LEVELIZED COST OF ENERGY ANALYSIS

LAZARD

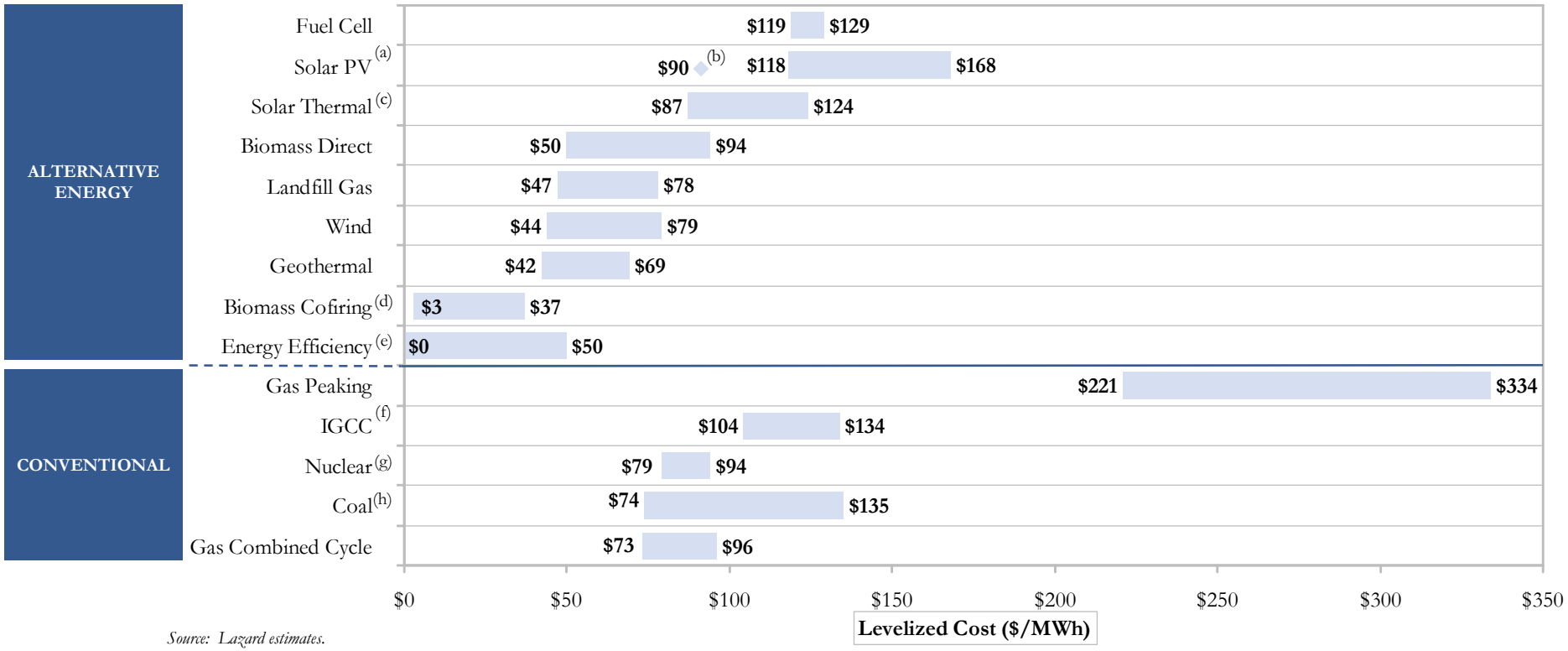
Introduction

This presentation will address the following topics:

- Comparative "levelized cost of energy" for various technologies on a $/MWh basis, including sensitivities, as relevant, for:
  - Fuel costs
  - Illustrative carbon emission costs
  - U.S. federal tax subsidies
- Comparison of assumed capital costs on a $/kW basis for various generation technologies
- Decomposition of the levelized costs of energy for various generation technologies by capital costs, fixed operations & maintenance expense, variable operations & maintenance expense, and fuel costs, as relevant
- Considerations regarding the applicability of various generation resources, taking into account factors such as location requirements/constraints, dispatch characteristics and contingencies such as carbon pricing
- Summary assumptions for the various generation technologies examined
- Summary of Lazard's approach to comparing the levelized cost of energy for various conventional and Alternative Energy generation technologies, including identification of key potential sensitivities not addressed in the scope of this presentation

Levelized Cost of Energy Comparison

Certain Alternative Energy generation technologies are already cost-competitive with conventional generation technologies under some scenarios, even before factoring in environmental and other externalities (e.g., RECs, potential carbon emission costs, transmission costs) as well as the fast-increasing construction and fuel costs affecting conventional generation technologies



Source: Lazard estimates.

Note: Reflects production tax credit, investment tax credit, and accelerated asset depreciation as applicable. Assumes 2008 dollars, 60% debt at 7% interest rate, 40% equity at 12% cost, 20-year economic life, 40% tax rate, and 5-20 year tax life. Assumes coal price of $2.50 per MMBtu and natural gas price of $8.00 per MMBtu.

(a) Low end based on total system cost per watt of $3.99 per First Solar investor presentation dated December 3, 2007. High end based on utility-scale crystalline facility.

(b) Represents First Solar's targeted implied levelized cost of energy in 2010, assuming a total system cost of $2.75 per watt. First Solar 2012 guidance for total system cost of $2.00 per watt would imply a levelized cost of energy of $75 per MWh.

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

(d) Represents retrofit cost of coal plant.

