



SIMPLIFYING SOLAR



Solar Incentive Program Design



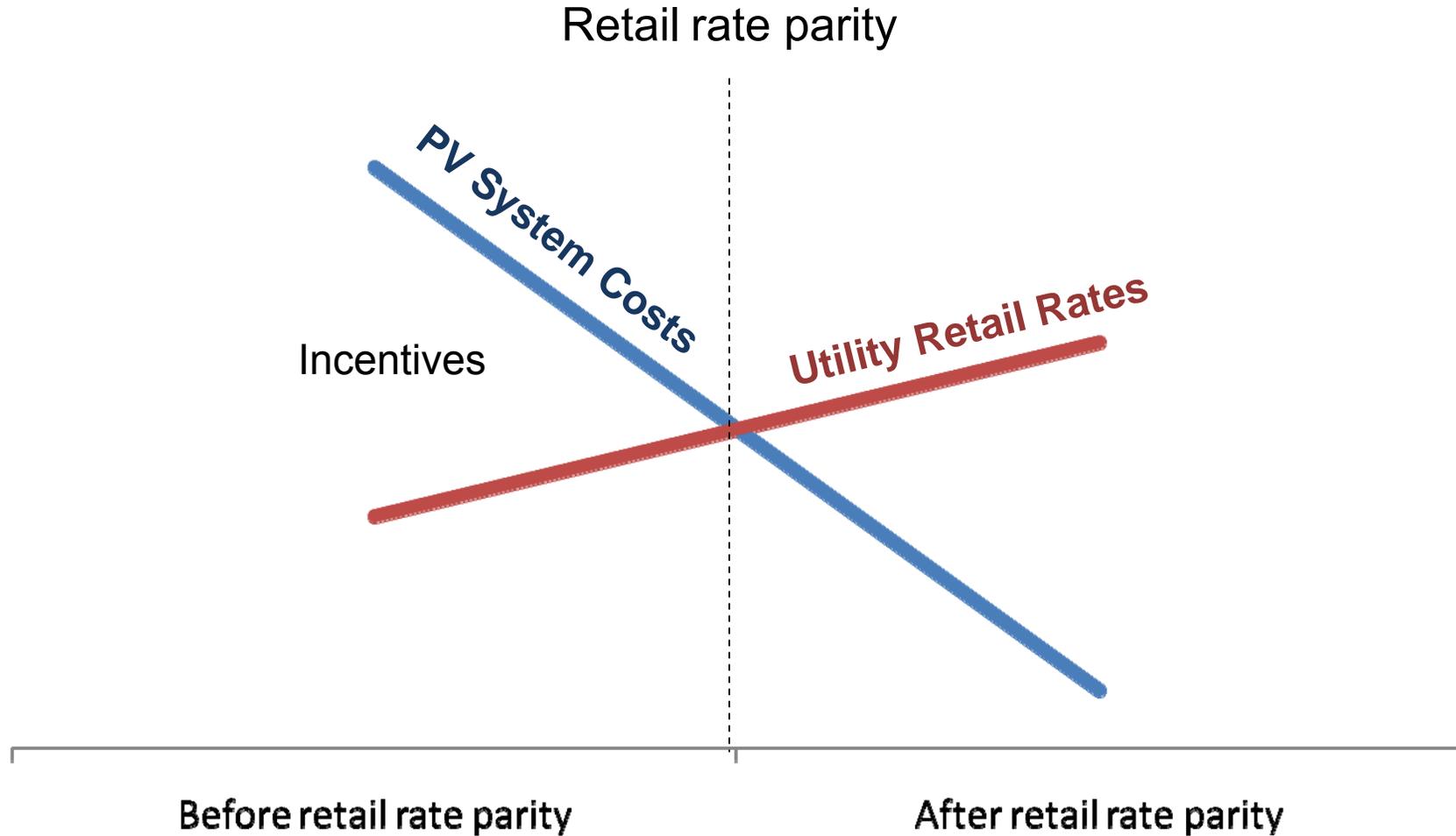
RPS Technical Conference

Fred Zalcman

Director of Regulatory Affairs

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Incentives Accelerate Drive to Grid Parity



