



Technical Report NREL/TP-5600-51578 March 2011

Spring 2011 Composite Data Products Backup Power

J. Kurtz, K. Wipke, S. Sprik, T. Ramsden, C. Ainscough, G. Saur

NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, operated by the Alliance for Sustainable Energy, LLC. Contract No. DE-AC36-08GO28308

NOTICE

This report was prepared as an account of work sponsored by an agency of the United States government. Neither the United States government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States government or any agency thereof.

Available electronically at http://www.osti.gov/bridge Available for a processing fee to U.S. Department of Energy and its contractors, in paper, from: U.S. Department of Energy Office of Scientific and Technical Information P.O. Box 62 Oak Ridge, TN 37831-0062 phone: 865.576.8401 fax: 865.576.5728 email: mailto:reports@adonis.osti.gov

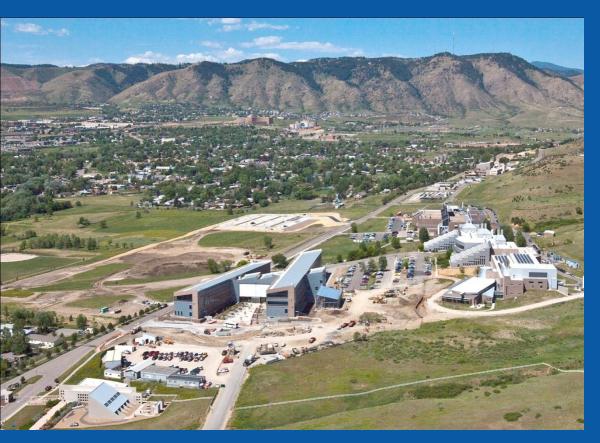
Available for sale to the public, in paper, from: U.S. Department of Commerce National Technical Information Service 5285 Port Royal Road Springfield, VA 22161 phone: 800.553.6847 fax: 703.605.6900 email: <u>orders@ntis.fedworld.gov</u> online ordering: http://www.ntis.gov/help/ordermethods.aspx

Cover Photos: (left to right) PIX 16416, PIX 17423, PIX 16560, PIX 17613, PIX 17436, PIX 17721

Printed on paper containing at least 50% wastepaper, including 10% post consumer waste.



Spring 2011 Composite Data Products Backup Power



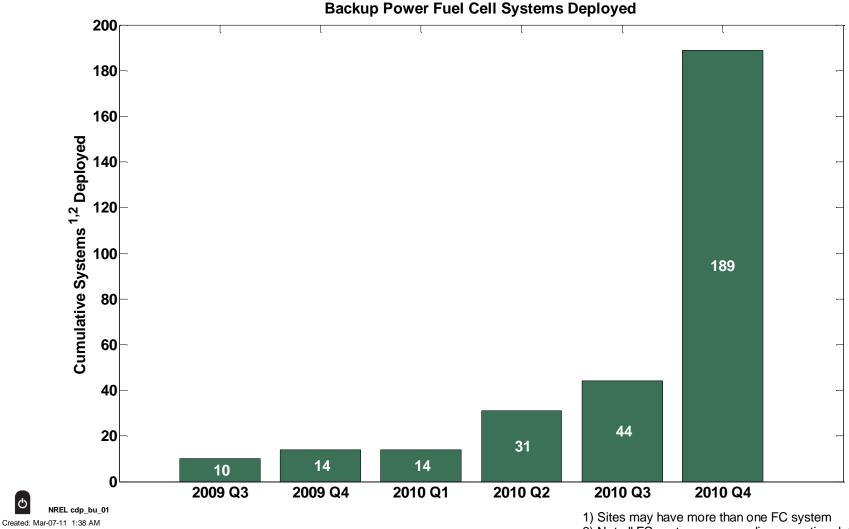
J. Kurtz, K. Wipke, S. Sprik, T. Ramsden, C. Ainscough, G. Saur

March 29th, 2011

TP-5600-51578

NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.

