

# HYDROGEN CODES & STANDARDS

## SUPPORTING THE CONSENSUS PROCESS

### 2007 DOE Hydrogen Program Review

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Project ID #SAP1

# Timeline

Start: December 5, 2007

End: September 30, 2011

10% Complete

# Barriers

- Additional Cost Share Required in 2007
- Transition Year - All Contracts Renegotiated
- Large Number of Local Government Jurisdictions (approximately 44,000)
- Limited Govt. Influence on Consensus Process

## Overview

Large Number of Local Government Jurisdictions (approximately 44,000).

# Budget

Total Project: \$7.2M

DOE Share: \$6.0 M

Cost Share: \$1.2 M

# General Objectives of DOE Codes & Standards Project

- The overarching objective to facilitate the timely completion of the necessary codes and standards for hydrogen and fuel cell technologies and infrastructure.
- Support consensus based national agenda on domestic and international codes and standards for hydrogen systems in commercial, residential, and transportation applications
- Facilitate development of uniform codes and standards because manufacturers cannot cost-effectively manufacture multiple products that would be required to meet different and inconsistent standards

# Objectives (continued)

- Specific project objectives include:
  - Coordinate and facilitate the accelerated development of codes and standards in close collaboration with DOE, National Laboratories and other relevant agencies;
  - Establish strong partnerships with industry, SDOs and CDOs;
  - Facilitate information dissemination to technology developers, implementers and local code officials—  
ANSI Portal.

# Codes & Standards Partners with DOE Hydrogen Program

	Sub Awards (Complete or <i>in process</i> )
1	ANSI Contract #RL-2007-002
2	ASME Contract #RL-2007-011
3	CGA Contract #RL-2007-010
4	CSA America Contract #RL-2007-004
5	Glenn Scheffler Contract #RL-2007-003
6	ICC Contract Contract#RL-2007-006
7	Kelvin Hecht Contract #RL-2007-001
8	NFPA Contract #RL-2007-005
9	NHA Contract #RL-2007-008
10	SAE Contract #RL-2007-009
11	USFCC Contract #RL-2007-007



# Approach

- In close collaboration with DOE Hydrogen Program and Technical Advisors, develop streamlined contracting procedures, including multi-year contracts
- Consistent with DOE requirements, advocate Subawardee Improvement suggestions
- Utilizing modern electronic funds transfers, reduce invoice to payment time to less than 1 week
- Deliver low overhead services with experienced energy and business professionals

## Task Schedule

Task Number	Project Milestones	Task Completion Date				Progress Notes
		Original Planned	Revised Planned	Actual	Percent Complete	
1	Task 1.0 Coordinate with DOE, National Laboratory Representatives and Other Relevant Agencies	10/30/06	11/31/06	11/31/06	100%	Complete.
2	Subtask 1.1 Define Criteria for the Selection of Industry, CDO and SDO Participants	10/30/06	12/31/06	12/31/06	100%	Complete
3	Subtask 1.2 Selection of CDOs, SDOs and Industry Organizations	11/31/06	12/31/06	12/31/06	100%	Complete
4	Subtask 1.3 Negotiate with Selected CDOs and SDOs for Contracts	11/31/06	12/31/06	01/30/07	85%	3 Remaining
5	Subtask 2.1 Manage Subcontract Performance	10/01/06	10/01/06	10/01/06	Ongoing	
6	Subtask 2.2 Coordinate Collaboration Between CDOs, SDOs and Industry Organizations	10/01/06	10/01/06	10/01/06		Ongoing
7	Task 5.0 Project Management and Reporting	10/01/06	10/01/06	10/01/06		Ongoing

# ANSI WEB PORTAL

<http://hcsp.ansi.org>

**HYDROGEN CODES AND STANDARDS PORTAL** POWERED BY 

HOME SEARCH RESOURCES CONTACT HELP FEEDBACK

U.S. Department of Energy  
National Renewable Energy Laboratory  
American National Standards Institute  
ANSI Standards Store

About the Hydrogen Codes and Standards Portal

Hydrogen and Fuel Cells Permitting Guide

Browse by subject:

Vehicle Systems and Refueling Facilities

On-Site Hydrogen Generation and Fuel Cells





**About | the hydrogen codes and standards portal**

The Hydrogen Codes and Standards portal grew out of discussions between the Department of Energy's National Renewable Energy Laboratory (NREL) and the American National Standards Institute (ANSI). The initial idea was to provide a single point for people to find information about the various codes, standards, and regulations that apply to the use of hydrogen as a fuel source. It was proposed that ANSI coordinate the effort, with participation by NREL and other federal government agencies, private sector standards developing organizations, and state and local governments.

An initial meeting was held to get the project started. Attending the meeting were representatives from:

- ANSI
- NREL
- Department of Energy
- American Petroleum Institute
- American Society of Mechanical Engineers
- ASTM International
- International Code Council
- National Fire Protection Association
- SAE International
- Underwriters Laboratories
- Connecticut Department of Public Safety
- Massachusetts Department of Public Safety
- New York Department of State, Building Codes Division
- Rhode Island State Building Code Commission

Various presentations were given that covered ANSI's database expertise, an overview of the Department of Energy expectations of the portal, an overview of the technology, and an presentation of the two templates that form the classification system for the entire hydrogen fuel arena.

It was decided that the SDOs would provide ANSI with information about their standards and into which classification they belonged. This data forms the core of the database, and is accessible either by browsing

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[HEC Demonstrates New Hydrogen-Fueled 4 + 1 Power Generator System](#)

[HEC Demonstrates New Hydrogen-Fueled 4 + 1 Power Generator System](#)

[Expanding Connecticut's Hydrogen and Fuel Cell Industries](#)

[Hydrogen Fuel Cells Make Good Business for Professionals](#)

[4th Annual Southeastern Fuel Cell & Hydrogen Conference Set for ...](#)

[Hydrogen & Fuel Cells 2007 - in Vancouver](#)

[The Group Exhibit Hydrogen-Fuel Cells Set For April 16-20, 2007](#)

[Hydrogen Fuel Cell Bus begins tour of Arizona](#)

[CEGASA to Lead Team of 15 Companies in Hydrogen Fuel Cell Research](#)



# CODES & STANDARD MATRIX

## KELVIN HECHT

<http://www.fuelcellstandards.com/Matrix.htm>

### By Application

- 1.0 [Stationary Fuel Cell Applications](#)  
[PDF File of Stationary Matrix](#)
- 2.0 [Transportation Fuel Cell Applications](#)  
[PDF File of Transportation Matrix](#)
- 3.0 [Portable / Micro Fuel Cell Applications](#)  
[PDF File of Portable Matrix](#)
- 4.0 [Hydrogen Infrastructure](#)  
[PDF File of Hydrogen Matrix](#)
- 5.0 [Miscellaneous \(Other Fuels, Definitions, Marine Fuel Cell Applications\)](#)  
[PDF File of Misc. Matrix](#)

### By Geographic Location & Organization

- A. [International](#)
- B. [North America](#)
- C. [Europe](#)
- D. [Pacific Rim](#)

# Future Work

- **Completion of All Remaining SubAwards for 2007**
- **Continue Streamlining Through Electronic Payment Systems**
- **Reduce SubAwardee Transaction Time & Expense Required for Annual Contract Extensions for 2008 and Beyond**



# Project Summary

- **Approximately 1/3 through first and transitional year for Regulatory Logic LLC Award Placement**
- **Initial requirement of cost-share with Codes & Standards partners being addressed**
- **Positive response to streamlined electronic payments systems, which have led to invoice to payment times <1 week**

# Questions?



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