Desired Program Attributes



- Offers price transparency
- Supports project finance
- Responsive to changing market conditions
- Encourages diversity of system sizes and market segments
- Fosters transition to grid parity

Transitional Strategy



Getting a bigger bang for the buck

- Reduce incentive levels
- Consider alternative rebate schemes
 - Declining block incentive structure
 - Competitively based incentives
- Support larger systems

Taking the Market to Scale



- Transition to performance-based incentives for net metered solar
- Support grid-side solar w/in MT
 - Target deployment in high value regions
- Leverage utility “patient capital”

Thank you! Questions?



Fred Zalcman

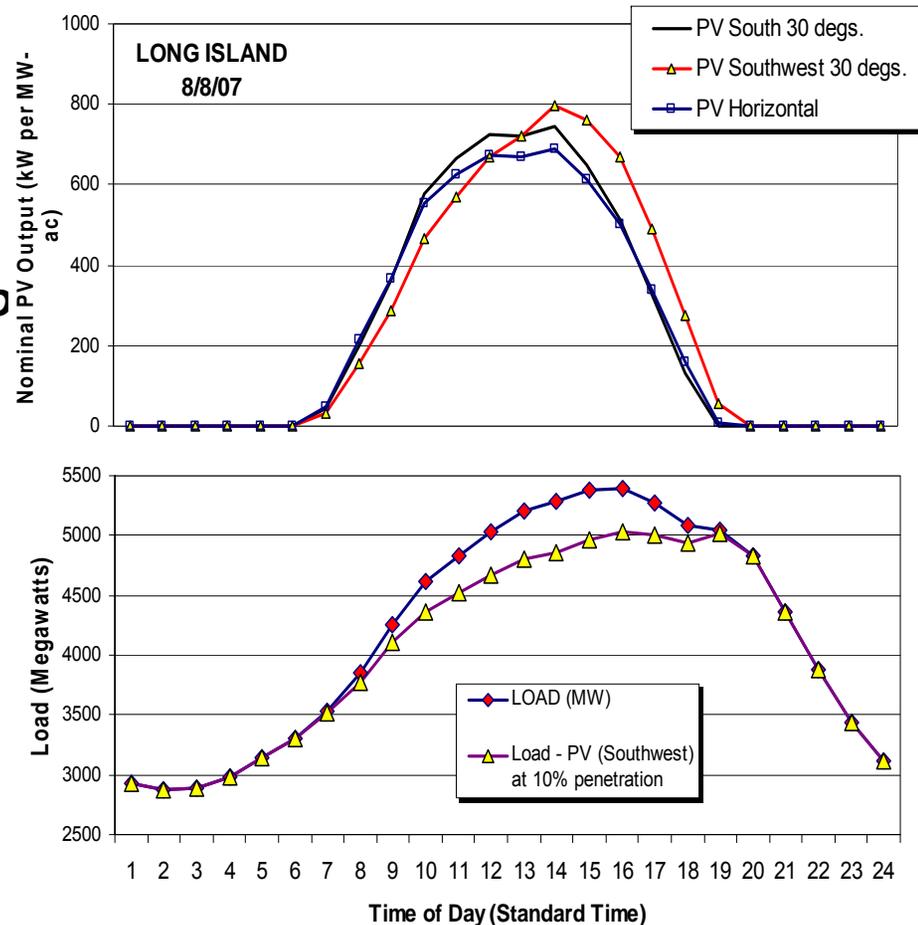
