

BIO International Convention
Washington DC, June 29, 2010

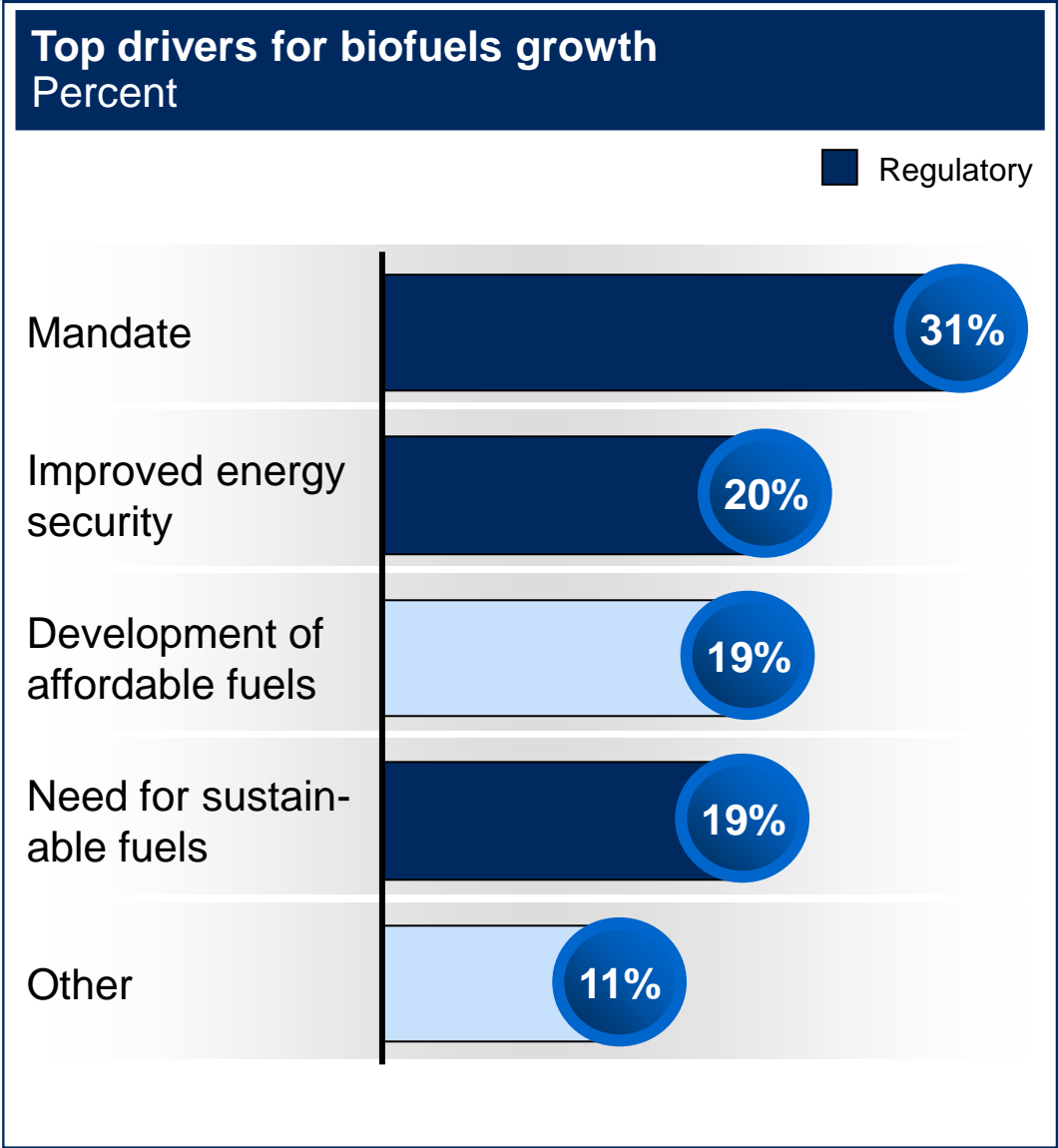
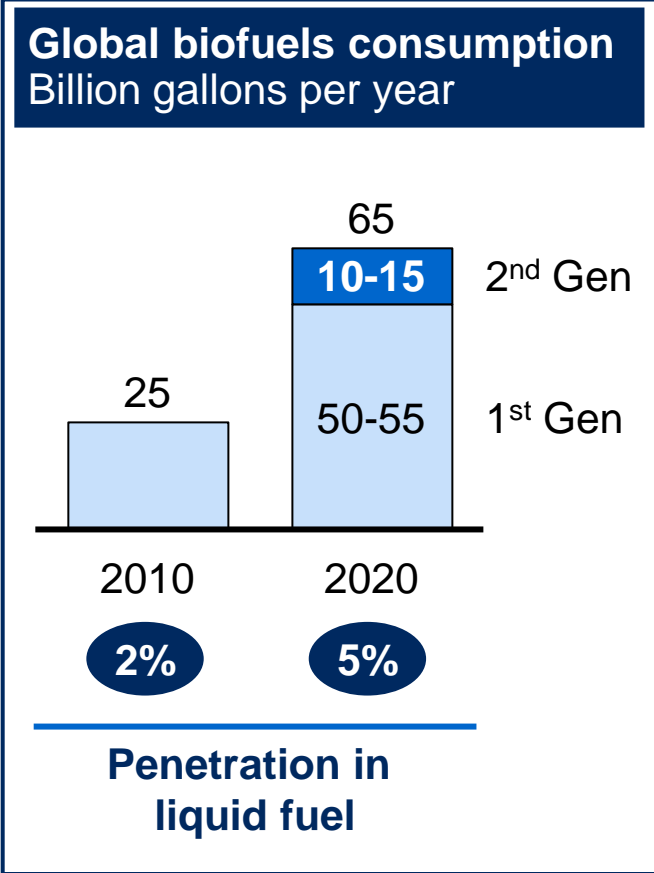
Sustainable Biofuels Growth: Hurdles and Outcomes