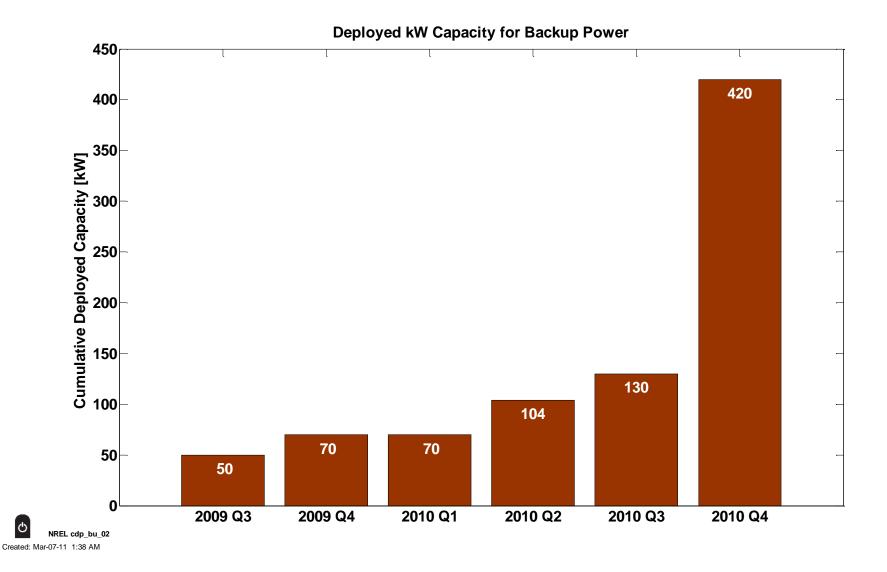
CDP-BU-01 **Backup Power Fuel Cell Systems Deployed**



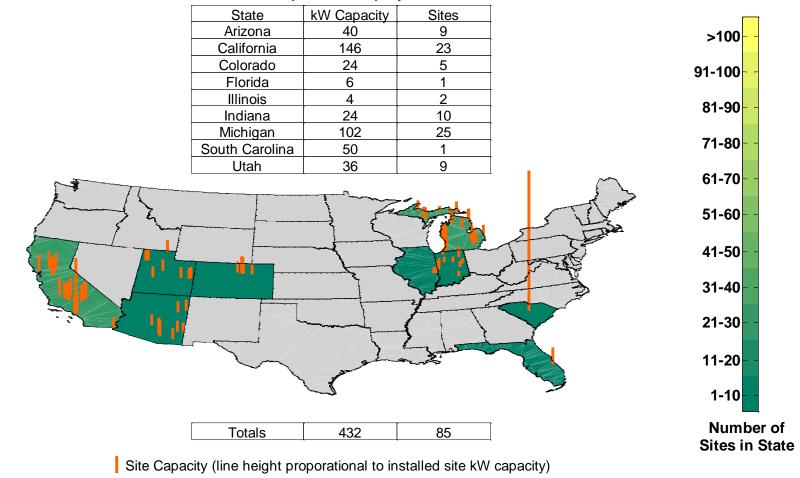
2) Not all FC systems are suppling operation data