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

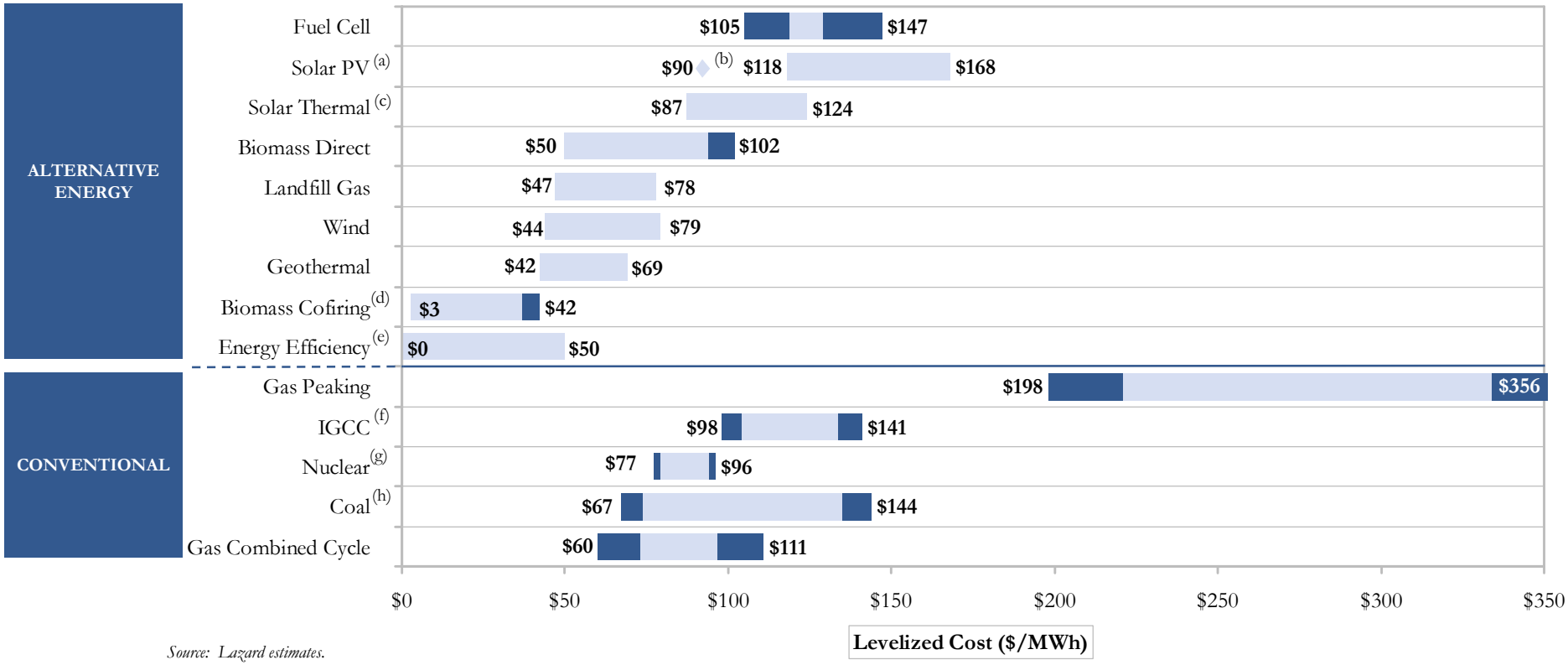
(f) High end incorporates 90% carbon capture and compression.

(g) Does not reflect potential economic impact of federal loan guarantees or other subsidies.

(h) Based on advanced supercritical pulverized coal. High end incorporates 90% carbon capture and compression.

Levelized Cost of Energy Comparison – Sensitivity to Fuel Prices

Variations in fuel prices can materially affect the levelized cost of energy for conventional generation technologies, but direct comparisons against "competing" Alternative Energy generation technologies must take into account issues such as dispatch characteristics (e.g., baseload and/or dispatchable intermediate load vs. peaking or intermittent technologies)



Source: Lazard estimates.

Note: Darkened areas in horizontal bars represent low end and high end levelized cost of energy corresponding with ±25% fuel price fluctuations.

(a) Low end based on total system cost per watt of $3.99 per First Solar investor presentation dated December 3, 2007. High end based on utility-scale crystalline facility.

(b) Represents First Solar's targeted implied levelized cost of energy in 2010, assuming a total system cost of $2.75 per watt. First Solar 2012 guidance for total system cost of $2.00 per watt would imply a levelized cost of energy of $75 per MWh.

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

(d) Represents retrofit cost of coal plant.

