

**To:** Office of Planning and Research  
 PO Box 3044  
 1400 Tenth Street, Room 113  
 Sacramento, CA 95812-3044

**From:** California Energy Commission  
 1516 Ninth Street, MS-48  
 Sacramento, CA 95814

**Project Applicant:** Lawrence Livermore National Security, LLC

**Project Title:** Wood-to-Fuel for California's Transportation Sector using Autothermal Pyrolysis - REVISED

**Project Location – Specific:** 2000 Wetsel-Oviatt Road

**Project Location – City:** El Dorado, 95762-5720      **Project Location – County:** El Dorado

**Description of Nature, Purpose and Beneficiaries of Project:**

The purpose of this project is to adapt an innovative autothermal (AT-PI) pyrolysis technology used to convert corn stover to bio-oil, to instead use wood residues and scale this technology up to a commercially relevant size using a modular approach. This research will include the installation of a modular unit at Sierra Pacific Industries existing facility where on-site biomass will be used in a pilot scale system to produce bio-oil and validate the operation of the unit.

**Name of Public Agency Approving Project:** California Energy Commission

**Name of Person or Agency Carrying Out Project:** Lawrence Livermore National Security, LLC

**Exempt Status:** *(check one)*

- Ministerial Exemption (Pub. Resources Code § 21080(b)(1); Cal. Code Regs., tit 14, § 15268);
- Declared Emergency (Pub. Resources Code § 21080(b)(3); Cal. Code Regs., tit 14, § 15269(a));
- Emergency Project (Pub. Resources Code § 21080(b)(4); Cal. Code Regs., tit 14, § 15269(b)(c));
- Categorical Exemption. State type and section number  
Cal. Code Regs., tit 14, § 15301 -- Cal. Code Regs., tit 14, § 15303
- Statutory Exemptions. State code number.
- Common Sense Exemption. (Cal. Code Regs., tit 14, §15061(b)(3))

**Reasons why project is exempt:**

This project includes (1) developing a complete engineering and design package for a 50 tons-per-day autothermal pyrolysis Modular Energy Production System; and, (2) manufacturing the modules for the system and preparing them for shipment and installation at the site. The system will be designed in a modular fashion, consisting of approximately 4 trailer sized modules. The equipment constructed off-site and installed temporarily at an existing facility; none of the equipment will remain on site after the conclusion of the operational period, and the site will be returned to its prior use.

The equipment will be operated at an closed sawmill site that, at the current time, is being used for industrial purposes (e.g., truck repair, equipment storage); the project operations will consistent with the historic uses of the site and not require any substantial modifications to the site.

Demonstration readiness activities will include (1) delivering the modules to the demonstration site and integrate them; (2) finalizing Standard Operating Procedure documents and train operators; (3) conducting a readiness review; and, (4) complete shakedown trials and production runs to produce at least 50,000 gallons of bio-oil intermediates.

The project will not have a significant impact on the environment because it will only involve the temporary installation of a few small structures (i.e. trailer sized units) (Cal. Code. 14 §15303) at an existing industrial facility (Cal. Code. 14 §15301), where the project operations will consistent with the historic uses of the site and not require any substantial permanent modifications to the site.

### **15303: New Construction or Conversion of Small Structures**

To fit within this exemption, a project must be one of the following:

- 1) Consist of construction and location of limited numbers of new, small facilities or structures; or
- 2) Consist of installation of small new equipment and facilities in small structures; or
- 3) Consist of the conversion of small structures from one use to another where only minor modifications are made in the exterior of the structure.

Project module delivery, integration and readiness review activities will include:

- Deliver the modules to the demonstration site
- Integrate the modules and test individual operations

### **15301: Existing Facilities**

To fit within this exemption, a project must meet all the following criteria:

- 1) Consist of operation, repair, maintenance, permitting, leasing, licensing, or minor alteration
- 2) of existing structure, facilities, mechanical equipment, or topographical features,
- 3) which involves negligible or no expansion of use beyond that existing at the time of the lead agency's CEQA determination.

Demonstration operation activities will include:

- Complete shakedown trials of the integrated demonstration system
- Complete characterization of products and produce Mass Balance and Product Characterization Report
- Produce at least 50,000 gal. of bio-oil intermediates
- Deliver sugar stream to subcontractor demonstration facility for fermentation
- Deliver phenolic oil to ISU for hydroprocessing trials
- Deliver aqueous phase to ISU for anaerobic digestion trials

In addition, bio-oil upgrading tasks will include:

- 1) upgrading the sugar stream to alcohols; (2) upgrading the phenolic oil to drop-in hydrocarbon fuel distillate; (3) upgrading the aqueous phase to bio-methane; and, (4) providing operating conditions, yields and mass balances to LLNL for final techno-economic analysis and life cycle assessment.

And, final tasks will:

- Conduct System Optimization and Cost Reduction work.
- Create market adoption partnerships to accelerate commercialization and deployment of ISU's AT-PI technology and develop a technology roadmap

**Lead Agency**

**Contact Person:** Mei Chang **Area code/Telephone/Ext:** 916-327-2216

**If filed by applicant:**

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project?  Yes  No

**Signature:** Mei Chang **Date:** 8/19/2020 **Title:** Energy Analyst

**Signed by Responsible Agency**

Governor's Office of Planning & Research

**Signed by Lead Agency**

**Aug 20 2020**

**Signed by Applicant**

Date received for filing at OPR: **STATE CLEARINGHOUSE**