



## ABENGOA

“Bioenergy, record year”



Completing  
Transformation 

9th Annual Analyst and Investor Day

**Javier Garoz**

Abengoa Bioenergy CEO

New York City & London, April 7 & 9, 2015

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1

FY 2014 and 2015 market perspective



2

Hugoton



3

2G challenges and opportunities



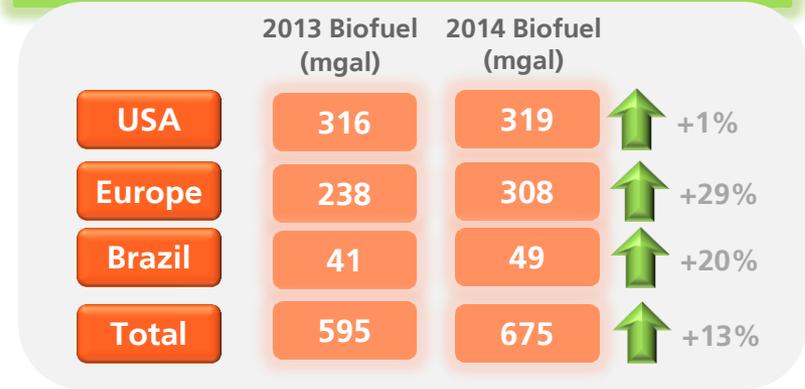
1

**FY 2014 and  
2015 market  
perspective**

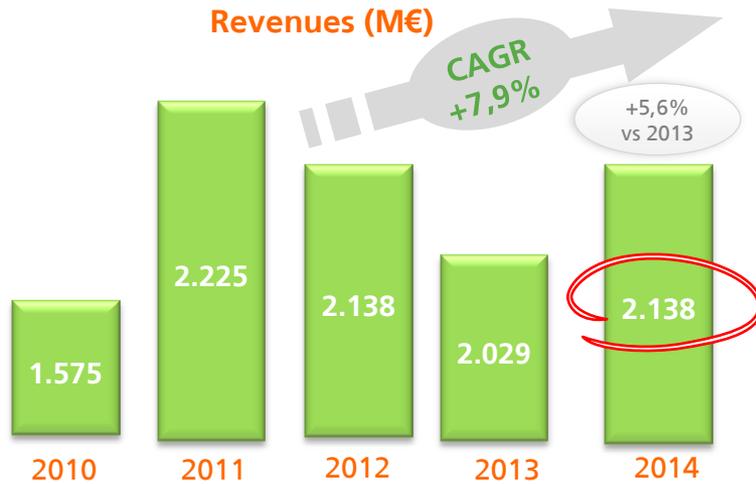
## Main figures



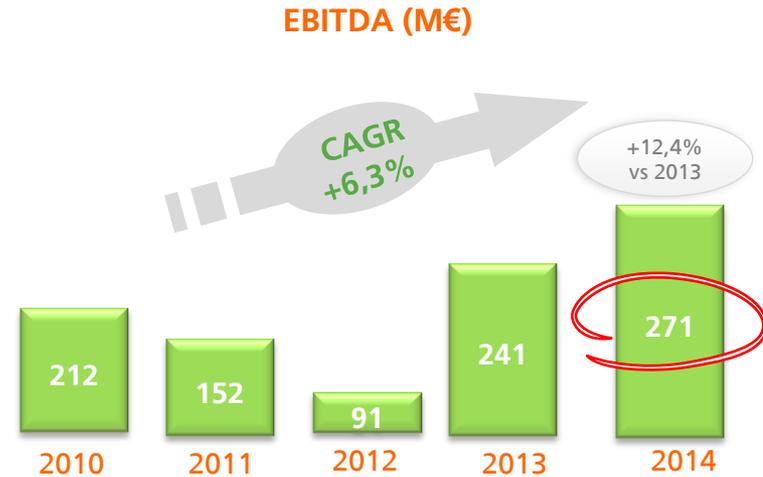
## Production figures



Revenues (M€)



EBITDA (M€)



