

Private Equity Funding of Advanced Biofuels

A European and North American Outlook



Thursday 22 January 2009



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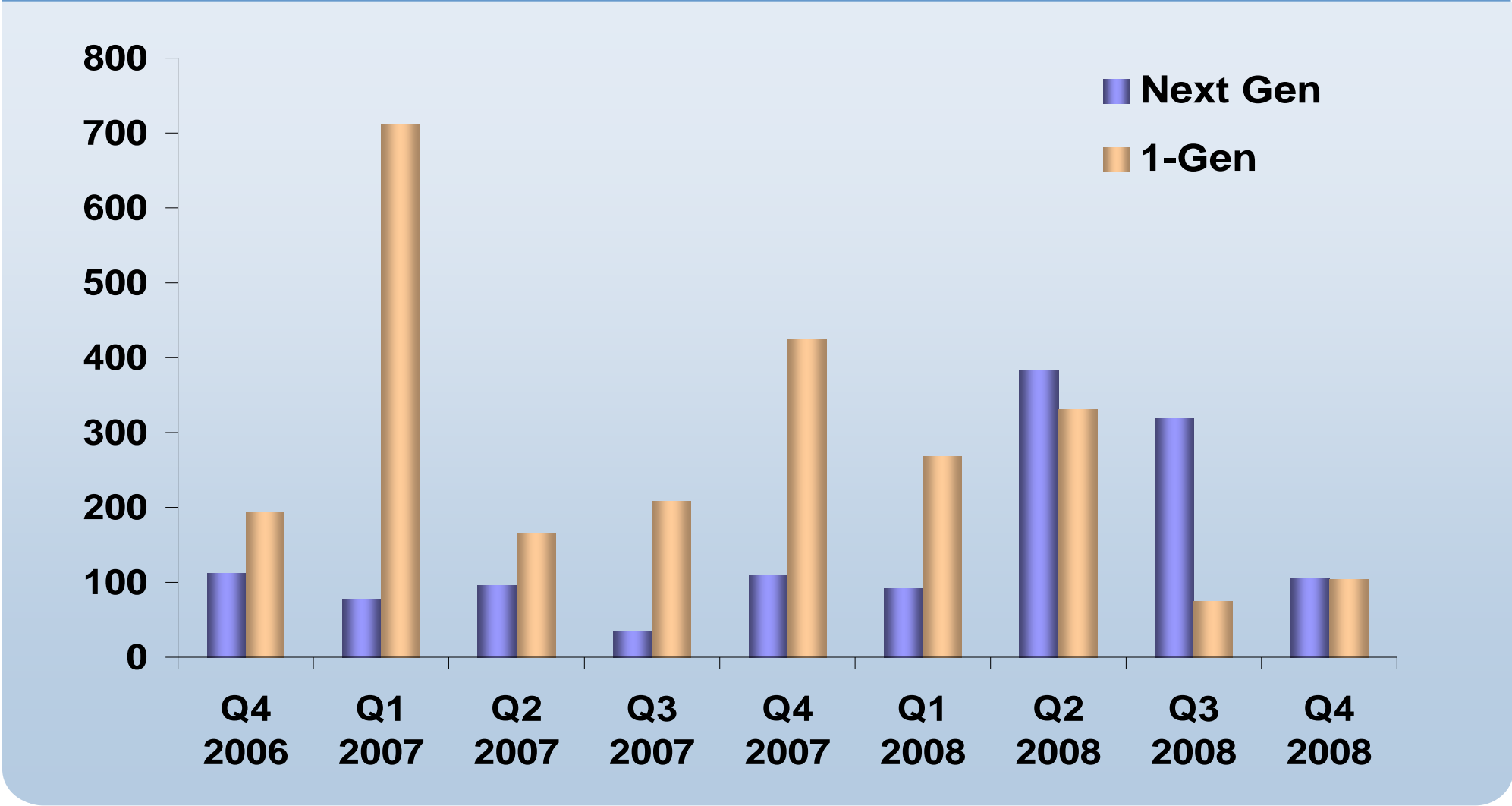
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Agenda