ථ

CDP-BU-02 Deployed kW Capacity for Backup Power



CDP-BU-03 Backup Power Deployments



Backup Power Deployments

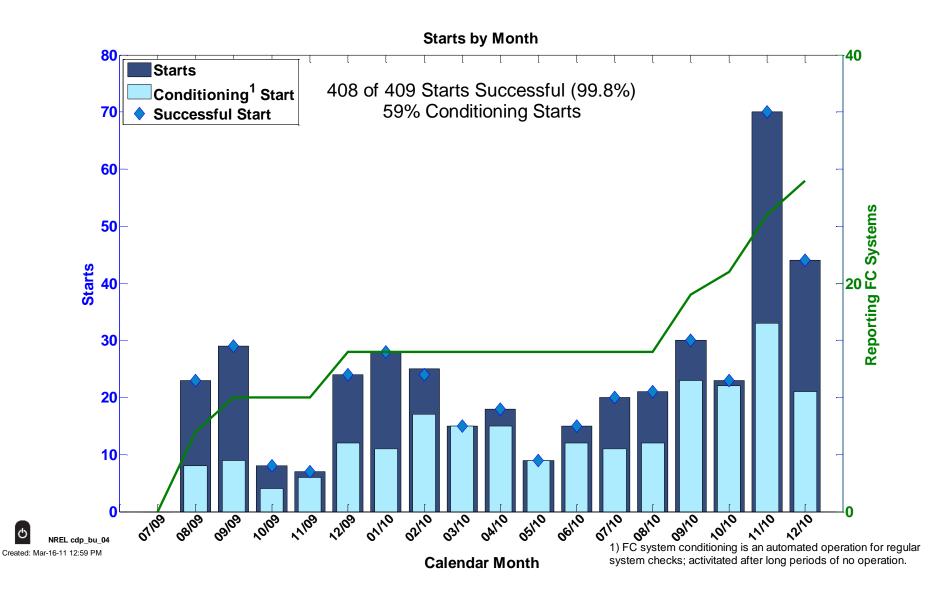
NATIONAL RENEWABLE ENERGY LABORATORY

ථ

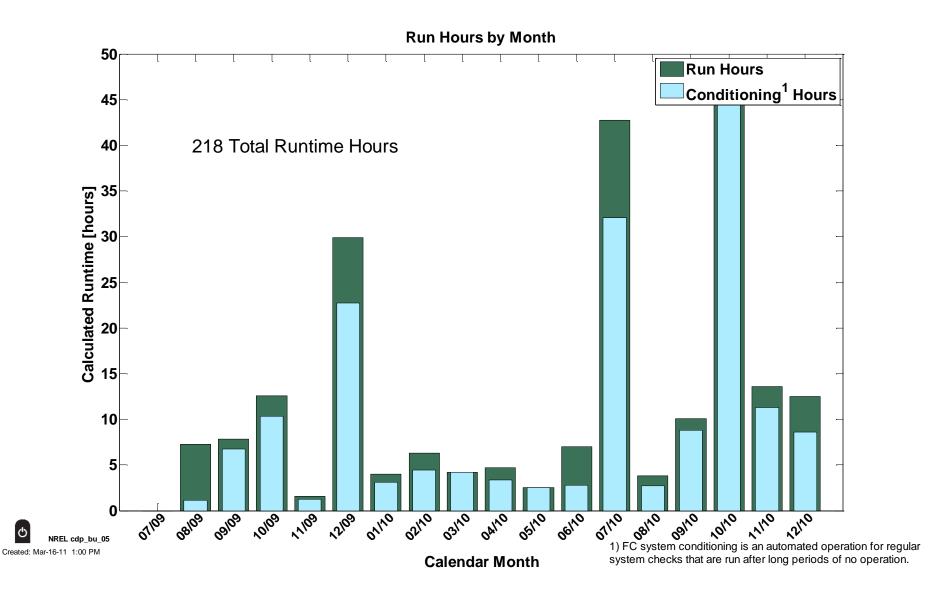
NREL cdp_bu_03

Created: Mar-07-11 1:38 AM

