
2.3.1 - Honeywell	(S) Stratonics 25002 Castlewood Lake Forest, CA 92630	N/A - no longer partner in BP3
2.3.2 - El Camino Community College	(R) El Camino College, Business Training Center, 13430 Hawthorne Blvd. Hawthorne, CA 90250	Intellectual, academic, and analytical activities
2.3.2 - El Camino Community College	(S) UC Los Angeles, UCLA, Boelter Hall 5532-F, Los Angeles, CA 90095	Intellectual, academic, and analytical activities
2.3.2 - El Camino Community College	(S) CSU Northridge, College of Engineering & Computer Science, 18111 Nordhoff Street, Northridge, CA 91330	Intellectual, academic, and analytical activities
2.3.2 - El Camino Community College	(S) UC Berkeley, 6117 Etcheverry Hall, Berkeley, CA 94720	Intellectual, academic, and analytical activities
2.3.3 - University of California- Irvine	(R) University of California-Irvine Building 325 California Institute for Telecommunication and Information Technology (Calit2) Irvine, CA 92697	Design, Prototype, Deploy and Test Smart Connected Worker systems.
2.3.3 - University of California- Irvine	(S) Atollogy 900 Lafayette St #405 Santa Clara, CA 95050 650-460-7325	Intellectual, academic, and analytical activities

2.3.3 - University of California- Irvine	(S) The Aerospace Corporation 2310 E El Segundo Blvd, El Segundo CA	Support design and development activities for Smart Connected Worker field trials
2.3.3 - University of California- Irvine	(S) General Mills Corporation, 1055 Sandhill Ave, Carson CA	Support design and development activities for Smart Connected Worker field trials
2.3.3 - University of California- Irvine	(S) Honeywell Corporation, 1944 E Sky Harbor Cir N Phoenix AZ	Support design and development activities for Smart Connected Worker field trials
2.3.3 - University of California- Irvine	(S) San Diego Supercomputing Center, University of California- San Diego 9500 Gilman Drive La Jolla CA	Design, Prototype, Deploy and Test Smart Connected Worker systems
2.3.3 - University of California- Irvine	(S) California State University 18111 Nordhoff Street Northridge, CA	Design, Prototype, Deploy and Test Smart Connected Worker systems
2.3.4 - ThinkIQ	(R) ThinkIQ, Inc. 65 Enterprise, 3 rd Floor Aliso Viejo, CA 92656	Project administration and execution for the project
2.3.4 - ThinkIQ	(S) General Mills 1 General Mills Blvd, Golden Valley, MN 55427	Project administration and execution for the project
2.3.5 - University of Connecticut	(R) University of Connecticut 159 Discovery Dr. Storrs CT 06269-5183	Data analytics, Modeling & Simulation, Control & Optimization, Algorithm Development
2.3.5 - University of Connecticut	(S) UTRC 411 Silver Lane East Hartford, CT 06118	Data analysis, experimental characterization of manufactured parts
2.3.5 - University of Connecticut	(S) CCAT 409 Silver Lane East Hartford, CT 06118	Manufacture parts made of common aerospace alloys; Acquire mfg. process data; Acquire post- mfg. process data; Manage and transfer acquired data
2.3.5 - University of Connecticut	(S) DepuySynthes Companies of Johnson & Johnson 325 Paramount Drive Raynham, MA 02767	Manufacturing and characterization of medical device components and instrumentation; Acquisition of Mfg machine data, Implementation of models
2.3.6 - Penn State University	(R) Penn State New Kensington, 3550 Seventh Street Road, New Kensington, PA 15068-1765	Project administration. Educational materials development. Software development. Undergraduate classroom implementation.
2.3.6 - Penn State University	(S) Massachusetts Institute of Technology, 77 Massachusetts Ave., Cambridge, MA 02139	Educational materials development. Software development. Lab equipment fabrication.