- Investment trends
- Objectives and investment opportunities
- Recent deals

Increasing percentage VC/PE investment directed at next generation

\$m VC/PE investment



Notes: 1-Gen abbreviates first generation

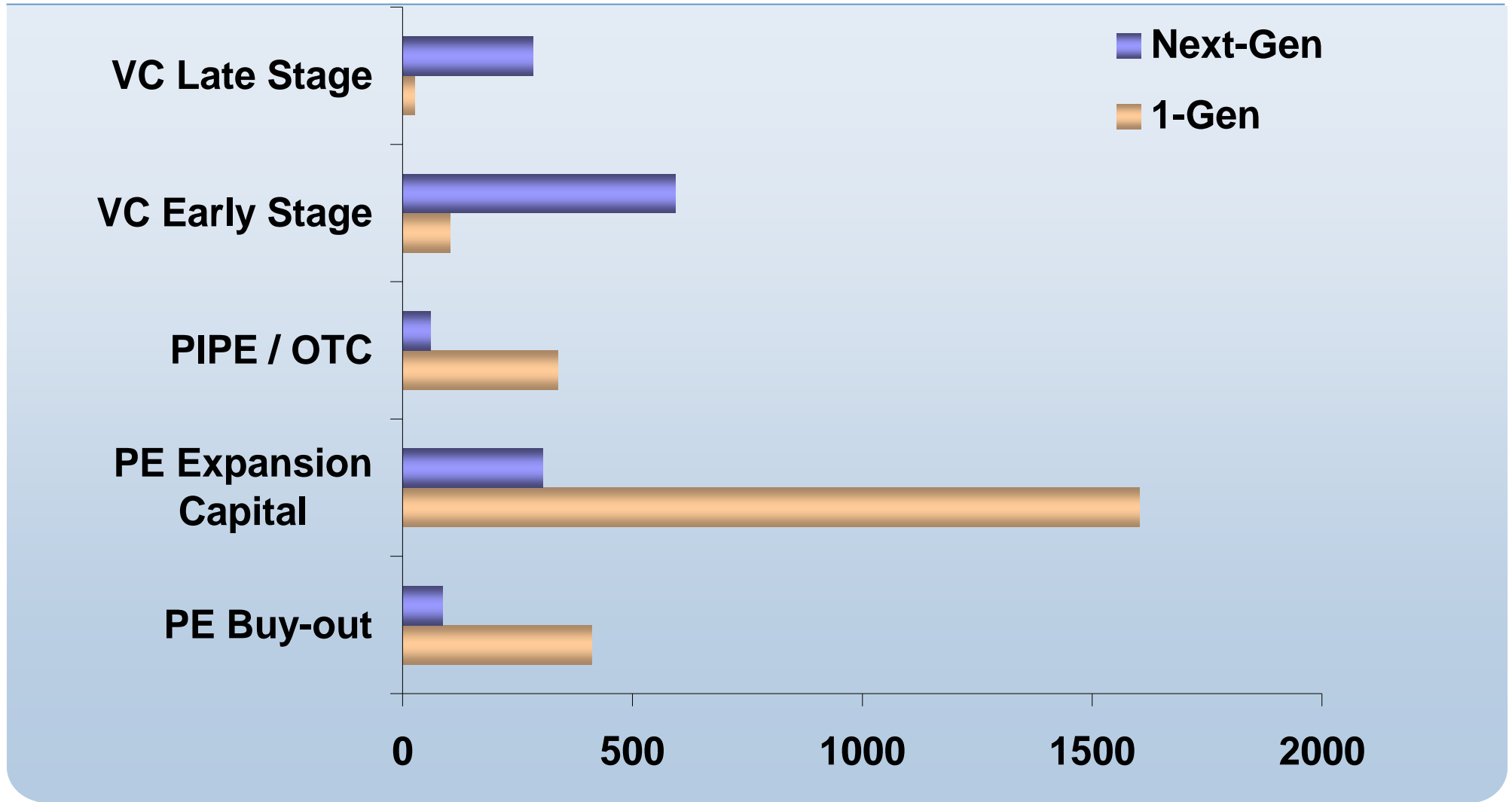
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Source: New Energy Finance, 2008