fzalcman@sunedison.com

301-974-2721

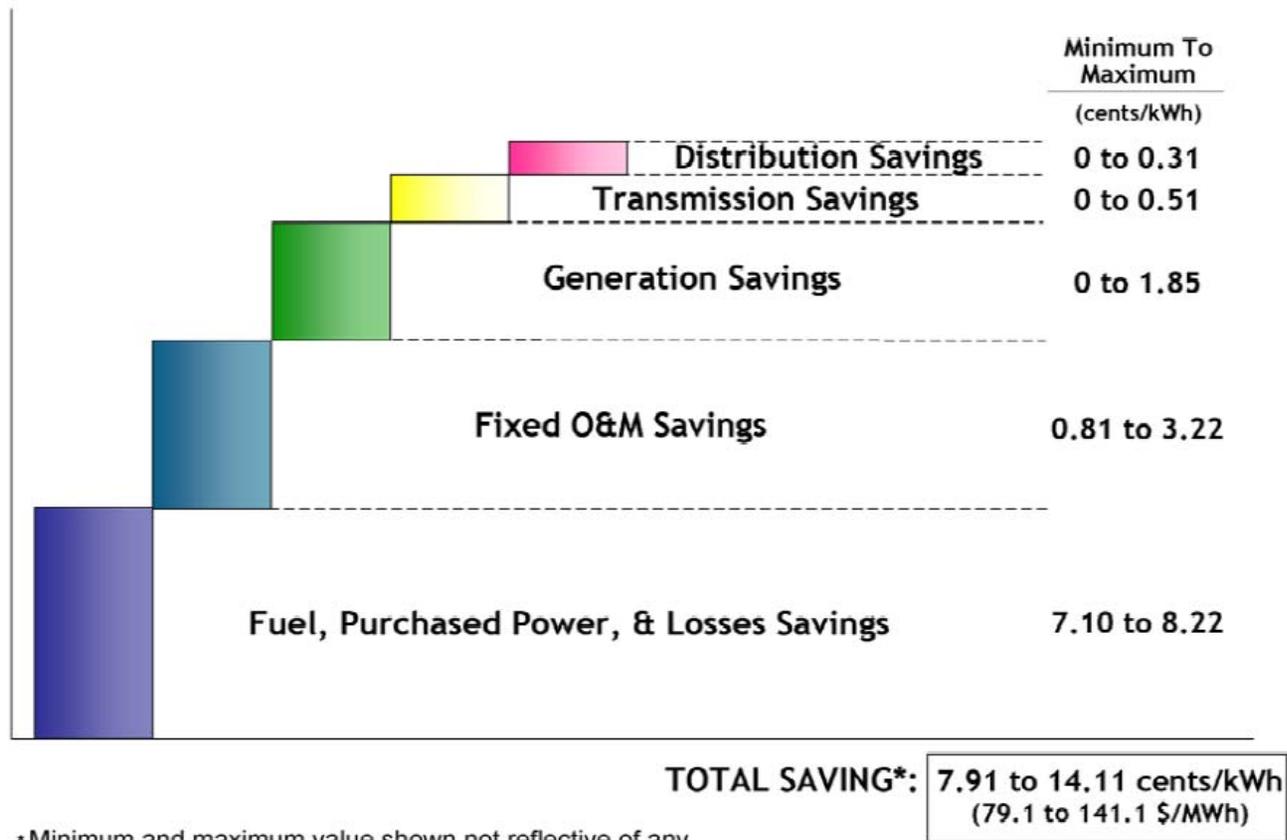


Solar PV: Solving New York's Peak Energy Dilemma

- **Second highest average retail electric prices in the country; 35% higher than 2001**
 - Solar power output highly correlated with peak price periods
- **Difficult to site new power plants to keep pace with rising demand**
 - Ample roof space, strong sunlight
- **Support state climate and other environmental objectives**
 - No emissions of GHG or other criteria pollutants
- **Aging and increasingly stressed distribution network**
 - Decentralized solution that can help defer or avoid distribution system investment



Solar DE Value Buildup



Source: R.W. Beck (2009)



