

To: Office of Planning and Research  
PO Box 3044, 1400 Tenth Street, Room 222  
Sacramento, CA 95812-3044

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

Project Title: Utility-Scale Flywheel Energy Storage Demonstration

Project Location – Specific: 47338 Fremont Blvd

Project Location – City: Fremont, CA Project Location – County: Alameda

**Description of Project:**

Amber Kinetics proposed a project to demonstrate a prototype flywheel employing technology with advances in composite flywheel rotor materials, magnetic bearing systems, and high efficiency motor-generators. These new technologies, when integrated into a flywheel system, can prove that flywheel energy storage can be competitive with pumped hydro in terms of cost and efficiency.

The goal of the prototype flywheel system will be to clearly demonstrate the economical and technical viability of bulk flywheel energy storage and renewable energy integration for the electric grid. Concurrent with the DOE-NETL ARRA project over a four year period, this project and the technology validation it supports will result in potential impacts on California industry and markets.

**Project Team**

Amber Kinetics' project team includes: AFS Trinity, LLNL, and Stanford University. Award-winning researcher, Dr. Richard Post, pioneered the technology at LLNL and is now a partner with Amber Kinetics, Inc. and Stanford University under a technology licensing agreement.

**Project Budget**

The Amber Kinetics project's total budget is \$10,003,015 of which \$3,694,660 is from a DOE-NETL ARRA stimulus match award to Amber Kinetics. The remaining funds are from Amber Kinetics (\$5,254,347) and AFS Trinity (\$684,542). The total Energy Commission budget for this project is \$369,466, which leverages \$3,694,660 in DOE-NETL ARRA grant funds. The Energy Commission budget for this project can be broken down as follows:

- 48% - Direct Labor (35%), Fringe Benefits (5%) and Indirect Overhead (8%)
- 48% - Contractual
- 4% - Materials & Supply (3%), and Travel (1%)

**Project Benefits:**

Numerous benefits will be garnered from broad deployment of utility scale flywheel energy storage technology. This project will demonstrate how using flywheel energy storage may improve grid reliability, facilitate integration of renewable resources, and improve the use of existing transmissions assets.

Name of Public Agency Approving Project: California Energy Commission

Name of Person or Agency Carrying Out Project: Amber Kinetics, Inc

**Exempt Status:** (check one)

- Ministerial (Sec. 21080(b)(1); 15268);
- Declared Emergency (Sec. 21080(b)(3); 15269(a));
- Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- Categorical Exemption. 14 CCR 15301

Statutory Exemptions. State code number. \_\_\_\_\_

Common Sense Exemption. 15061(b)(3) \_\_\_\_\_

**Reasons why project is exempt:**

The project consists of technology development and demonstration activities that do not have the potential to cause a significant environmental impact. The technology will be developed in engineering facilities in compliance with environmental laws and regulations. The project will not generate any new waste streams or cause a significant increase in the volume of waste already generated within the existing engineering facility. Project wastes will be disposed of through a waste management company in compliance with solid and hazardous waste management laws.

**Lead Agency**

**Contact Person:** Avtar Bining **Area code/Telephone/Ext:** 916-327-1411

**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:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Title:** \_\_\_\_\_

**Signed by Lead Agency**

**Signed by Applicant**

**Date received for filing at OPR:** \_\_\_\_\_