1st generation targets expansion; next generation aimed at early stage

VC/PE biofuel investment by deal type, Q4 2006 to Q4 2008



Notes: 1-Gen abbreviates first generation

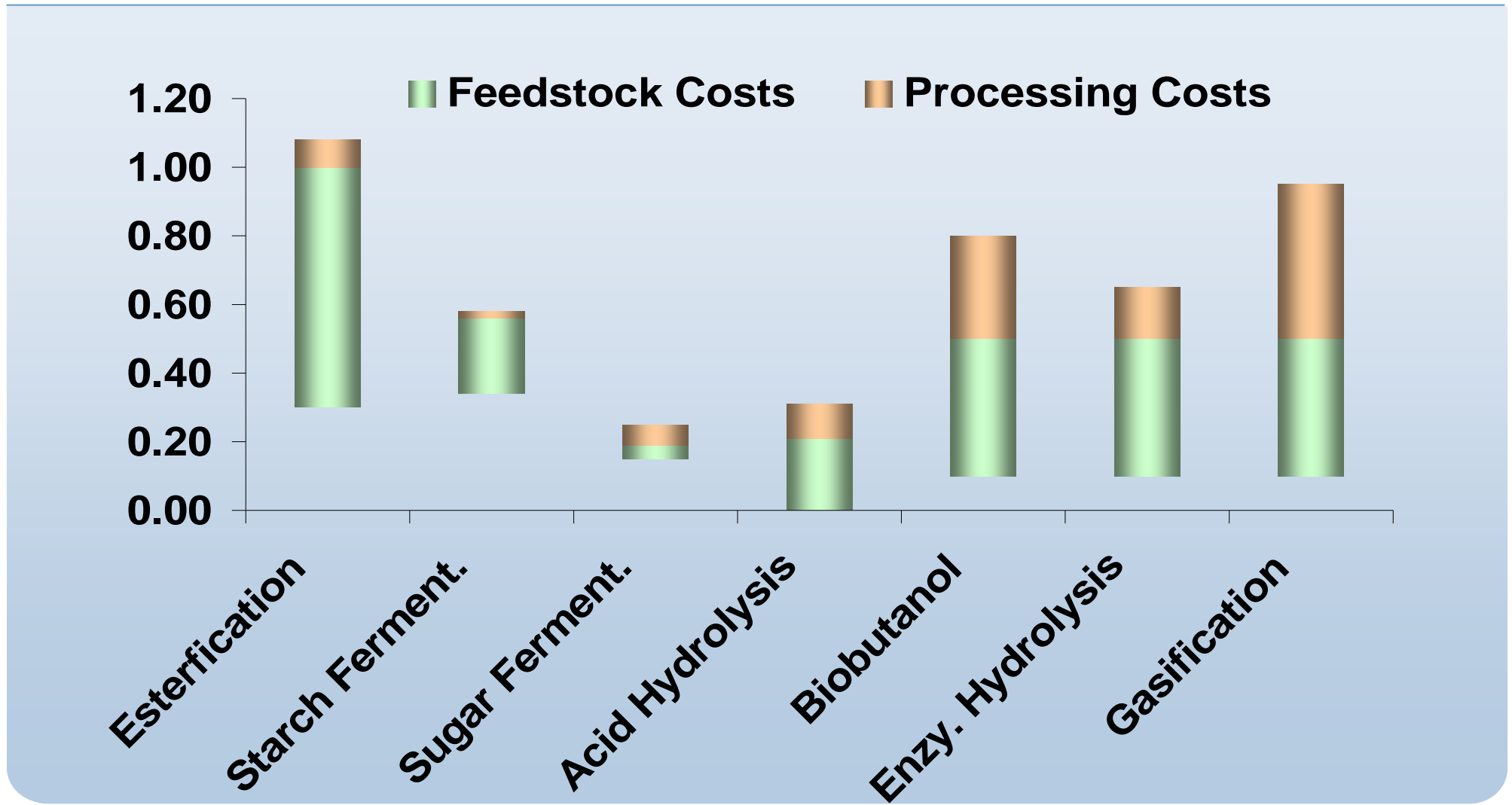
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Wide range of next generation biofuel operating costs