2.3.6 - Penn State University	(S) Arconic Inc., 100 Technical Drive, New Kensington, PA 15069	N/A - no longer partner in BP3
2.3.7 - Arcelor Mittal	(R) ArcelorMittal Global R&D East Chicago, 3001 E Columbus Dr., East Chicago, IN, 46312	Specific development activities related to defining SM platform (set up platform infrastructure), developing real-time quality prediction model, and providing technical oversight and management of the project sub-tasks
2.3.7 - Arcelor Mittal	(R) ArcelorMittal Burns Harbor Plant - Steel Producing, 250 W. U.S. Highway 12, Burns Harbor, IN 46304	Implementation of project developments and plant trials
2.3.7 - Arcelor Mittal	(S) Missouri University of Science and Technology, 284 McNutt Hall 1400 N. Bishop Ave., Rolla, MO 65409-0340	Missouri S&T would focus on sensor implementation for two applications: segment strain measurement and mold interface displacement
2.3.7 - Arcelor Mittal	(S) Rensselaer Polytechnic Institute, 110 8th Street - CII 8011, Troy, NY 12180-3590	CESMII platform implementation and development of predictive model and control systems
2.3.7 - Arcelor Mittal	(S) Purdue University Northwest, Center for Innovation through Visualization and Simulation (CIVS), 2200 169th Street, Hammond, IN 46323-2094	Development of digital twin and VR prototype of caster
2.3.8 - University of Louisville	(R) JB Speed School of Engineering, University of Louisville, Louisville, KY, 40292	Project administration for all sub-tasks in SOPO and other management activities. Technical Tasks analysis and lab work as described in the SOPO
2.3.8 - University of Louisville	(S) Argos Cement Plant 8039 Highway 25, Calera, AL, 35040	Model calibration, control schemes assessment, lab work and technical tasks as described in the SOPO
2.3.9 - Virginia Tech	(R) Virginia Polytechnic Institute and State University Dept. of Industrial and Systems Engineering 1145 Perry Str., Durham Hall Blacksburg, VA 24061	To overview and coordinate the entire project, and lead task 2.3.9.2: computation modeling and task 2.3.9.5: integration and validation
2.3.9 - Virginia Tech	(S) Arconic Inc. 100 Technical Drive New Kensington, PA 15069	N/A - no longer partner in BP3
2.3.9 - Virginia Tech	(S) Commonwealth Center for Advanced Manufacturing 5520 West Quaker Road Disputanta, VA 23842	To lead task 2.3.9.1: development of data acquisition system using various sensors, and support other tasks
2.3.9 - Virginia Tech	(S) The Pennsylvania State University College of Earth & Mineral Sciences 248 Deike Building University Park, PA 16802	To co-lead task 2.3.9.1: data acquisition system, and lead task 2.3.9.3: development and validation of in-process monitoring capability, and support other tasks

2.3.9 - Virginia Tech	(S) The University of Virginia Dept. of Mechanical and Aerospace Engineering 122 Engineer's Way Charlottesville, VA 22904	To lead task 2.3.9.4: Process improvement through optimization and control
2.3.9 - Virginia Tech	(S) Honeywell 3520 Westmoor St., South Bend, IN 46628 717 N. Bendix Dr., South Bend, IN 46628	To lead the project activities of testbed selection and setup, testing of model development, and support other tasks
2.3.10 - Texas A&M	(R) Texas A&M Engineering Experiment Station Gas and Fuels Research Center (TEES GFRC), 341 Jack E. Brown Engineering Building, Texas A&M University, College Station, TX 77843	<ul style="list-style-type: none"> Theoretical and computational, project administration other activities
2.3.10 - Texas A&M	(S) Texas A&M Energy Institute, Giesecke Engineering Research Building, Texas A&M University 1617 Research Parkway, College Station, TX 77843-3251	<ul style="list-style-type: none"> Theoretical and computational, project administration other activities
2.3.10 - Texas A&M	(S) Praxair Technology Center, 175 East Park Drive, Tonawanda, NY, 14150	<ul style="list-style-type: none"> Project administration for some of the sub-tasks and other management activities. Partial data collection and documentation gathering. Project coordination and consultancy (SMEs)
2.3.10 - Texas A&M	(S) Praxair Plant: 1224 W North Boo Rd, Portage, IN 46368	<ul style="list-style-type: none"> Implementation of instrumentation/sensors (as needed). Monitoring of plant assets (as needed)
2.3.10 - Texas A&M	(S) Praxair Plant: 1 Thyssenkrupp Dr Mount Vernon AL 36560	<ul style="list-style-type: none"> Gathering of documents and plant operations discussions as needed
2.3.10 - Texas A&M	(S) Rensselaer Polytechnic Institute, 110 Eighth St., Troy, NY 12180-3590	<ul style="list-style-type: none"> Theoretical and computational, project administration other activities
2.3.10 - Texas A&M	(S) The University of Texas at Austin, McKetta Department of Chemical Engineering, 200 East Dean Keeton St., C0400, Austin, TX 78712	<ul style="list-style-type: none"> Research on scheduling-relevant models and digital twin. Project administration for relevant sub- tasks in SOPO and other management activities
2.3.10 - Texas A&M	(S) Process Systems Enterprise Inc., 1200 Smith Str Suite 1200, Houston, TX 77002	Providing software and services.

2.3.10 - Texas A&M	(S) Process Systems Enterprise Inc., 3 Wing Drive Suite 103, New Jersey, NJ 07927; 4 Century Drive Suite 130, Parsippany, NJ 07054	Providing software and services.
2.3.10 - Texas A&M	(C) OSIsoft 777 Davis Street San Leandro, CA 94577	Providing technical services per quote.
2.3.10 - Texas A&M	(C) Aspen Tech 20 Crosby Drive Bedford, MA 01730	Providing software and services
Subtask 2.2	(S) Think IQ 65 Enterprise, 3rd Floor Aliso Viejo, CA 92656	Platform Architecture and Computer based Coding. SM Capability Project
Subtask 2.2	(S) Savigent 3800 American Blvd. W. Suite 1250 Bloomington, MN 55431	Platform Architecture and Computer based Coding. SM Capability Project