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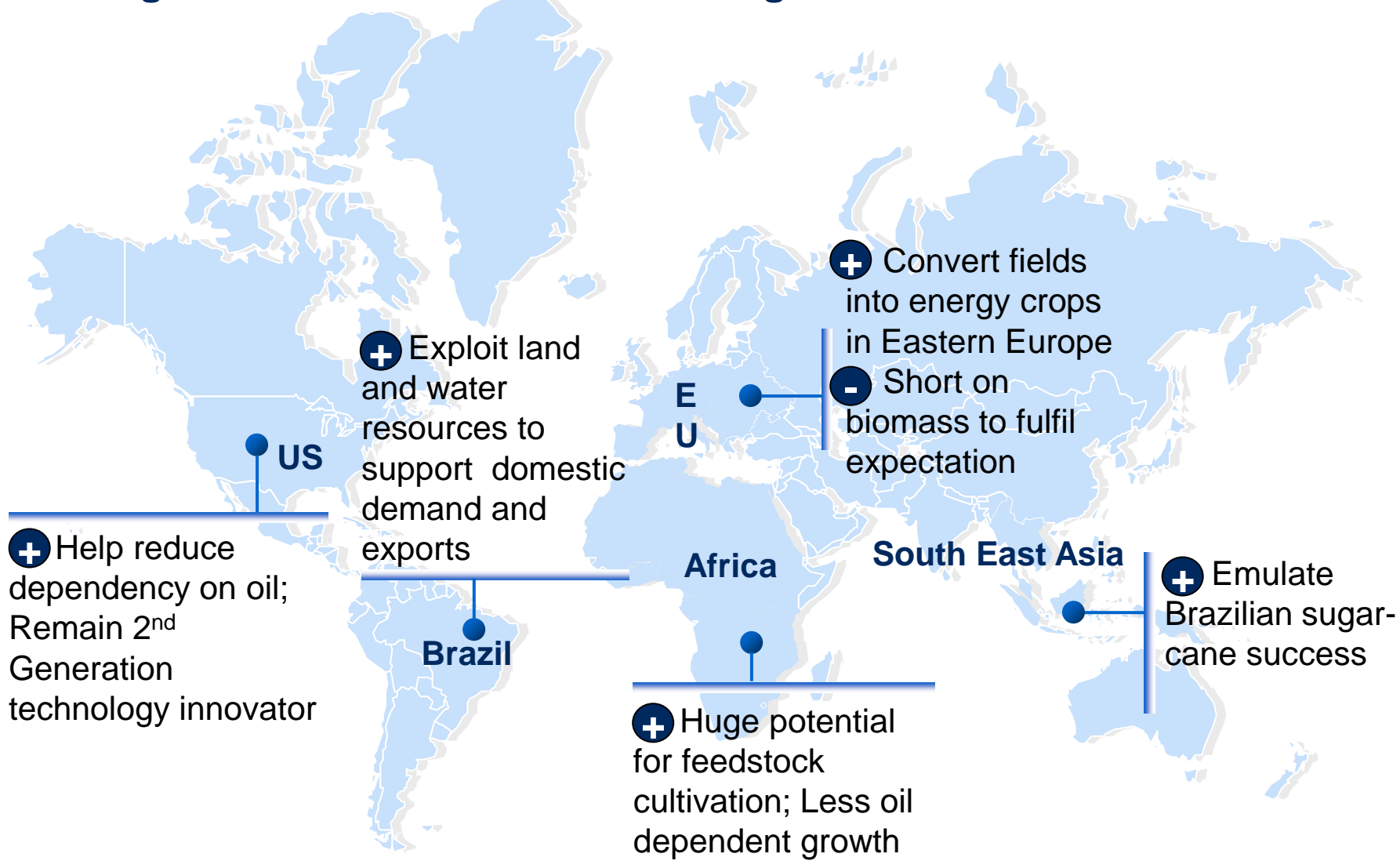
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Biofuels consumption is expected to more than double propelled by regulatory support