November 2008: \$ per litre

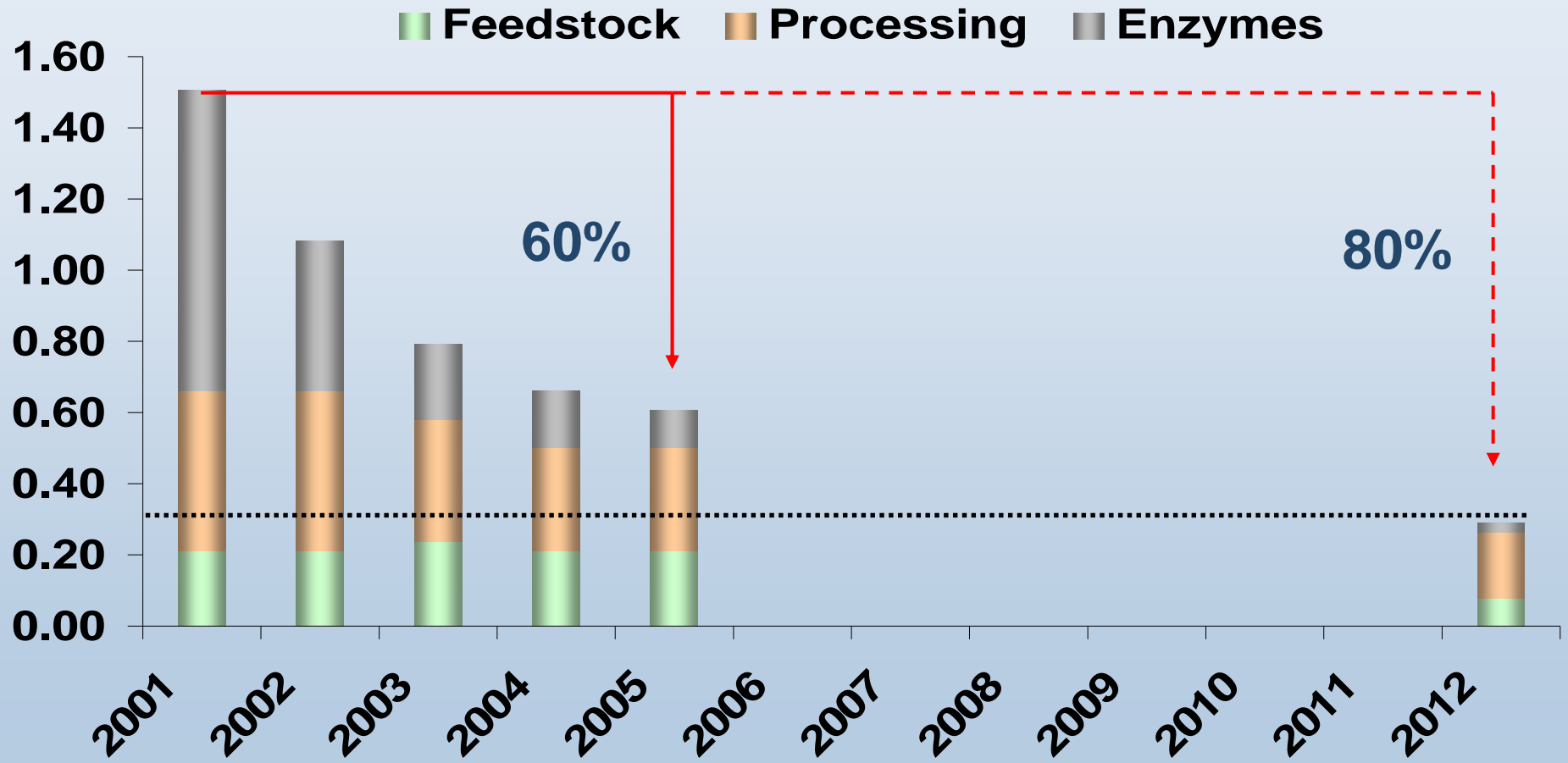


Notes: Esterification, starch fermentation and sugar fermentation are proven commercial technologies. However, the acid hydrolysis, biobutanol, enzymatic hydrolysis and gasification processing costs are projections from pilot-scale.