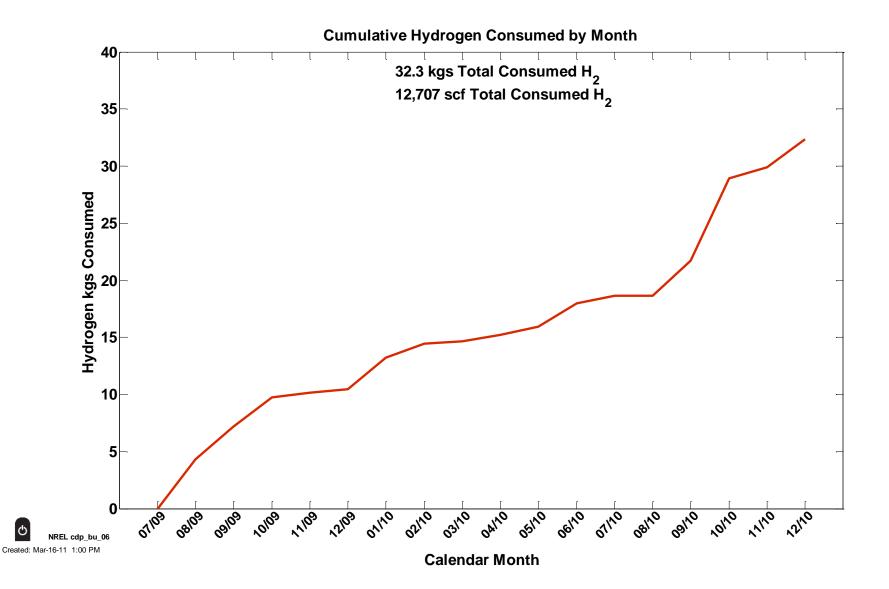
CDP-BU-04 Fuel Cell System Starts by Month



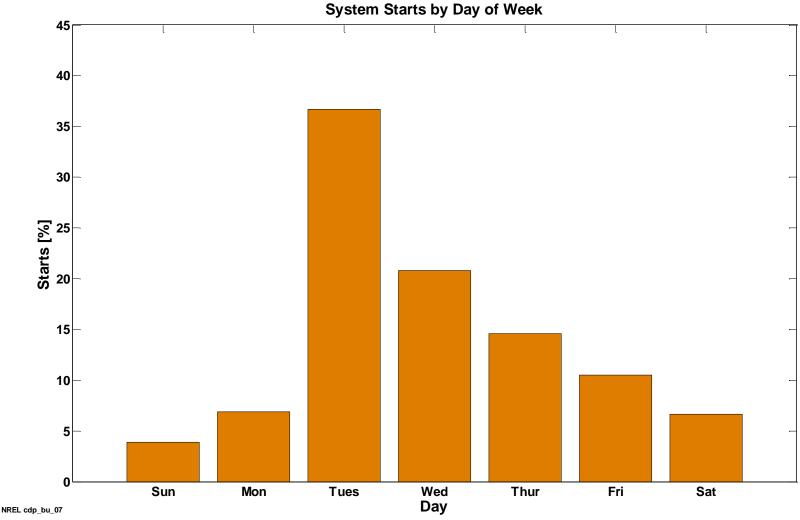
CDP-BU-05 Fuel Cell System Run Hours by Month



CDP-BU-06 Cumulative Hydrogen Consumed by Month



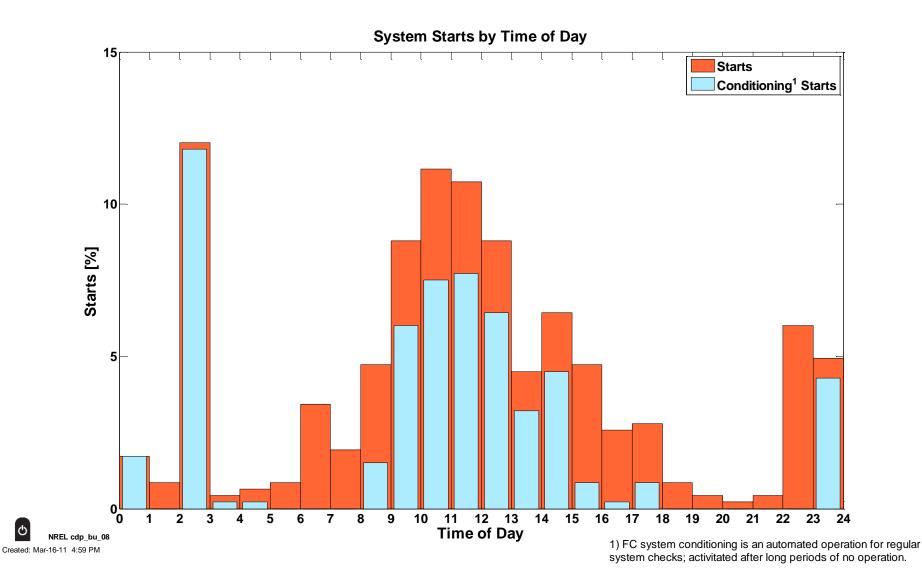
CDP-BU-07 Fuel Cell System Starts by Day of Week