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

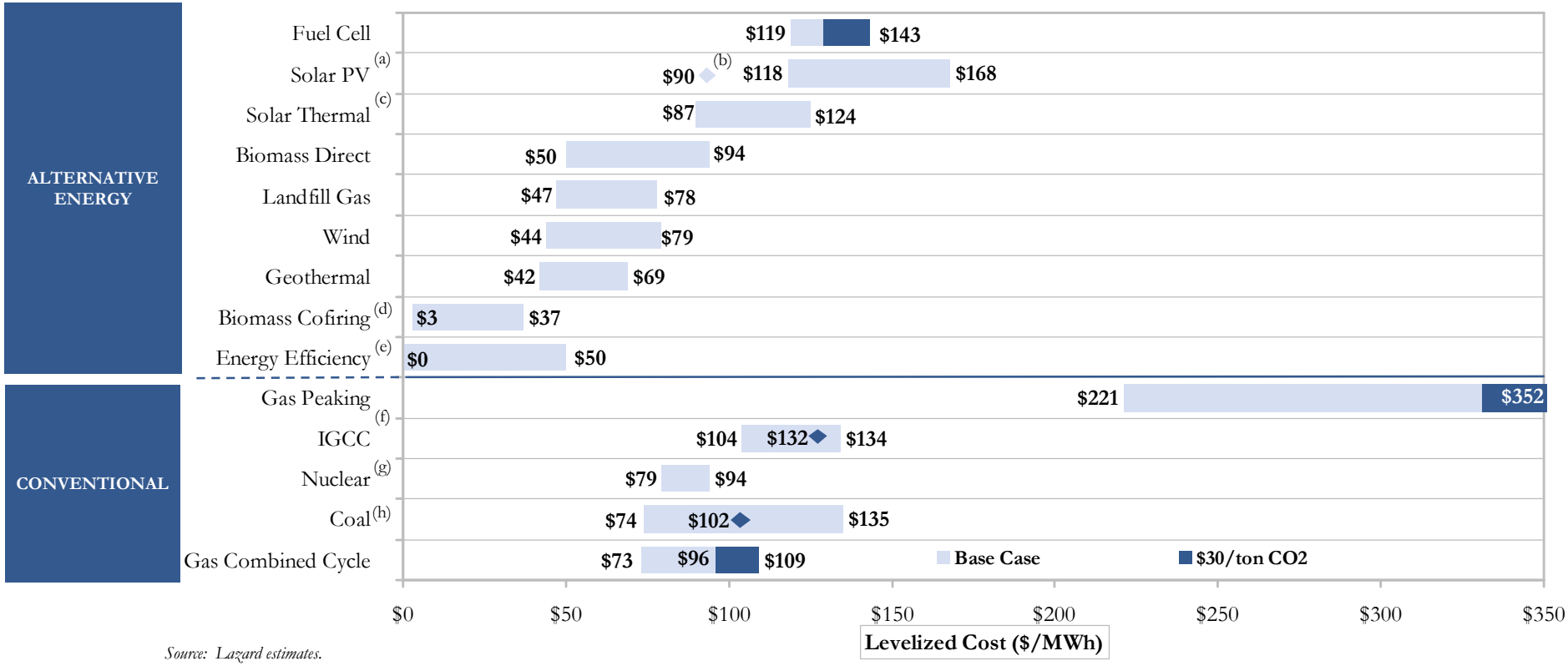
(f) High end incorporates 90% carbon capture and compression.

(g) Does not reflect potential economic impact of federal loan guarantees or other subsidies.

(h) Based on advanced supercritical pulverized coal. High end incorporates 90% carbon capture and compression.

Levelized Cost of Energy – Sensitivity to Carbon Emission Costs

Conventional generation technologies are subject to uncertainty regarding the potential for future carbon emission costs, which would not affect Alternative Energy generation technologies except positively through credit positions or otherwise (n.b., these potential positive benefits are not reflected below)



Source: Lazard estimates.

(a) Low end based on total system cost per watt of $3.99 per First Solar investor presentation dated December 3, 2007. High end based on utility-scale crystalline facility.

(b) Represents First Solar's targeted implied levelized cost of energy in 2010, assuming a total system cost of $2.75 per watt. First Solar 2012 guidance for total system cost of $2.00 per watt would imply a levelized cost of energy of $75 per MWh.

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

(d) Represents retrofit cost of coal plant.

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

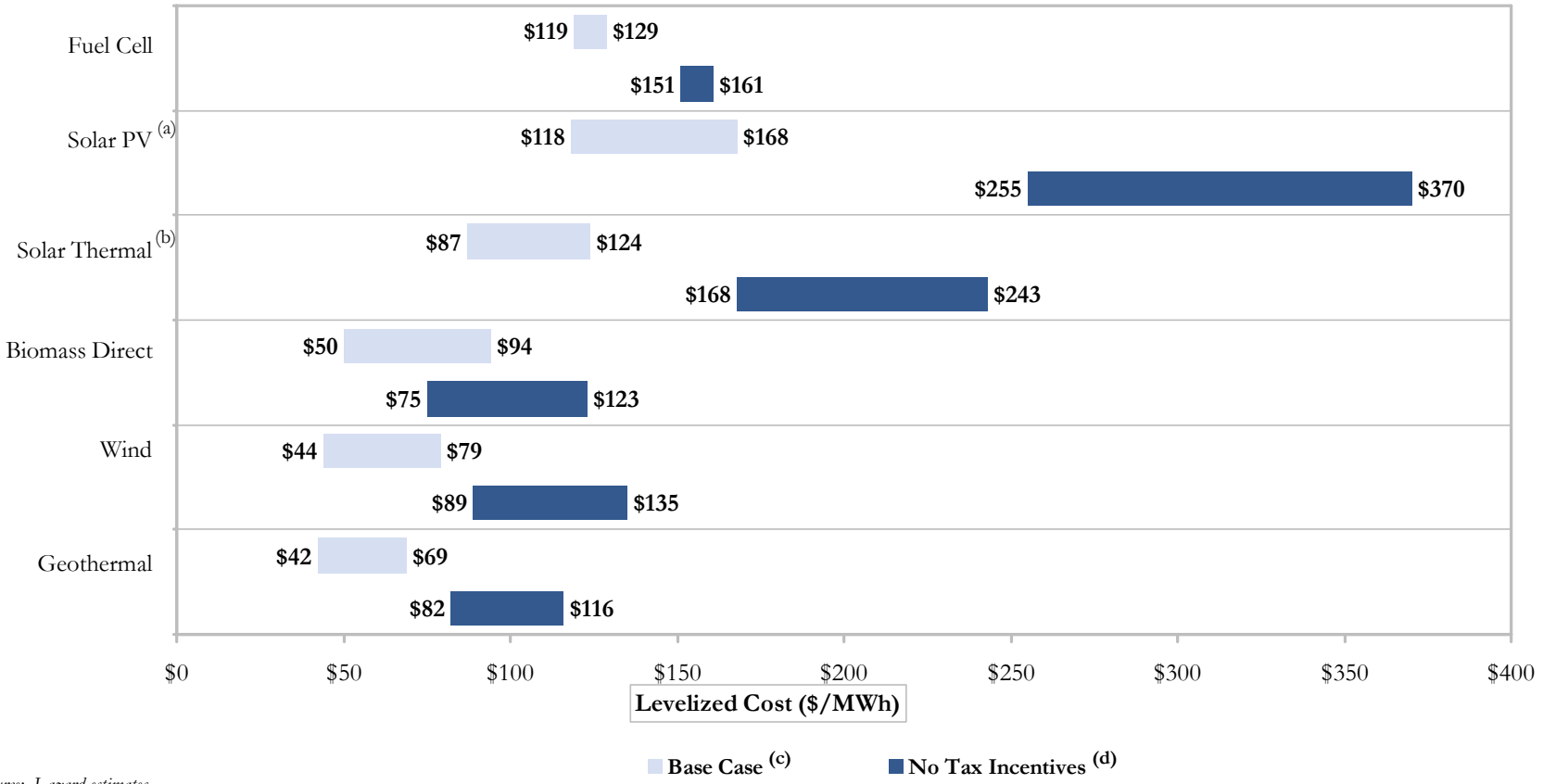
(f) High end of light horizontal bar incorporates 90% carbon capture and compression and no carbon emission cost. Diamond represents no carbon capture and compression, and a carbon emission cost of $30 per ton.