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An expanding global biofuels market will create distinct opportunities and challenges for different countries and regions



Growth will not happen if industry wide hurdles are not overcome



Broader feedstock mobilization



Steady-state economics reached



Blend wall overcome



Sustainability standards set



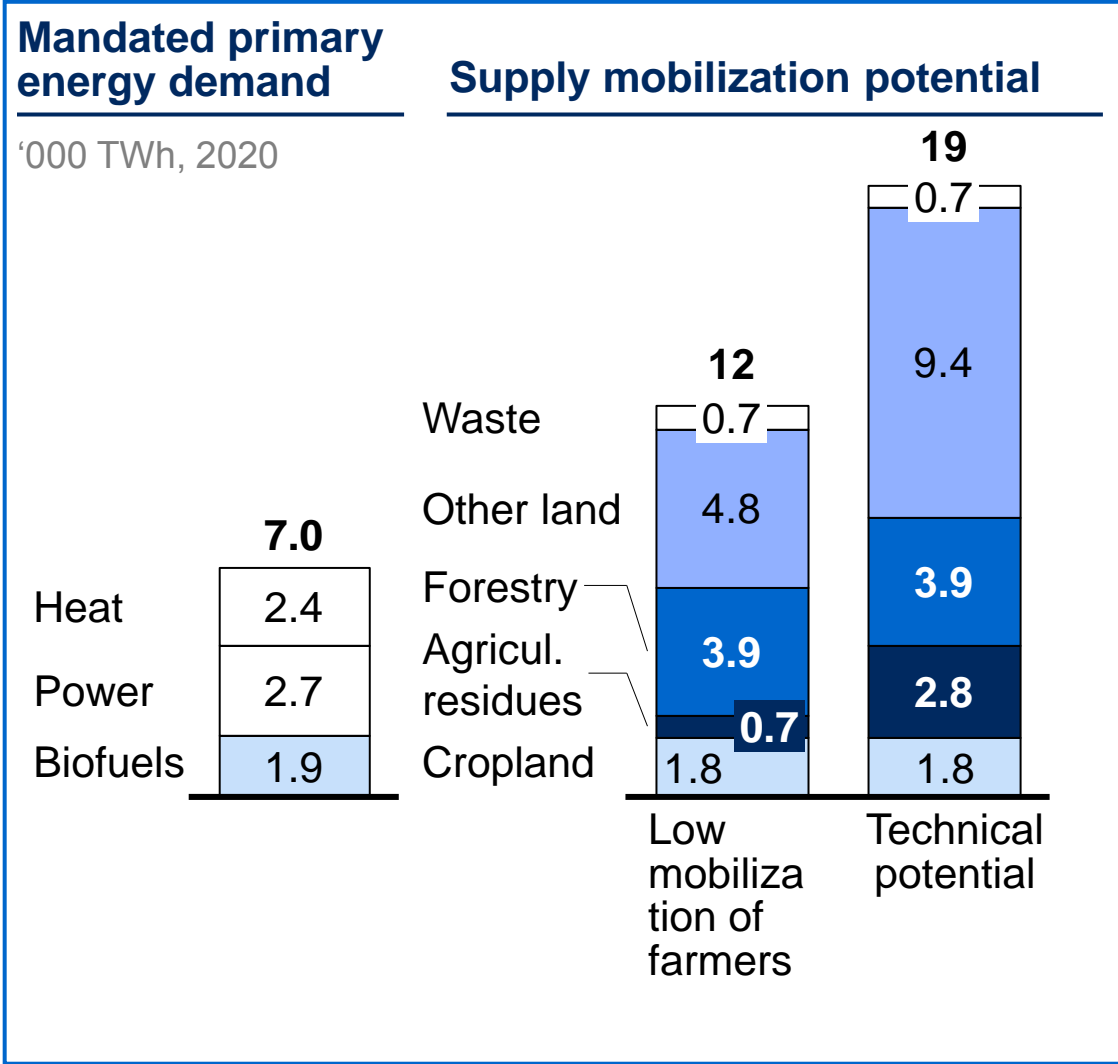
Investor confidence restored

**68
%**

Industry would benefit from more coordination

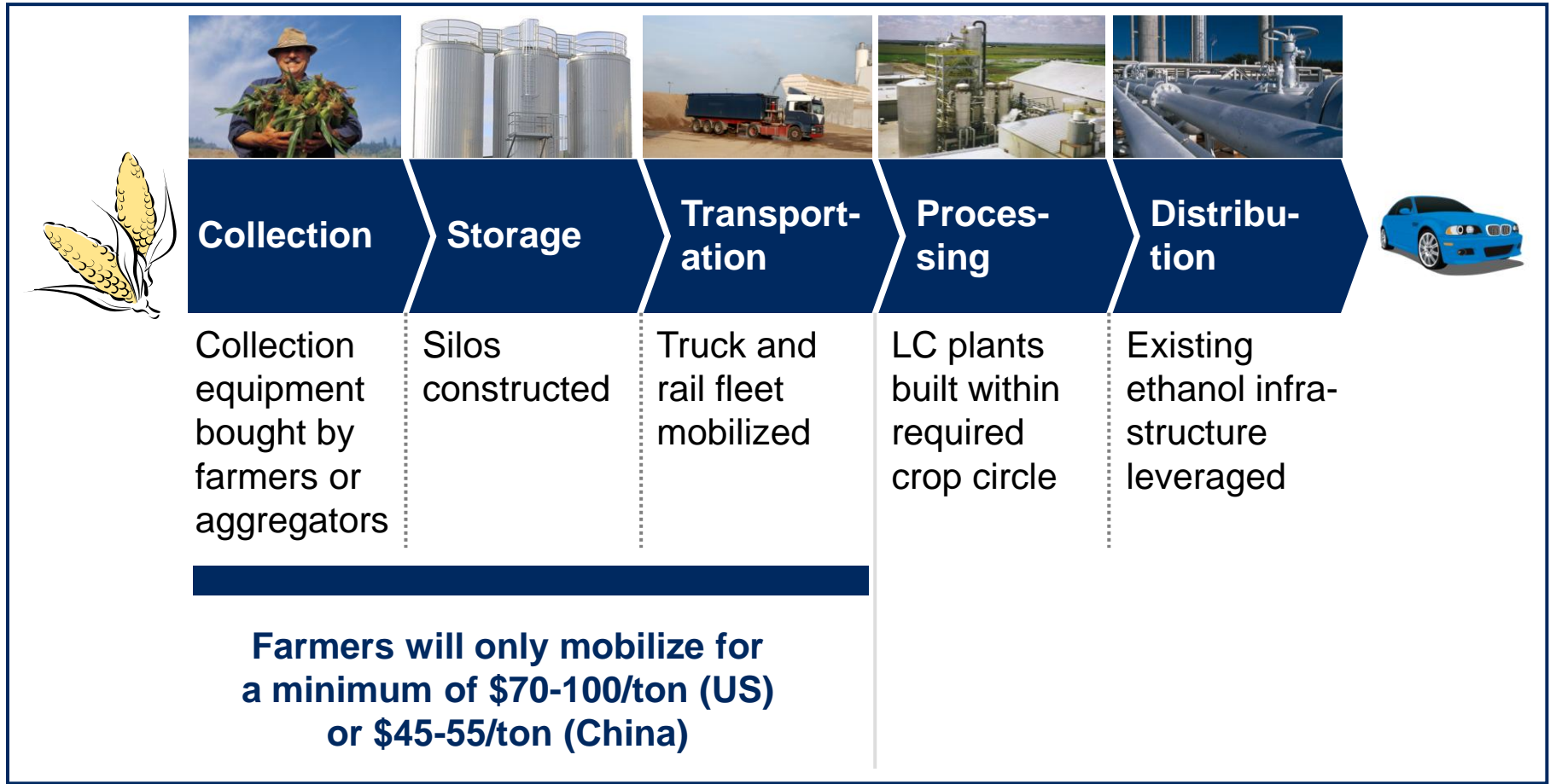


Biofuels must mobilize broader biomass sources



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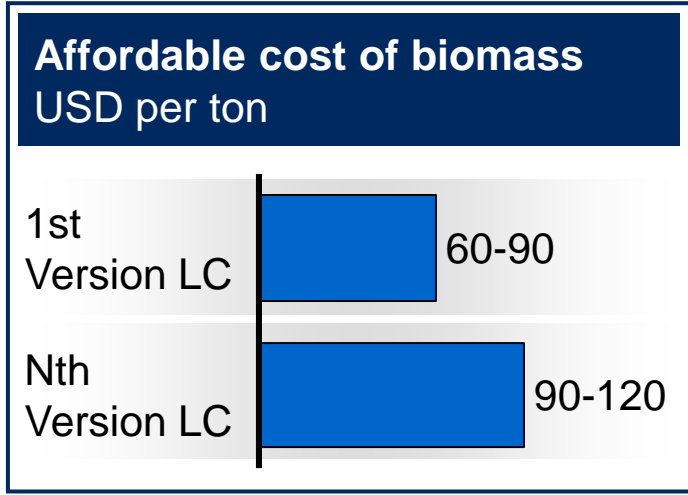
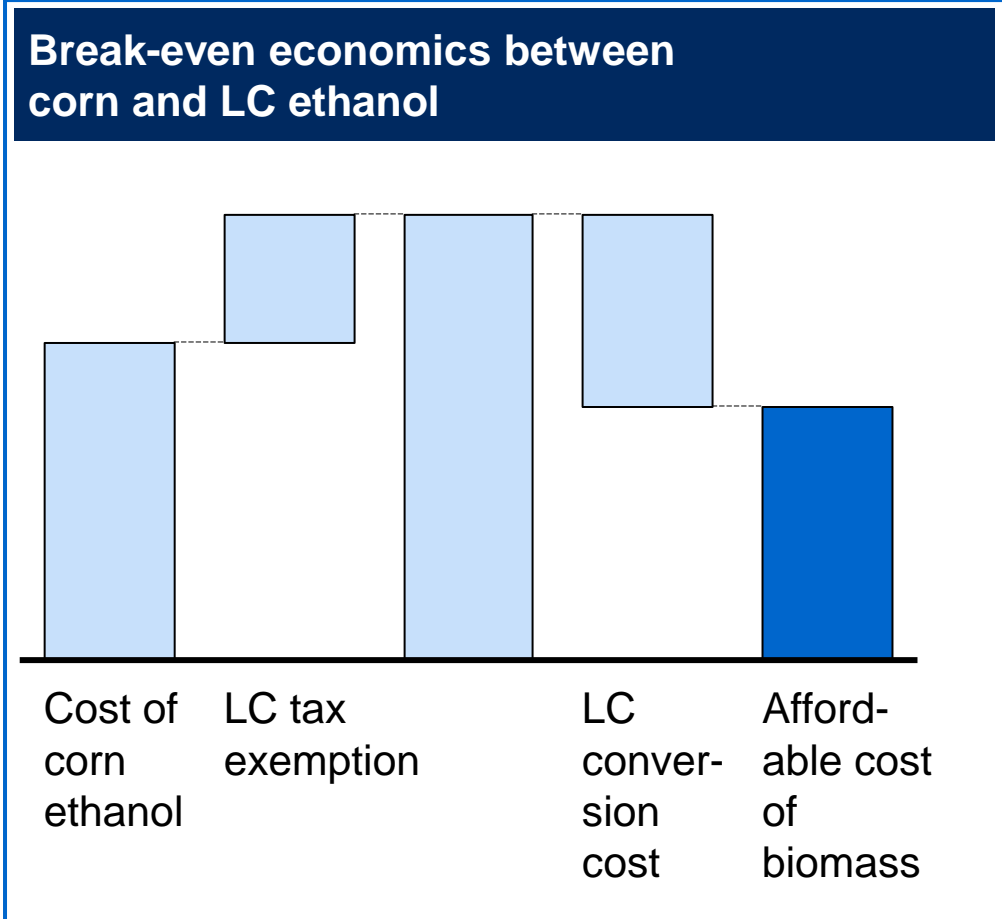
Cellulosic ethanol commercialization will require coordinated investments throughout the chain...



83% Value chain must be backwards integrated to feedstock with clear alliances throughout the value chain

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... and technology maturation to ensure an economic proposition for cellulosic biomass providers



