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Hydrogen Fuel Cells and Electric Forklift Trucks

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The Raymond Corporation

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Value Proposition and Fuel Cell Tax Credit

H. R. 1424

One Hundred Tenth Congress
of the
United States of America

AT THE SECOND SESSION

*Begun and held at the City of Washington on Thursday,
the third day of January, two thousand and eight*

An Act

To provide authority for the Federal Government to purchase and insure certain types of troubled assets for the purposes of providing stability to and preventing disruption in the economy and financial system and protecting taxpayers, to amend the Internal Revenue Code of 1986 to provide incentives for energy production and conservation, to extend certain expiring provisions, to provide individual income tax relief, and for other purposes.

*Be it enacted by the Senate and House of Representatives of
the United States of America in Congress assembled,*

**DIVISION A—EMERGENCY ECONOMIC
STABILIZATION**

SECTION 1. SHORT TITLE AND TABLE OF CONTENTS.

(a) **SHORT TITLE.**—This division may be cited as the “Emergency Economic Stabilization Act of 2008”.

(b) **TABLE OF CONTENTS.**—The table of contents for this division is as follows:

- Sec. 1. Short title and table of contents.
- Sec. 2. Purposes.
- Sec. 3. Definitions.

TITLE I—TROUBLED ASSETS RELIEF PROGRAM

- Sec. 101. Purchases of troubled assets.
- Sec. 102. Insurance of troubled assets.
- Sec. 103. Considerations.
- Sec. 104. Financial Stability Oversight Board.
- Sec. 105. Reports.
- Sec. 106. Rights; management; sale of troubled assets; revenues and sale proceeds.
- Sec. 107. Contracting procedures.
- Sec. 108. Conflicts of interest.
- Sec. 109. Foreclosure mitigation efforts.
- Sec. 110. Assistance to homeowners.
- Sec. 111. Executive compensation and corporate governance.

- Federal fuel cell tax credit increased in “Bailout Bill”
 - **\$3000/kW or 30% of unit price** whichever is less
- Tax credits **extended to 2016**
- Has a significant impact on financial viability

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Sample Financial Analysis



- Illustrate impact of key factors on value proposition
 - Tax credit
 - Labor rate
 - Battery change time
 - Productivity improvement
- Assume **large distribution center with 125 trucks**
 - 6 Class 1 counterbalance trucks
 - 4 Class 2 order picker trucks
 - 25 Class 2 reach trucks
 - 90 Class 3 pallet trucks
- **24/7 operation**
 - Most trucks run 2 shifts

Key Assumptions

- Average **battery change time** = 10 minutes
 - Includes occasional queue
- Range of **hydrogen fill time** = 2 – 4 minutes
 - If hydrogen fill rate = 0.4 kg/min
- **Battery life** = 1500 discharge cycles \approx 5 years
- **Fuel cell stack life** = 7500 hours \approx 2 – 7 years
- **Electricity cost** = \$0.10/kWh
- **Hydrogen cost** = \$6/kg
- **Productivity improvement** = 2%

Results – Single Variable Analysis

Case	Range	NPV	ROI
Breakeven	-	\$0.0M *	0%
Labor rate	\$25 - \$35/hr	\$1.2M increase	100%
Battery change time	10 – 15 min	\$0.9M increase	70%
Tax credit	0 – 30%	\$1.0M increase	80%
Productivity	2 – 4%	\$1.1M increase	90%

* Initial incremental investment = \$1.3M