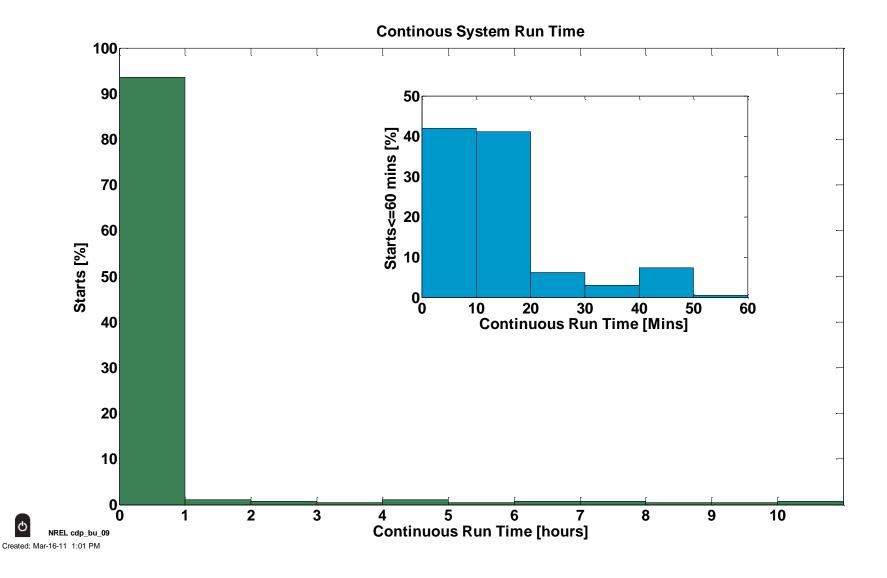
Created: Mar-16-11 5:01 PM

C

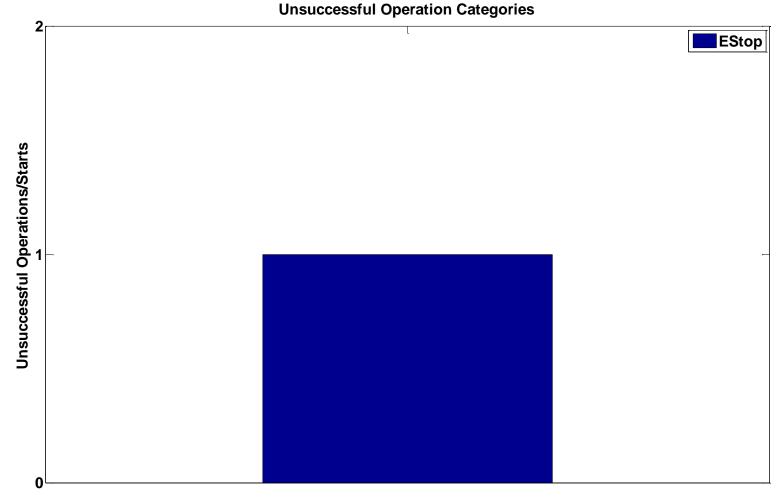
CDP-BU-08 Fuel Cell System Starts by Time of Day



CDP-BU-09 Continuous Fuel Cell System Run Time



CDP-BU-10 Unsuccessful Operation Categories



Created: Mar-16-11 4:37 PM