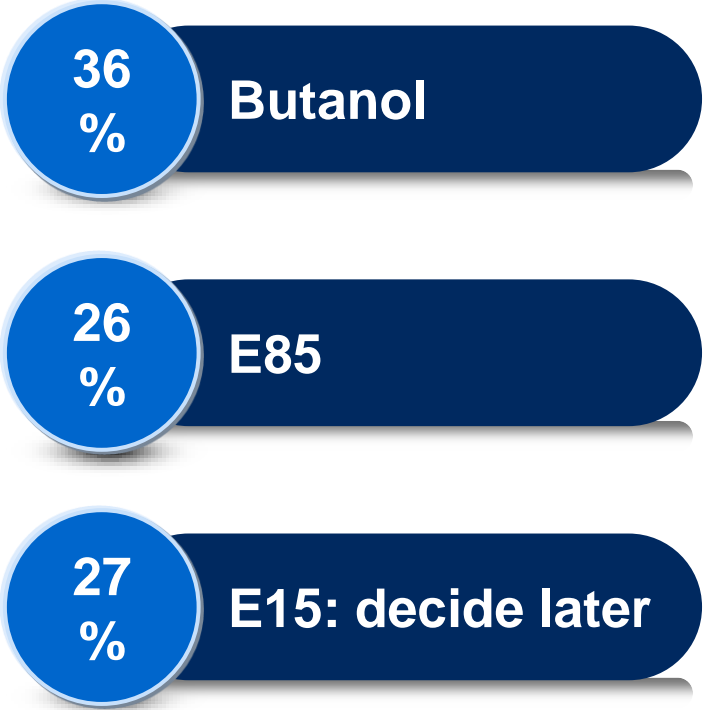
65% Cellulosic based technology will not reach maturity until 2020



Blend wall can be overcome with E85 or Bio-butanol but stakeholders are not aligned on the best option

Stakeholder	Options	
	E85	Butanol
Technology companies	LC-ethanol	
	Bio-butanol	
Production and distribution	EPC	
	Ethanol plant owners	
	Refiner/blender	
	Distributor	
	Auto OEMs	

Best option to overcome blend wall