(g) Does not reflect potential economic impact of federal loan guarantees or other subsidies.

(h) Based on advanced supercritical pulverized coal. Diamond represents no carbon capture and compression, and a carbon emission cost of $30 per ton.

Levelized Cost of Energy – Sensitivity to U.S. Federal Tax Incentives

U.S. federal tax subsidies remain an important component of the economics of Alternative Energy generation technologies (and government incentives are important in all regions), notwithstanding high prevailing fossil fuel prices; future cost reductions in technologies such as fuel cells, solar PV and solar thermal have the potential to enable these technologies to approach "grid parity" without tax subsidies (albeit such observation does not take into account issues such as dispatch characteristics or other factors)



Source: Lazard estimates.

Note: Assumes 2008 dollars, 60% debt at 7% interest rate, 40% equity at 12% cost, 20-year economic life and 40% tax rate. Assumes coal price of $2.50 per MMBtu and natural gas price of $8.00 per MMBtu.

(a) Low end based on total system cost per watt of $3.99 per First Solar investor presentation dated December 3, 2007. High end based on utility-scale crystalline facility.

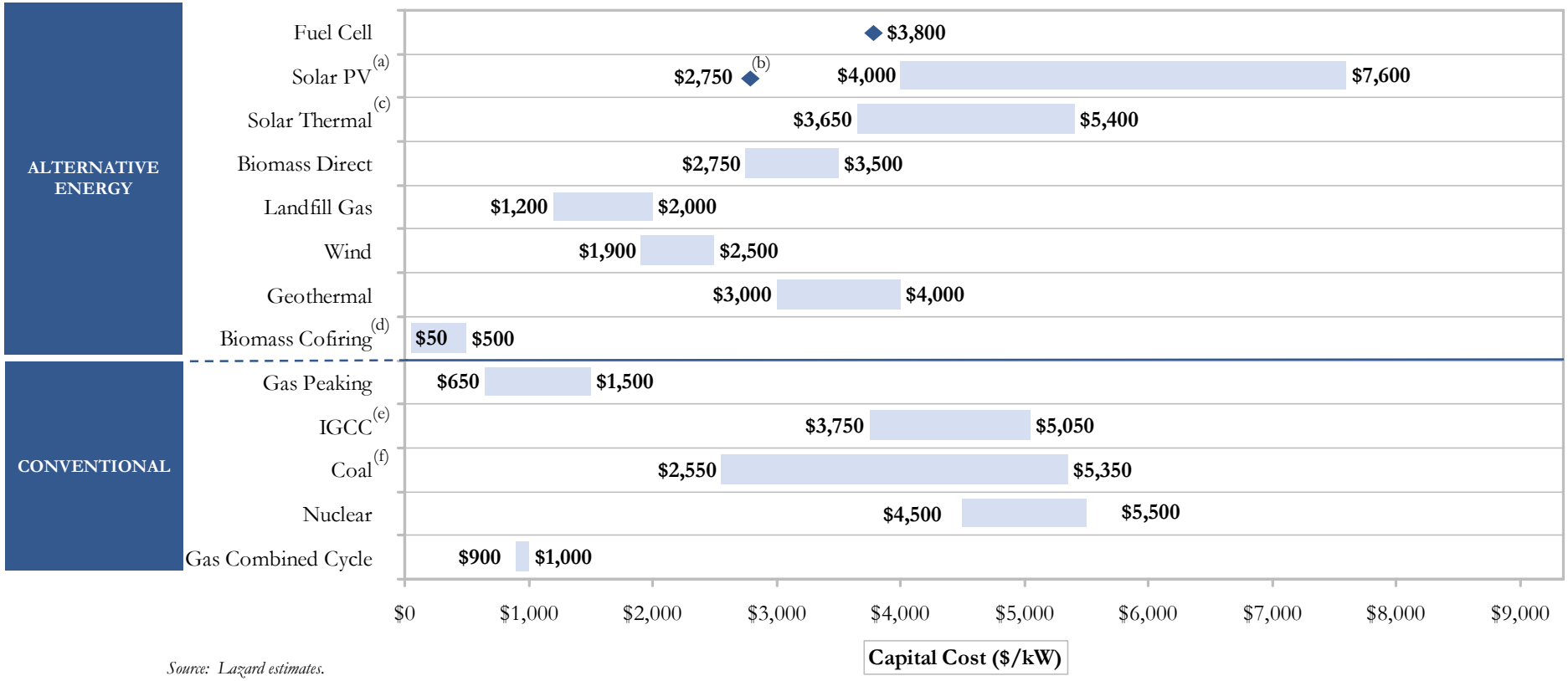
(b) Low end represents solar tower. High end represents solar trough.

