Section J

Attachment 12

Department of Energy
Office of Energy Efficiency and Renewable Energy

MISSION STRETCH GOALS

and

PERFORMANCE EVALUATION AND MEASUREMENT PLAN

for the

Management and Operating Contract

at the

National Renewable Energy Laboratory

INTRODUCTION

This document describes the Mission Stretch Goal(s) developed to incentivize MRI's (hereafter referred to as "the Contractor") performance in two areas specific to the National Renewable Energy Laboratory (hereafter referred to as "the Laboratory") for the evaluation period from November 9, 2003, through November 8, 2008. These Mission Stretch Goals identify multi-year, exceptional results and initiatives that the Contractor is incentivized to achieve over the duration of the contract. These goals are designed to significantly advance the Office of Energy Efficiency and Renewable Energy's (EE) mission and require inspired Contractor performance above and beyond that which is normally expected to be accomplished in meeting program goals within the annual performance evaluation and measurement plan (Section J, Attachment 6). To achieve these stretch goals, the Contractor must undertake extraordinary efforts, including mobilization of its Board of Directors and Trustee, commitment of its corporate talent and capital, use of non-standard management techniques, and a long-term commitment to DOE at NREL to reach truly exceptional performance. These stretch goals are:

- Breakthrough Technology for a National Hydrogen Economy in Production-- Identify materials/systems that can achieve greater than 10% solar to H2 efficiency, with projected durability of 10,000 hours and a cost of $22/kg by November 8, 2008.

- Breakthrough Technology for a National Hydrogen Economy in Storage -- Produce quantities of carbon nanotube materials for bench-scale testing of a system with potential to achieve 6 weight %, 1.5 kWh/L and $4/kWh is synthesized by November 8, 2008.

This document details the scope of the stretch goals and the expectations of the parties. This document also describes the distribution of the total available Mission Goal(s) incentives and the methodology for determining the amount of reward earned by the Contractor as stipulated within the clauses entitled, "Determining Total Available Mission Stretch Goal(s) Incentive Fee and Fee Earned (see Section J, Attachment 12, item 2.0," "970.5215-3 Conditional Payment of Fee, Profit, and other Incentives-Facility Management Contracts (JAN 2004)(Alternate I)," "H-18 Conditional Payment of Fee Process," and "970.5215-1 Total Available Fee: Base Fee Amount and Performance Fee Amount (DEC 2000)." In recognition of the Contractor's desire to advance EE's mission through NREL, EE has accepted these Stretch Goal(s) as evidence of the Contractor's commitment to enhancing the energy security of the nation and to ensure NREL's long-term viability in service of the EE mission..

The overall performance against these Mission Stretch Goal(s) plan will be used to determine the amount of the total available Mission Stretch Goal(s) incentive earned by the Contractor as stipulated within the contract clauses "Determining Total Available Mission and Institutional Stretch Goal(s) Incentive Fee and Fee Earned" and "Total Available Fee: Base Fee and Performance Fee Amount." The Contractor may receive a Mission Goal(s) incentives of up to $4,000,000 based on the Contractor's ability to meet the Mission Stretch Goal(s) set forth within this document.

2.0 DETERMINING THE CONTRACTOR'S PERFORMANCE IN MEETING MISSION STRETCH GOAL(S) AND INCENTIVE FEE EARNED

The DOE shall verify and validate Contractor's success in meeting the Mission Stretch Goal(s) based on the criteria outlined in Section 3.0, Mission Stretch Goals, Objectives, & Performance Measures. The Mission Stretch Goal(s) and their associated objectives shall be evaluated and fee earned awarded independently of each other. Each of the Mission Stretch Goal(s) is comprised of objectives which will be used to determine the Contractor's overall success in meeting each Mission Stretch Goal. Incentives are linked to performance objectives. In order to earn an incentive, the Contractor must meet, to the satisfaction of EE, the components of the specific objective. Incentives for the Mission Stretch Goal are detailed in Table 1.

In order to earn the Mission Stretch Goals incentive, the Contractor must maintain an overall annual performance evaluation rating in the "Outstanding" range for Science and Technology each year of the term of this contract. Should the Contractor not meet the above standards, the overall available Mission

Stretch Goal incentive fee for all current objectives (those objectives not yet completed) shall be reduced by 25 percent for each year the standard is not met.

Should the Contractor believe it has successfully met a Mission Stretch Goal objective prior to the scheduled date, the Contractor shall notify the Contracting Officer in writing. Upon such notification, the Contracting Officer may, at his/her sole discretion, verify/validate such claim, determine whether the Contractor has met the objective, and award any Mission Stretch Goal incentive earned.