Sustainability standards can help overcome important perceptions but should not restrict growth

Sustainability standards faces the following challenge



Too few criteria will restrict growth

Too many criteria could restrict growth

Key challenges facing biofuels sustainability

- 1 Demonstration of acceptable GHG footprint
- 2 Acceptable burden on water supply
- 3 Minimal impact on food supply

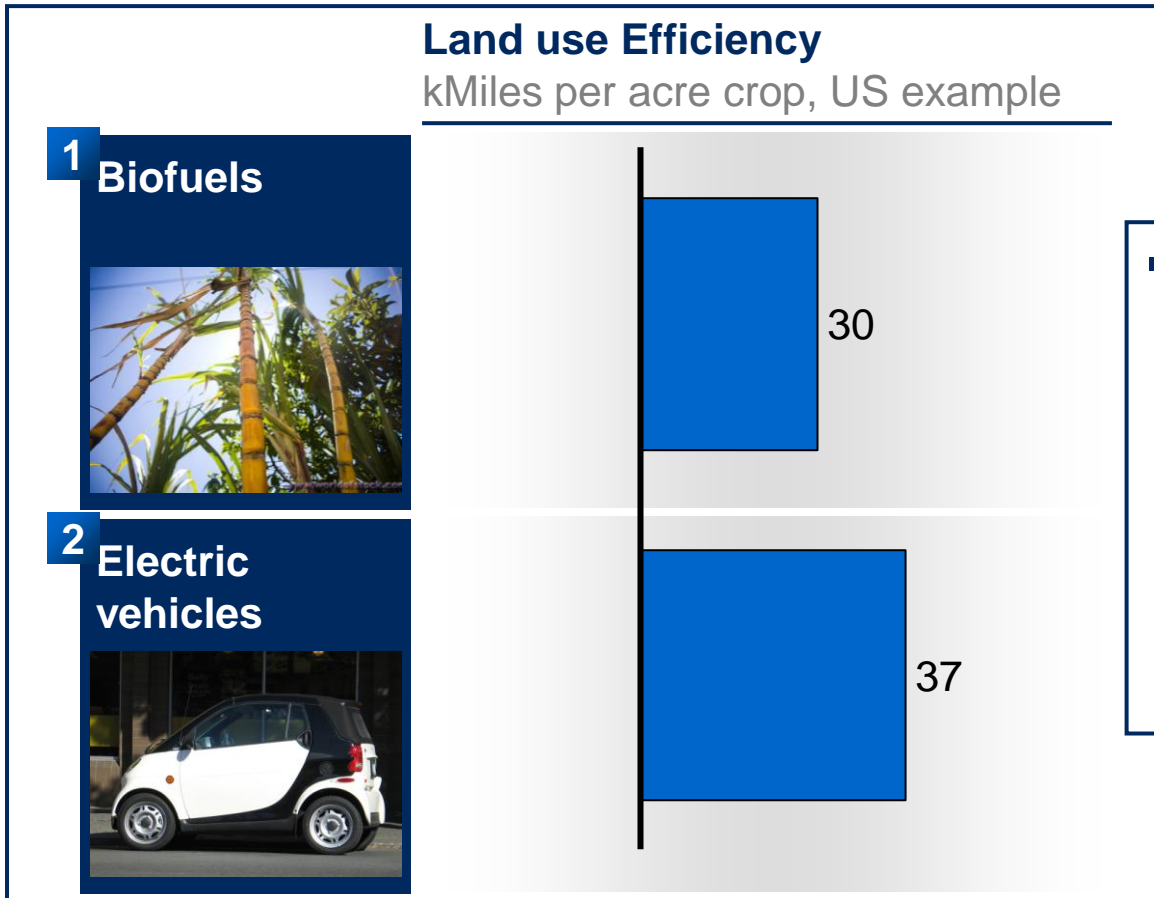
Should sustainability standards be changed?