(c) Reflects production tax credit, investment tax credit, and accelerated asset depreciation as applicable.

(d) Illustrates levelized cost of energy in the absence of U.S. federal tax incentives such as investment tax credits, production tax credits and assuming 20-year tax life.

Capital Cost Comparison

While capital costs for a number of Alternative Energy generation technologies (e.g., solar PV, solar thermal) are currently in excess of conventional generation technologies (e.g., gas, coal, nuclear), declining costs for many Alternative Energy generation technologies, coupled with rising construction and fuel costs for conventional generation technologies, are working to close formerly wide gaps in electricity costs. This assessment, however, does not take into account issues such as dispatch characteristics, capacity factors, fuel and other costs needed to compare generation technologies

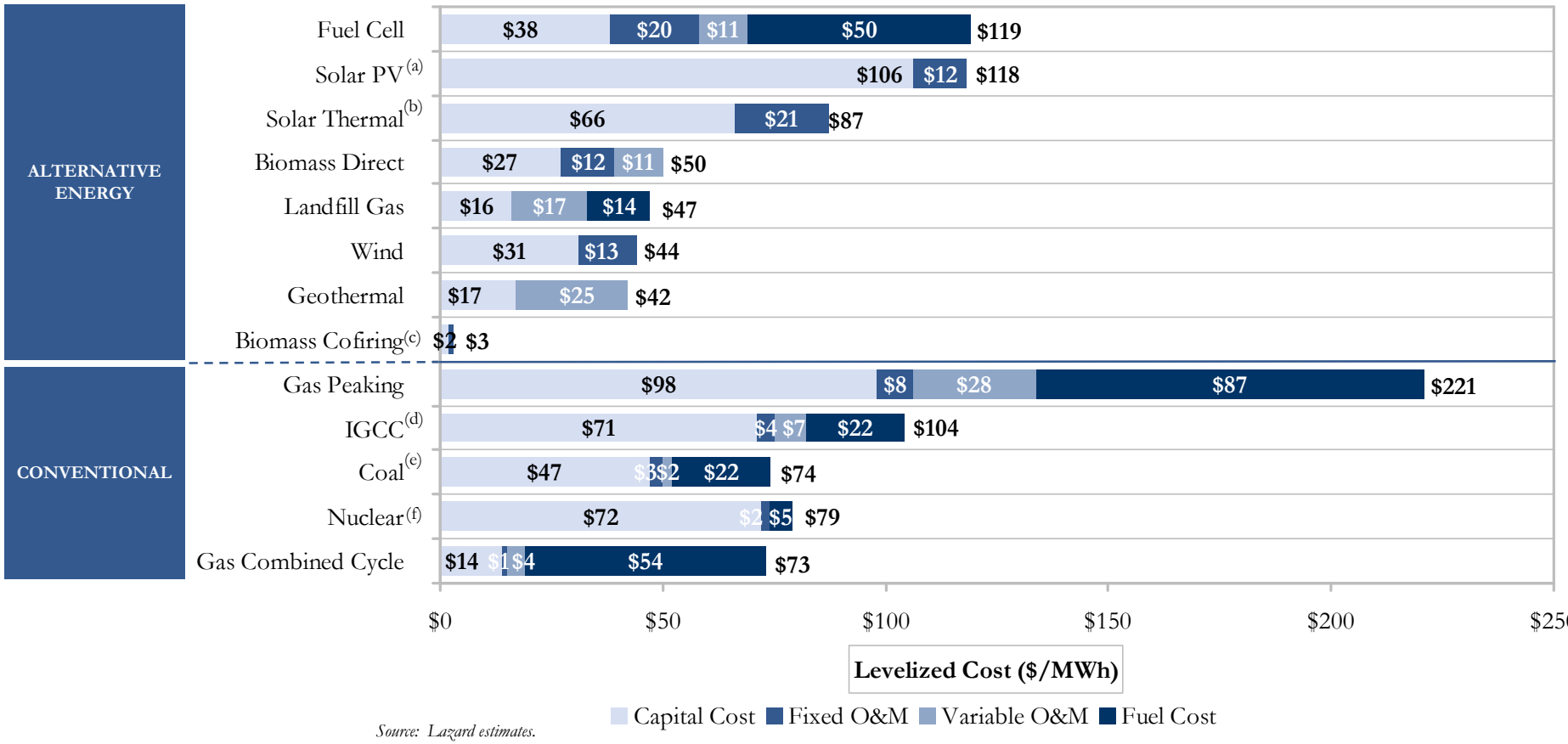


Source: Lazard estimates.

(a) Low end based on total system cost per watt of $3.99 per First Solar investor presentation dated December 3, 2007. High end based on utility-scale crystalline facility.
(b) Based on First Solar guidance of 2010 total system cost of $2.75 per watt; First Solar guidance for 2012 total system cost is $2.00 per watt.
(c) Low end represents solar trough. High end represents solar tower.
(d) Represents retrofit cost of coal plant.
(e) High end incorporates 90% carbon capture and compression.
(f) Based on advanced supercritical pulverized coal. High end incorporates 90% carbon capture and compression.