Tracking the Sun – Study of PV Cost Trends

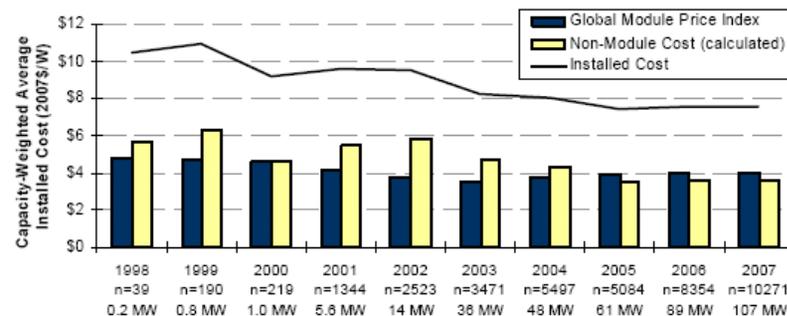
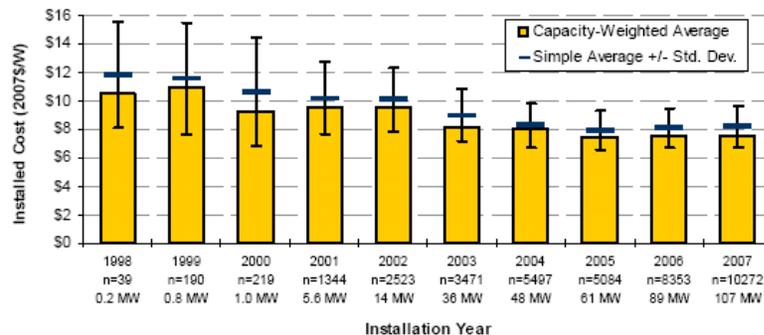
Average annual system costs continue to decline at a rate of ~3.5% p.a.

