

PMC-EF2a

**U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION**



(2.04.02)

RECIPIENT: Lygos Inc

STATE: CA

PROJECT TITLE : Design and optimization of a biochemical production platform with biosensor-guided synthetic evolution

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000719	DE-EE0006113	GFO-0006113-001	GO6113

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), 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.)

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.

Rational for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Lygos Inc. to develop a biocatalyst for conversion of sugar feedstocks into fine commodity chemicals. DOE funding would be used to modify an existing computer program to develop a database of DNA sequences, implement the genome scale changes and to generate a software algorithm that models the changes in metabolism compared to biochemical production.

Research and development work would be completed at two locations. The primary location, Lygos, is located at 636 San Pablo Ave., Albany, California. Additional work would be completed at the University of California San Francisco Center for Advanced Technology located at, 1700 4th St. San Francisco, California under subcontractor TeselaGen. Lygos, UCSF and TeselaGen have completed an R&D questionnaire addressing the protocols for laboratory and facility safety, risk management and waste disposal. The laboratories and facility comply with standard safety procedures and all processes and procedures are monitored by Environmental Health and Safety (EHS) staff. The laboratories and facilities have all applicable permits in place, and would not need additional permits for the proposed activities. All handling and disposal of gases, chemicals, wastes and liquid effluents comply with appropriate regulations. Lygos maintains safety protocols that were adopted and adapted from safety protocols from Lawrence Berkeley National Labs (LBNL).

At the UCSF labs, the use of certain materials such as radioisotopes and other radiation sources controlled by the Drug Enforcement Agency (DEA) must be reviewed by EHS Specialists to determine if further authorization would be required.

Genetically modified organisms (GMOs) would be used in the proposed project at the Lygos location. GMOs would be stored in -80C freezers with a primary storage container. They would be disposed of via Stericycle or methods found in LBNL EHS and Chemical Hygiene and Safety Plan (CHSP) manuals. All organisms are classified as biosafety level 1 by the Center for Disease Control and include *S. cerevisiae* and non-pathogenic *E. coli*. BioSafety Level 1 (BSL-1) laboratory techniques and containment practices would be used for the proposed project.

Based on review of the project information and the above analysis, DOE has determined the research, development and analysis activities would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed project is consistent with actions contained in DOE categorical exclusions A9 "information gathering, analysis and dissemination" and B3.6 "small-scale research and development, laboratory operations and pilot projects" and is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

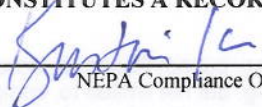
Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

Kelly Daigle 2/27/2013

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Date: 2/28/2013
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

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

Field Office Manager's Signature: _____ Date: _____
Field Office Manager