Levelized Cost of Energy Components – Low End

Certain Alternative Energy generation technologies are already cost-competitive with conventional generation technologies; a key factor regarding the long-term competitiveness of currently more expensive Alternative Energy technologies is the ability of technological development and increased production volumes to materially lower the capital costs of certain Alternative Energy technologies, and their levelized cost of energy, over time (e.g., as is anticipated with solar PV technologies)



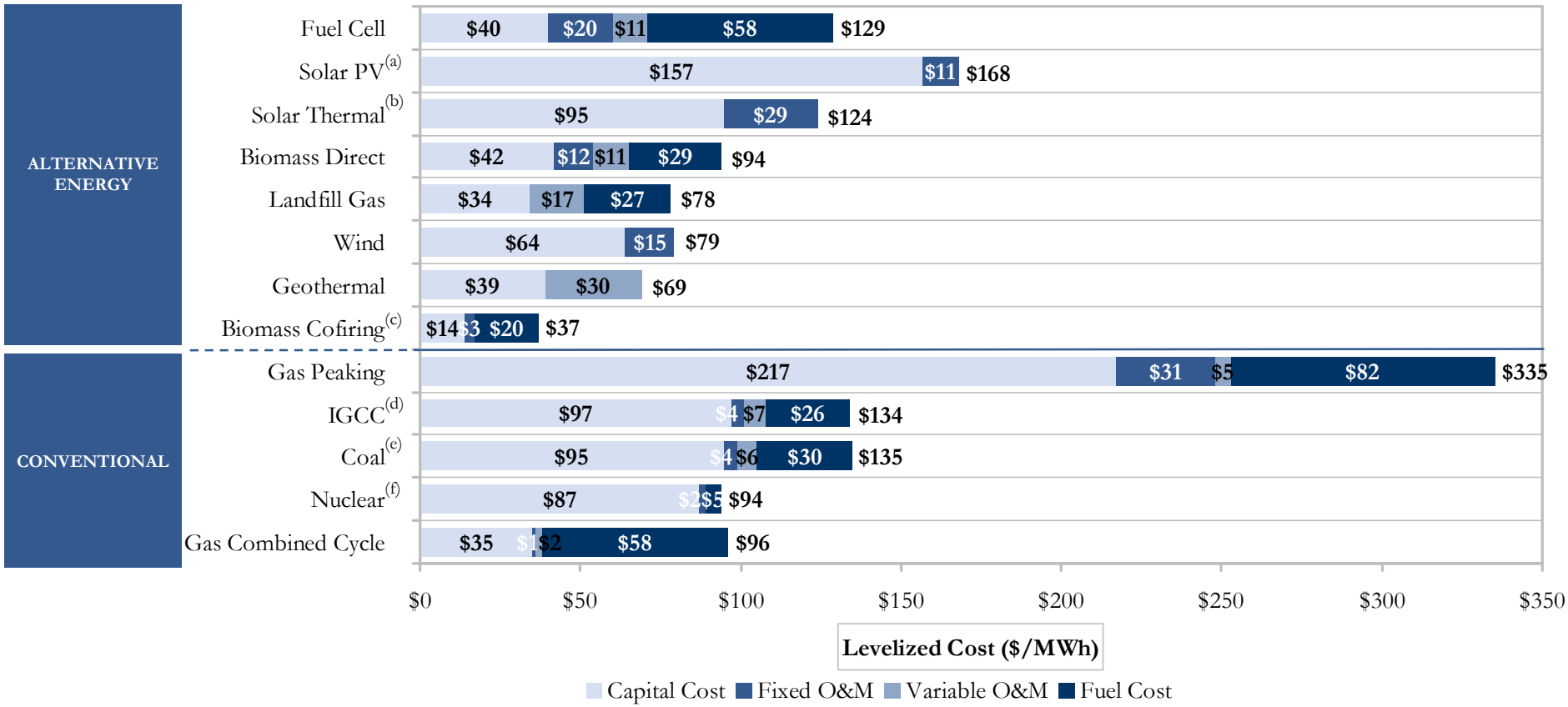
Source: Lazard estimates.

Note: Reflects production tax credit, investment tax credit, and accelerated asset depreciation as applicable. Assumes 2008 dollars, 60% debt at 7% interest rate, 40% equity at 12% cost, 20-year economic life, 40% tax rate, and 5-20 year tax life. Assumes coal price of $2.50 per MMBtu and natural gas price of $8.00 per MMBtu.

(a) Low end based on total system cost per watt of $3.99 per First Solar investor presentation dated December 3, 2007. High end based on utility-scale crystalline facility.
(b) Low end represents solar tower. High end represents solar trough.
(c) Represents retrofit cost of coal plant.
(d) Incorporates no carbon capture and compression.
(e) Based on advanced supercritical pulverized coal. Incorporates no carbon capture and compression.
(f) Does not reflect potential economic impact of federal loan guarantees or other subsidies.

Levelized Cost of Energy Components – High End

Certain Alternative Energy generation technologies are already cost-competitive with conventional generation technologies; a key factor regarding the long-term competitiveness of currently more expensive Alternative Energy technologies is the ability of technological development and increased production volumes to materially lower the capital costs of certain Alternative Energy technologies, and their levelized cost of energy, over time (e.g., as is anticipated with solar PV technologies)



Source: Lazard estimates.

Note: Reflects production tax credit, investment tax credit, and accelerated asset depreciation as applicable. Assumes 2008 dollars, 60% debt at 7% interest rate, 40% equity at 12% cost, 20-year economic life, 40% tax rate, and 5-20 year tax life. Assumes coal price of $2.50 per MMBtu and natural gas price of $8.00 per MMBtu.