Sources: New Energy Finance (v9.01), Hylander, BlueFire Ethanol, NREL and Soloman

Industry players targeting substantial cost reductions

NREL enzymatic hydrolysis operating costs: \$ per litre



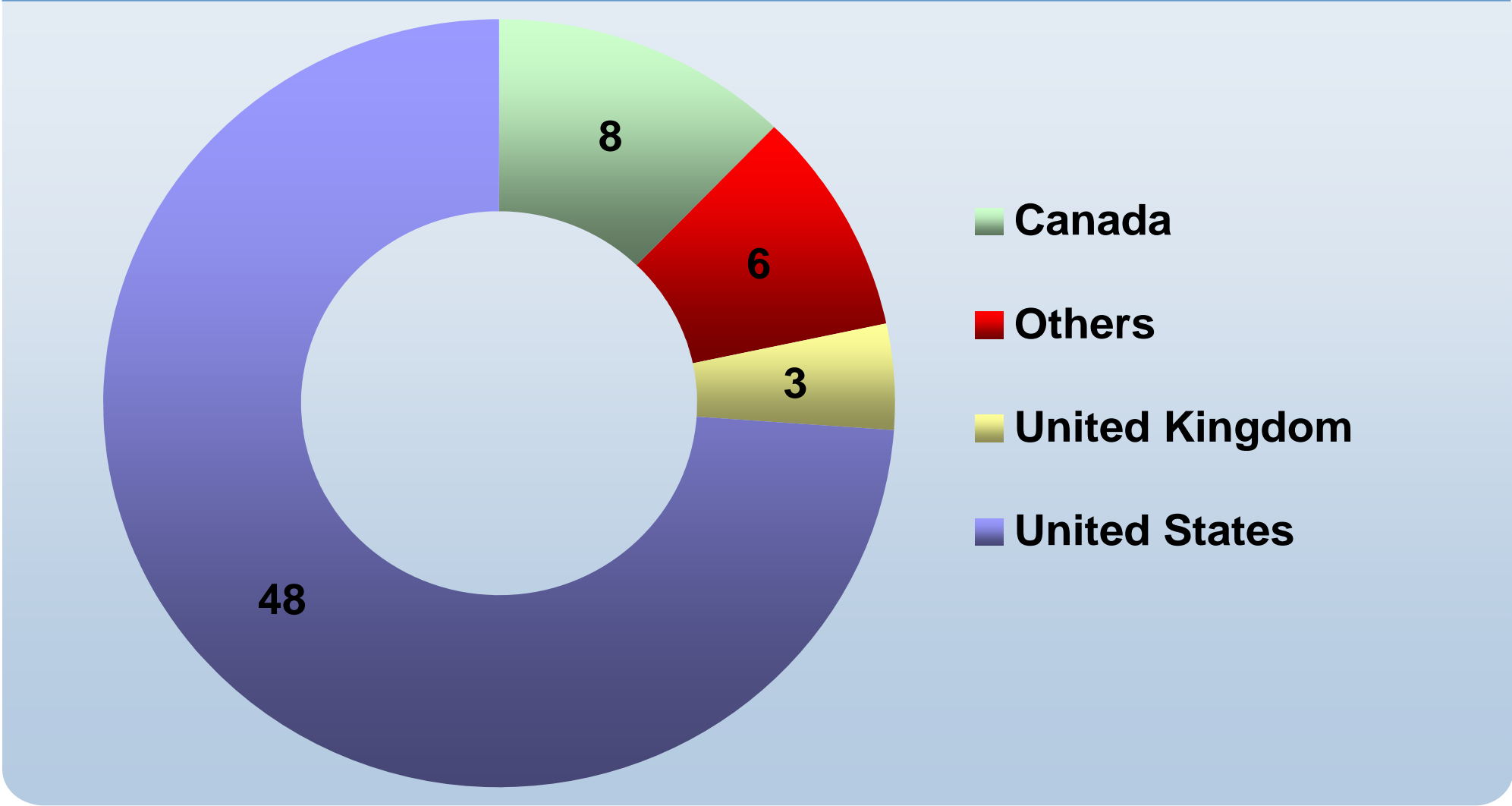
Notes: NREL's operating costs essentially represent only the enzymatic hydrolysis technology

Sources: New Energy Finance and NREL, 2007

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Next generation investment focused on North America