PV installed costs exhibit significant economies of scale

- Systems >750 kw are ~25% less per watt installed than smallest systems

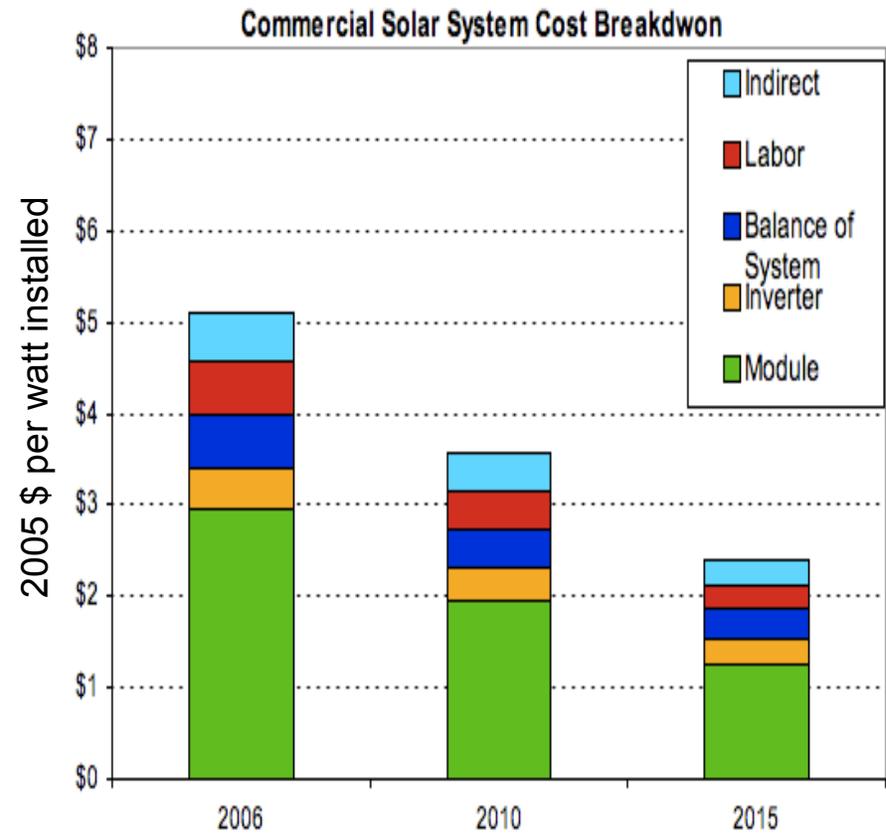
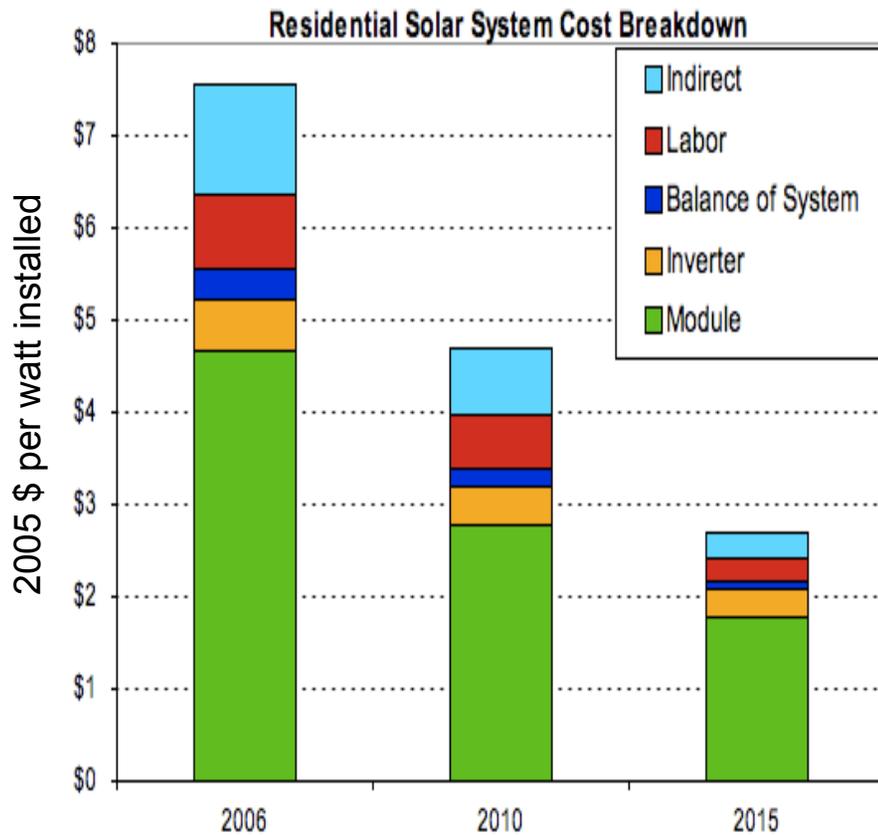
Non-module costs accounting for 73% of total cost decline

- Directly attributable to state incentive programs
- States with the largest markets have somewhat lower installed costs



“...PV deployment policies have achieved some success in fostering competition within the industry and in spurring improvements in the cost structure and efficiency of the delivery infrastructure.”