(a) Low end based on total system cost per watt of $3.99 per First Solar investor presentation dated December 3, 2007. High end based on utility-scale crystalline facility.
(b) Low end represents solar tower. High end represents solar trough.
(c) Represents retrofit cost of coal plant.
(d) Incorporates 90% carbon capture and compression.
(e) Based on advanced supercritical pulverized coal. Incorporates 90% carbon capture and compression.
(f) Does not reflect potential economic impact of federal loan guarantees or other subsidies.

Energy Resources: Matrix of Applications

While the levelized cost of energy for Alternative Energy generation technologies is becoming increasingly competitive with conventional generation technologies, direct comparisons must take into account issues such as location (e.g., central station vs. customer-located), dispatch characteristics (e.g., baseload and/or dispatchable intermediate load vs. peaking or intermittent technologies), and contingencies such as carbon pricing

					LOCATION			DISPATCH			
		LEVELIZED COST OF ENERGY	CARBON NEUTRAL/ REC POTENTIAL	STATE OF TECHNOLOGY	CUSTOMER LOCATED	CENTRAL STATION	GEOGRAPHY	INTERMITTENT	PEAKING	LOAD-FOLLOWING	BASE-LOAD
ALTERNATIVE ENERGY	FUEL CELL	$119-129	? (a)	Emerging/ Commercial	✓		Universal				✓
	SOLAR PV	$118-168	✓	Newly Commercial	✓	✓	Universal	✓	✓		
	SOLAR THERMAL	$87-124	✓	Emerging		✓	Southwest	✓	✓	✓	
	BIOMASS DIRECT	$50-94	✓	Mature		✓	Universal			✓	✓
	WIND	$44-79	✓	Mature		✓	Varies	✓			
	GEOTHERMAL	$42-69	✓	Commercial/ Evolving		✓	Varies				✓
	LANDFILL GAS	$47-78	✓	Mature		✓	Varies				✓
CONVENTIONAL	GAS PEAKING	$221-334	✗	Mature	✓	✓	Universal		✓		
	IGCC	$104-134	✗ (b)	Emerging(c)		✓	Co-located or rural				✓
	GAS COMBINED CYCLE	$73-96	✗	Mature	✓	✓	Universal			✓	✓
	COAL	$74-135	✗ (b)	Mature(c)		✓	Co-located or rural				✓
	NUCLEAR	$79-94	✓	Mature/ Emerging		✓	Co-located or rural				✓

Source: Lazard estimates.

(a) Qualification for RPS requirements varies by location.

(b) Could be considered carbon neutral technology, assuming carbon capture and compression.

(c) Carbon capture and compression technologies are in emerging stage.

Levelized Cost of Energy – Key Assumptions

		Solar PV		Solar Thermal	
	Units	Thin Film Utility	Crystalline Utility[(b)]	Trough-No Storage	Tower[(c)]
Net Facility Output	MW	10	10	200	100
EPC Cost	$/kW	$3,990	$7,575 - $6,325	$3,625 - $3,850	$3,850 - $5,400
Owner's Cost	$/kW	included	included	included	included
Total Capital Cost[(a)]	$/kW	$3,990	$7,575 - $6,325	$3,625 - $3,850	$3,850 - $5,400
Fixed O&M	$/kW-yr	$25.00	$25.00	$66.00	$70.00
Variable O&M	$/MWh	—	— —	— —	— —
Heat Rate	Btu/kWh	—	— —	— —	— —
Capacity Factor	%	23%	31% - 25%	26% - 29%	35% - 38%
Fuel Price	$/MMBtu	—	— —	— —	— —
Construction Time	Months	12	12	24	24
Facility Life	Years	20	20	20	20
CO_2 Equivalent Emissions	Tons/MWh	—	— —	— —	— —
Investment Tax Credit	%	30%	30%	30%	30%
Production Tax Credit	$/MWh	—	— —	— —	— —
Levelized Cost of Energy	$/MWh	$118	$159 - $168	$107 - $124	$87 - $121

Source: Lazard estimates.

Note: Assumes 2.5% annual escalation for production tax credit, O&M costs and fuel prices, 40% tax rate, financing with 60% debt at 7% interest rate and 40% equity at 12% cost.

(a) Includes capitalized interest costs during construction.

(b) Left side represents tracking crystalline; right side represents fixed crystalline.

(c) Represents a range of solar thermal tower estimates.

Levelized Cost of Energy – Key Assumptions (cont'd)

	Units	IGCC[b]	Gas Combined Cycle	Gas Peaking[c]	Coal[d]	Nuclear[e]	Fuel Cell[f]
Net Facility Output	MW	580	550	150	95	1,140	2.3
EPC Cost	$/kW	$2,500 - $3,375	$700 - $775	$500 - $1,150	$1,825 - $3,825	$3,150 - $4,150	$3,000
Owner's Cost	$/kW	$1,250 - $1,700	$200 - $225	$150 - $350	$725 - $1,525	$1,350 - $1,350	$800
Total Capital Cost[a]	$/kW	$3,750 - $5,075	$900 - $1,000	$650 - $1,500	$2,550 - $5,350	$4,500 - $5,500	$3,800
Fixed O&M	$/kW-yr	$26.40 - $28.20	$5.50 - $6.20	$6.80 - $27.00	$20.40 - $31.60	$12.80	$169.00
Variable O&M	$/MWh	$6.80	$2.00 - $3.50	$28.00 - $4.70	$2.00 - $5.60	$11.00	$11.00
Heat Rate	Btu/kWh	8,800 - 10,520	6,800 - 7,220	10,880 - 10,200	8,870 - 11,900	10,450	6,240 - 7,260
Capacity Factor	%	80%	85% - 40%	10%	85%	90%	95%
Fuel Price	$/MMBtu	$2.50	$8.00	$8.00	$2.50	$0.50	$8.00
Construction Time	Months	57 - 63	36	25	60 - 66	69	3
Facility Life	Years	20	20	20	20	20	20
CO_2 Equivalent Emissions	Tons/MWh	0.93 - 0.11	0.40 - 0.42	0.40 - 0.42	0.94 - 0.13	— —	0.36 - 0.42
Investment Tax Credit	%	— —	— —	— —	— —	— —	30%
Production Tax Credit	$/MWh	— —	— —	— —	— —	— —	—
Levelized Cost of Energy	$/MWh	$104 - $134	$73 - $96	$221 - $334	$74 - $135	$79 - $94	$119 - $129