Number of VC/PE deals, Q4 2006 to Q4 2008

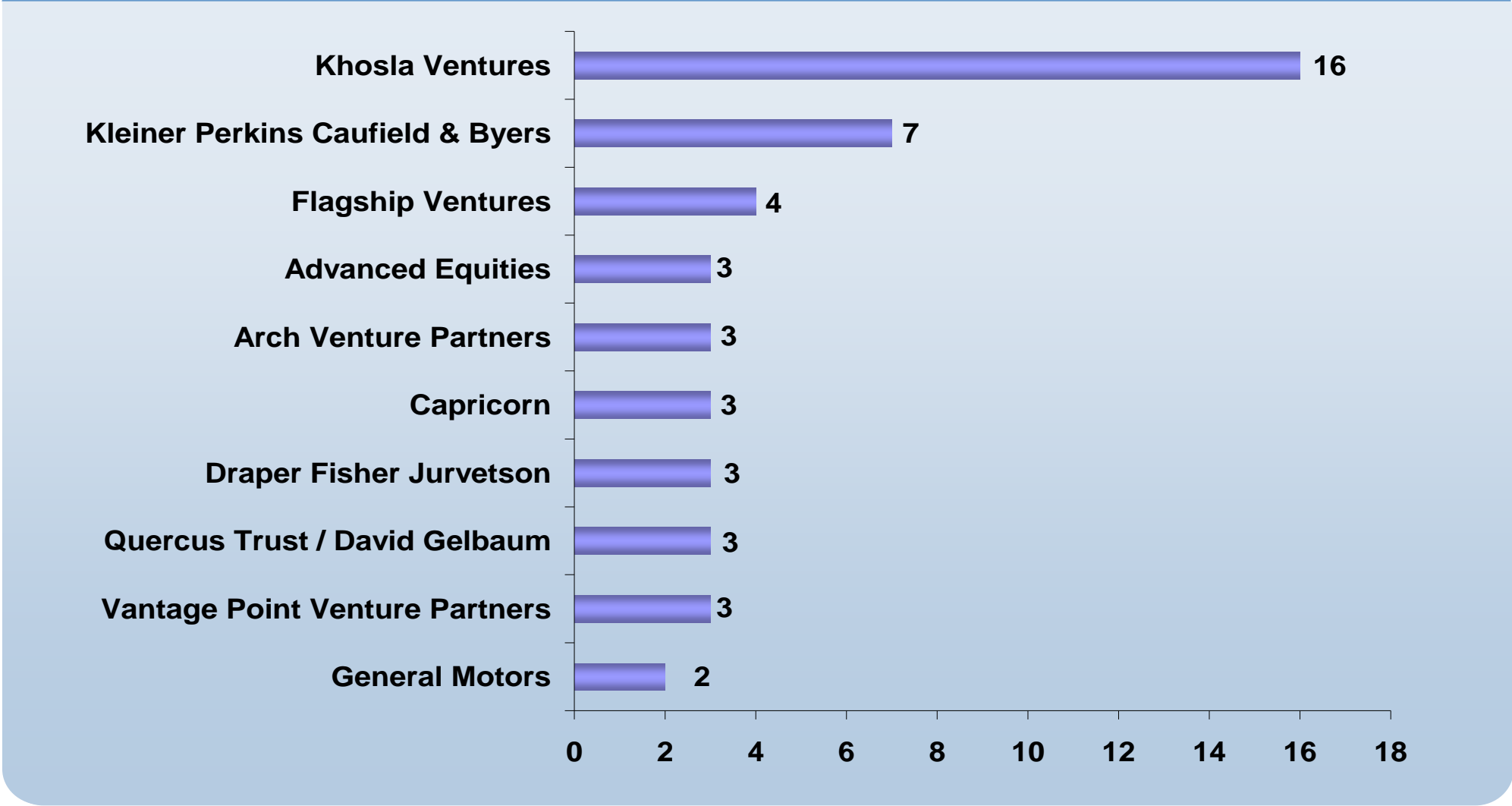


Source: New Energy Finance, 2008



“Significant” investors targeting next generation biofuel opportunities

Q4 2006 to Q3 2008: number of deals



Source: New Energy Finance, 2008



In summary

- ✍ Increasing % VC/PE investment directed at next generation biofuels
- ✍ 1st generation targets expansion; next generation aimed at early stage
- ✍ Wide range of next generation biofuel operating costs
- ✍ Industry players targeting substantial cost reductions
- ✍ VC/PE investment focused on North America
- ✍ Significant investors targeting next generation biofuel opportunities

- ✍ New Energy Finance monitors how & who moving to demo. scale
- ✍ Examining where most value will come from biomass

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