Module and Balance of System Cost Projections - USDOE

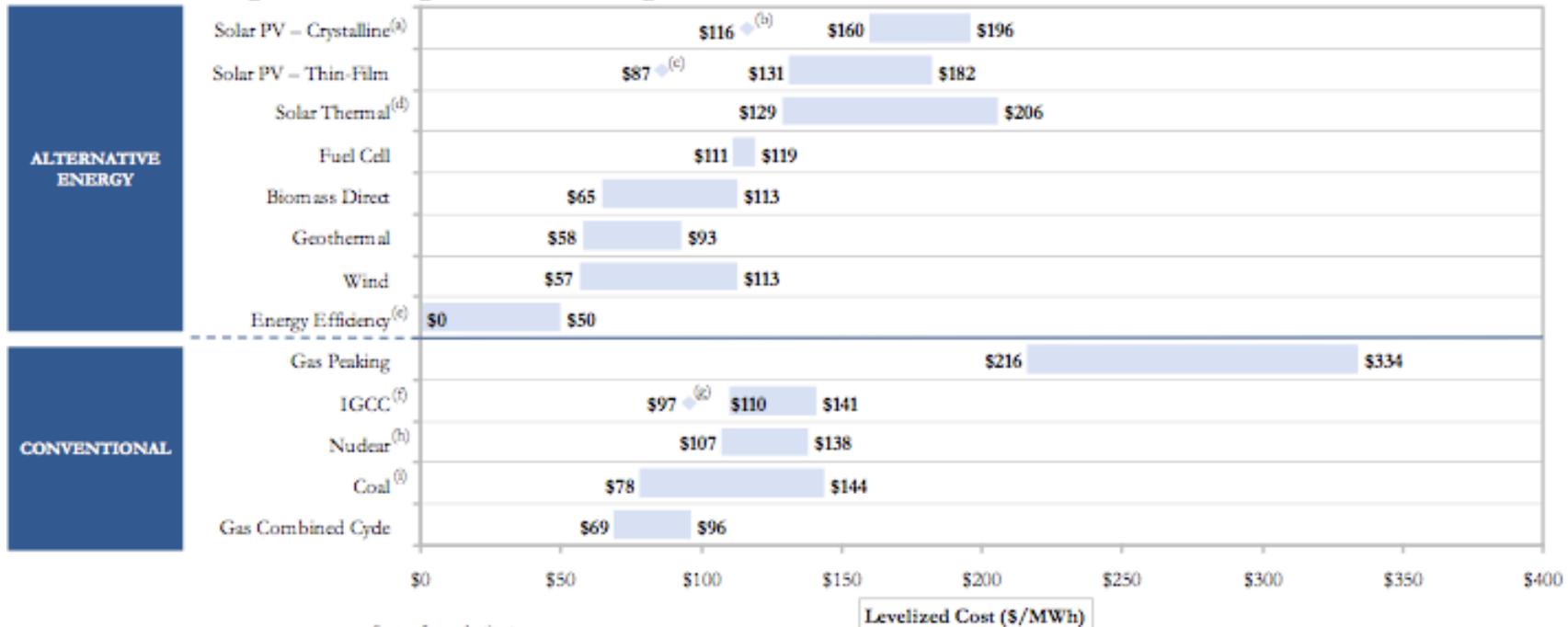


- Note the high level of indirect and labor costs - these are driven by regulatory, educational and financing hurdles (non-R&D).

Established solar manufacturers are realizing cost reductions across the value chain and will reduce installed system cost by approximately 50% by 2015

Levelized Cost of Energy

Certain Alternative Energy generation technologies are becoming increasingly cost-competitive with conventional generation technologies under some scenarios, before factoring in environmental and other externalities (e.g., RECs, potential carbon emission costs, transmission and back-up generation/system reliability costs) as well as construction and fuel costs dynamics affecting conventional generation technologies



Source: Lazard estimates.

Note: Reflects production tax credit, investment tax credit and accelerated asset depreciation, as applicable. Assumes 2008 dollars, 20-year economic life, 40% tax rate and 5-20 year tax life. Assumes 30% debt at 8.0% interest rate, 40% tax equity at 8.5% cost and 30% common equity at 12% cost for Alternative Energy generation technologies. Assumes 60% debt at 8.0% interest rate and 40% equity at 12% cost for conventional generation technologies. Assumes coal price of \$2.50 per MMBtu and natural gas price of \$6.00 per MMBtu.

(a) Low end represents single-axis tracking crystalline. High end represents fixed installation.

(b) Represents estimated implied levelized cost of energy in 2012, assuming a total system cost of \$3.50 per watt for single-axis tracking crystalline.

(c) Represents a leading thin-film company's targeted implied levelized cost of energy in 2012, assuming a total system cost of \$2.00 per watt.

(d) Low end represents solar tower. High end represents solar trough.

(e) Estimates per National Action Plan for Energy Efficiency: actual cost for various initiatives varies widely.

Source: Lazard Freres (2009)