3.0 MISSION STRETCH GOALS, OBJECTIVES, & PERFORMANCE MEASURES

The following sub-sections describe the stretch goals, objective(s), and associated performance measures for the contract period. These Mission Stretch Goal(s) are each extraordinary, and accomplishment of them will represent exceptional performance.

3.1. MISSION STRETCH GOAL - BREAKTHROUGH TECHNOLOGY FOR A NATIONAL HYDROGEN ECONOMY

The President's Hydrogen Fuel Initiative calls for a significant national effort to stimulate the development and commercialization of pollution-free, hydrogen-powered automobiles and hydrogen-powered fuel cells for stationary applications. Meeting the challenge of accelerating the program goals to 2015 (instead of 2030) will require significant and unprecedented effort by government and industry. The scale and complexity of this endeavor cannot be overstated. The role of the Department of Energy is to develop and validate the technologies that will enable industry to make commercialization decisions that will lead to establishing and evolving a national hydrogen infrastructure based on domestic resources, thereby reducing dependence on foreign oil. DOE has challenged the National Renewable Energy Laboratory to conduct R&D to develop break-through technologies and, in addition, has asked the Laboratory to establish the requisite capabilities and act as Systems Integrator for the DOE Hydrogen Program. The Office of Energy Efficiency and Renewable Energy (EE) anticipates that the business and technical approaches developed by the Systems Integrator will be a model applicable to most or all of EE's remaining programs.

Significant technical challenges exist in all six elements of the DOE Hydrogen Program – production, delivery, storage, conversion, applications, and safety, codes, and standards. In the near- to mid-term, most hydrogen will likely be produced from distributed natural gas and some coal and/or biomass, or by electrolysis using conventional electricity sources. Over the longer term, the goal is to produce hydrogen from a diverse array of domestic, sustainable resources. Realizing a significant reduction in the Nation's dependence on foreign oil will require developing cost-effective, on-board hydrogen storage systems. The DOE Hydrogen Program will require significant breakthroughs in production and storage science and technology to successfully develop systems that can meet the aggressive technical targets established in its RD&D plans. Early-stage research in carbon nanotubes appears promising, but many questions remain to be addressed before carbon storage systems can be developed that demonstrate capacities and reversibility at practical operating temperatures and pressures and within refueling time constraints. For example, fundamental understanding of mechanisms for stabilizing hydrogen on carbon-based surfaces at energies intermediate between physisorption and chemisorption processes is required in order to design materials with optimal hydrogen uptake and release properties. Cost-effective photoelectrochemical production of hydrogen from water using sunlight, will require breakthroughs in materials science to improve the efficiency of conversion and the durability of the material. These challenges will require assembling highly effective multi-disciplinary teams of scientists and engineers from the laboratories, universities and industry.

BREAKTHROUGH TECHNOLOGY FOR A NATIONAL HYDROGEN ECONOMY

By November 8, 2008, the Contractor will accomplish the following national hydrogen production and storage sub goals in support of the nation's migration to a hydrogen economy:

3.1.1. Breakthrough Technology for Hydrogen Production from Renewables -- Identify materials/systems that can achieve greater than 10% solar to H2 efficiency, with projected durability of 10,000 hours and a cost of $22/kg by November 8, 2008.
3.1.2. Breakthrough Technology for Hydrogen Carbon Nanotube Storage -- Produce quantities of carbon nanotube materials for bench-scale testing of a system with potential to achieve 6 weight %, 1.5 kWh/L and $4/kWh is synthesized by November 8, 2008.

Table 1 details the Mission Stretch Goal objectives and associated incentives.

Mission Stretch Goal Objectives	Monetary Incentive	Term Incentive
3.1 Breakthrough Technology for a National Hydrogen Economy		
3.1.1 Identify materials and systems that can achieve greater than 10% solar to H_2 efficiency, with projected durability of 10,000 hours and a cost of $22/kg by November 8, 2008.	$2.0M	None
3.1.2 Produce quantities of carbon nanotube materials for bench-scale testing of a system with the potential to achieve a 6 weight %, 1.5 kWh/L and $4/kWh is synthesized by November 8, 2008.	$2.0M	None
Total Incentive Available	$4.0M	None

The Hydrogen Mission Stretch Goal has used as a baseline the draft Multi-Year Research Development and Demonstration Plan (June 2003) for the DOE/EERE Hydrogen, Fuel Cells, and Infrastructure Technologies Program.

DOE recognizes and acknowledges that certain events, including but not limited to, Hydrogen funding program decreases, changes in program direction and program priorities, and force majeure, may change such that the goal is no longer feasible. Failure to accomplish this goal because of goal infeasibility, due to events outside the control of the Contractor, as set out above, will be treated by DOE without prejudice in subsequent contract actions.