Source: Lazard estimates.

Note: Assumes 2.5% annual escalation for production tax credit, O&M costs and fuel prices, 40% tax rate, financing with 60% debt at 7% interest rate and 40% equity at 12% cost.

(a) Includes capitalized interest costs during construction.

(b) High end incorporates 90% carbon capture and compression.

(c) Low end represents assumptions regarding GE 7FA. High end represents assumptions regarding GE LM6000PC.

(d) Based on advanced supercritical pulverized coal. High end incorporates 90% carbon capture and compression.

(e) Does not reflect potential economic impact of federal loan guarantees or other subsidies.

(f) Low end incorporates illustrative economic and efficiency benefits of combined heat and power ("CHP") applications.

Levelized Cost of Energy – Key Assumptions (cont'd)

	Units	Biomass Direct	Wind	Geothermal	Landfill Gas	Biomass Cofiring[b]
Net Facility Output	MW	35	100	30	5	2% - 20%[c]
EPC Cost	$/kW	$2,750 - $3,500	$1,900 - $2,500	$3,000 - $4,000	$1,200 - $2,000	$50 - $500
Owner's Cost	$/kW	included	included	included	included	included
Total Capital Cost[a]	$/kW	$2,750 - $3,500	$1,900 - $2,500	$3,000 - $4,000	$1,200 - $2,000	$50 - $500
Fixed O&M	$/kW-yr	$83.00	$40.00[d]	— —	— —	$10.00 - $20.00
Variable O&M	$/MWh	$11.00	— —	$25.00 - $30.00	$17.00	— —
Heat Rate	Btu/kWh	14,500	— —	— —	13,500	10,000
Capacity Factor	%	80%	36% - 30%	80% - 70%	80%	80%
Fuel Price	$/MMBtu	$0.00 - $2.00	— —	— —	$1.00 - $2.00	$0.00 - $2.00
Construction Time	Months	36	12	36	12	12
Facility Life	Years	20	20	20	20	20
CO_2 Equivalent Emissions	Tons/MWh	— —	— —	— —	— —	— —
Investment Tax Credit	%	— —	— —	— —	— —	— —
Production Tax Credit	$/MWh	$10	$20	$20	$10	— —
Levelized Cost of Energy	$/MWh	$50 - $94	$44 - $79	$42 - $69	$47 - $78	$3 - $37

Source: Lazard estimates.

Note: Assumes 2.5% annual escalation for production tax credit, O&M costs and fuel prices, 40% tax rate, financing with 60% debt at 7% interest rate and 40% equity at 12% cost.

(a) Includes capitalized interest costs during construction.

(b) Represents retrofit cost of coal plant.

(c) Additional output to a coal facility.

(d) Lazard has received estimates for this value as high as $50/kW-year, which would have the effect of raising the implied levelized cost of energy to $47-$83/MWh.

Summary Considerations

Lazard has conducted this study comparing the levelized cost of energy for various conventional and Alternative Energy generation technologies in order to understand which Alternative Energy generation technologies may be cost-competitive with conventional generation technologies, either now or in the future, and under various operating assumptions, as well as to understand which technologies are best suited for various applications based on locational requirements, dispatch characteristics and other factors. We find that Alternative Energy technologies are complementary to conventional generation technologies, and believe that their use will be increasingly prevalent for a variety of reasons, including government subsidies, RPS requirements, and continuously improving economics as underlying technologies improve and production volumes increase.

In this study, Lazard's approach was to determine the levelized cost of energy, on a $/MWh basis, that would provide an after-tax IRR to equity holders equal to an assumed cost of equity capital. Certain assumptions (e.g., required debt and equity returns, capital structure, and economic life) were identical for all technologies, in order to isolate the effects of key differentiated inputs such as investment costs, capacity factors, operating costs, fuel costs (where relevant) and U.S. federal tax incentives on the levelized cost of energy. These inputs were developed with a leading consulting and engineering firm to the Power & Energy Industry, augmented with Lazard's commercial knowledge where relevant.

Lazard has not manipulated capital costs or capital structure for various technologies, as the goal of the study was to compare the current state of various generation technologies, rather than the benefits of financial engineering. The results contained in this study would be altered by different assumptions regarding capital structure (e.g., increased use of leverage) or capital costs (e.g., a willingness to accept lower returns than those assumed herein).

Key sensitivities examined included fuel costs and illustrative carbon emission costs. Other factors would also have a potentially significant effect on the results contained herein, but have not been examined in the scope of this current analysis. These additional factors, among others, could include scale benefits or detriments, the value of Renewable Energy Credits ("RECs") or carbon emissions offsets, the impact of transmission costs, and the economic life of the various assets examined.