80% Sustainability standards are critical to growth

6% No – they are good as they are today



Biofuels will need to position itself against other solutions within the energy matrix



- Tight value proposition given
 - Sensitivity to type of crop, process and car efficiency
 - Other non-land use related advantages

By the year 2025, what will be the dominant fossil fuel alternative?

60% Bio-substitutes for gasoline

19% Bio-diesel

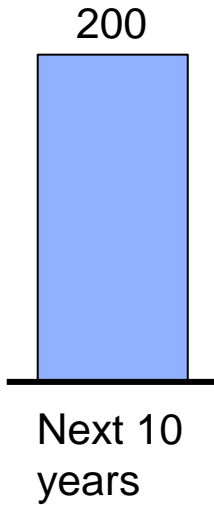
16% Electric vehicles

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Private sector is still investing but may need to overcome anxiety to support significant investments required

Biofuels investments needed to support 2020 growth
USD billions



“Shares in publicly owned ethanol companies have mostly been slumping all year. [Some] have lost more than 80 percent of their value since the beginning of the year “
– *The New York Times, 2010*

"Very few investors in any cleantech sector are going to be investing the amounts of capital we saw at the height in 2008,"
– *CleanTech Group, 2010*

Potential actions to strengthen investor confidence

76% Governments create long-term regulatory frameworks and offer incentives

60% Science offers clear evidence of biofuel efficiency and carbon impact

55% Insufficient capital to support our growth

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Industry must coordinate to overcome these critical hurdles



Availability of broader biomass feedstocks at affordable prices



Nth version economics can be quickly achieved for new biofuels



Agreement to blend wall solution



Establishment of robust yet practical sustainability standards



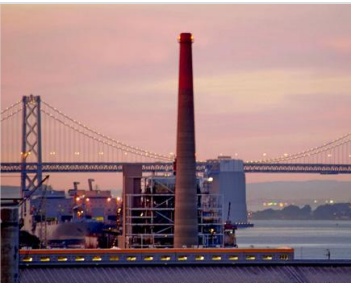
Restoration of investor confidence

Shape of the future depends on how these issues are tackled by the industry

Future state



All players in the industry drive the growth with many winning



Players pursuing their own growth with few winning



Electric vehicles wins over biofuels

Becomes reality if...

- Industry coordinates to overcome major hurdles to drive growth
- Investor confidence restored

- Large players resolve many of the issues on their own
- Smaller players unable to solve issues to support their own growth

- Uncoordinated answer to biofuels resulting in unanswered challenges
- Investors not confident in biofuels

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