# ABENGOA

Commodity prices helped



## Gasoline Demand



## Ethanol



## Corn



## Crush Margin



## Gasoline Demand



## Ethanol



## Corn



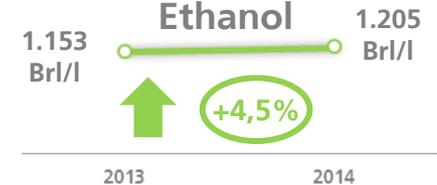
## Crush Margin



## Gasoline Demand



## Ethanol



## Electricity



## Sugar

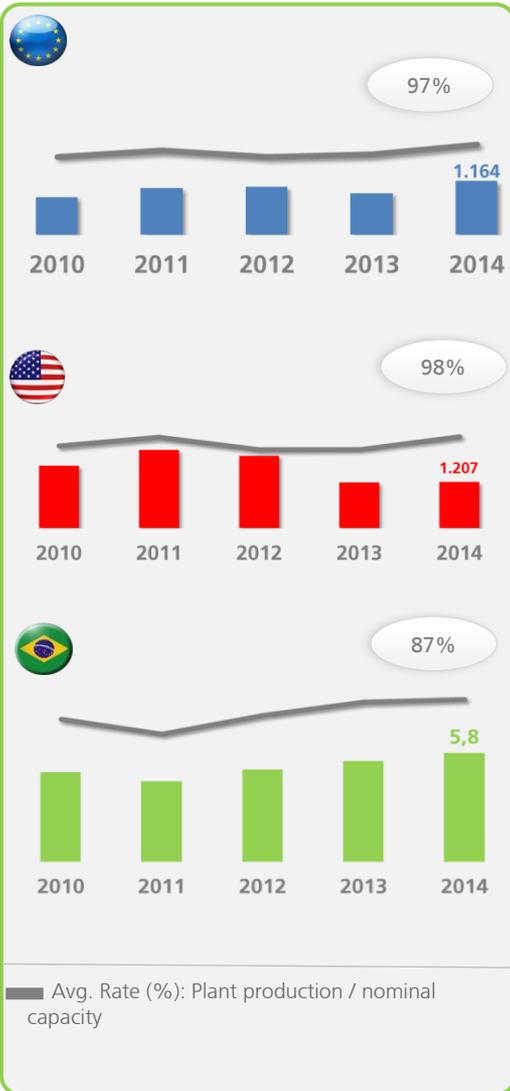


Margins record in US, lower margins in EU and higher prices of Ethanol and sugar in Brazil

# ABENGOA

Operational excellence achieved

## Avg. Plant utilization 94%



## Highest levels of production



## Optimization & cost reduction

+140MEur of savings through 2012-14

### Brazil turn around

Organization streamlined, agricultural and industrial areas improved.

## Quality and Safety a priority

High international standards of quality and sustainability applied. Record level of safety achieved

### Improved product & market diversification

≈20 Mgal Korea B exported  
30% exports to Asia and EMEA  
4 Us plants producing corn oil

### US



- ✓ RFS-2 **Waiting for EPA**
- ✓ LCFS – programs are moving forward in all West coast states, and provide great promise for the future of low carbon biofuels



- ✓ Production at **full capacity** (≈15 Bgal)
- ✓ **Low prices** of corn and gasoline



- ✓ Q1 ethanol price down pressed by oversupply
- ✓ **10% consistent blending**

### Europe



- ✓ ILUC amendments to **RED** and FQD **under discussion**
- ✓ Energy Union Strategy: **Promote 2G post 2020 under discussion**



- ✓ Market **oversupplied**
- ✓ **Low prices** of corn and gasoline



- ✓ Gasoline **demand slightly higher** but ethanol stocks are being built
- ✓ **Ethanol** more expensive

### Brazil



- ✓ **27% blend rate**
- ✓ Higher taxes on gasoline



- ✓ **Sugar** surplus continues with **good perspectives** on 2015 crop will put pressure on NY#11
- ✓ Spot electricity sales at record prices.



- ✓ **New crop** will depend much on **Q1 rains**
- ✓ **Arb** for Ethanol imports is **open** but there is enough ethanol to cover intercrop demand



Legislation



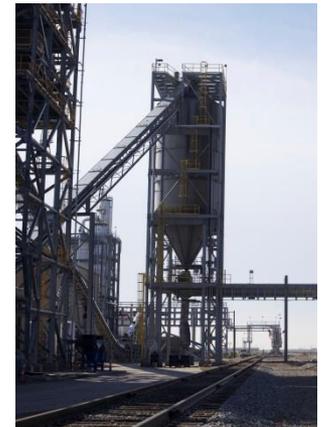
Commodities



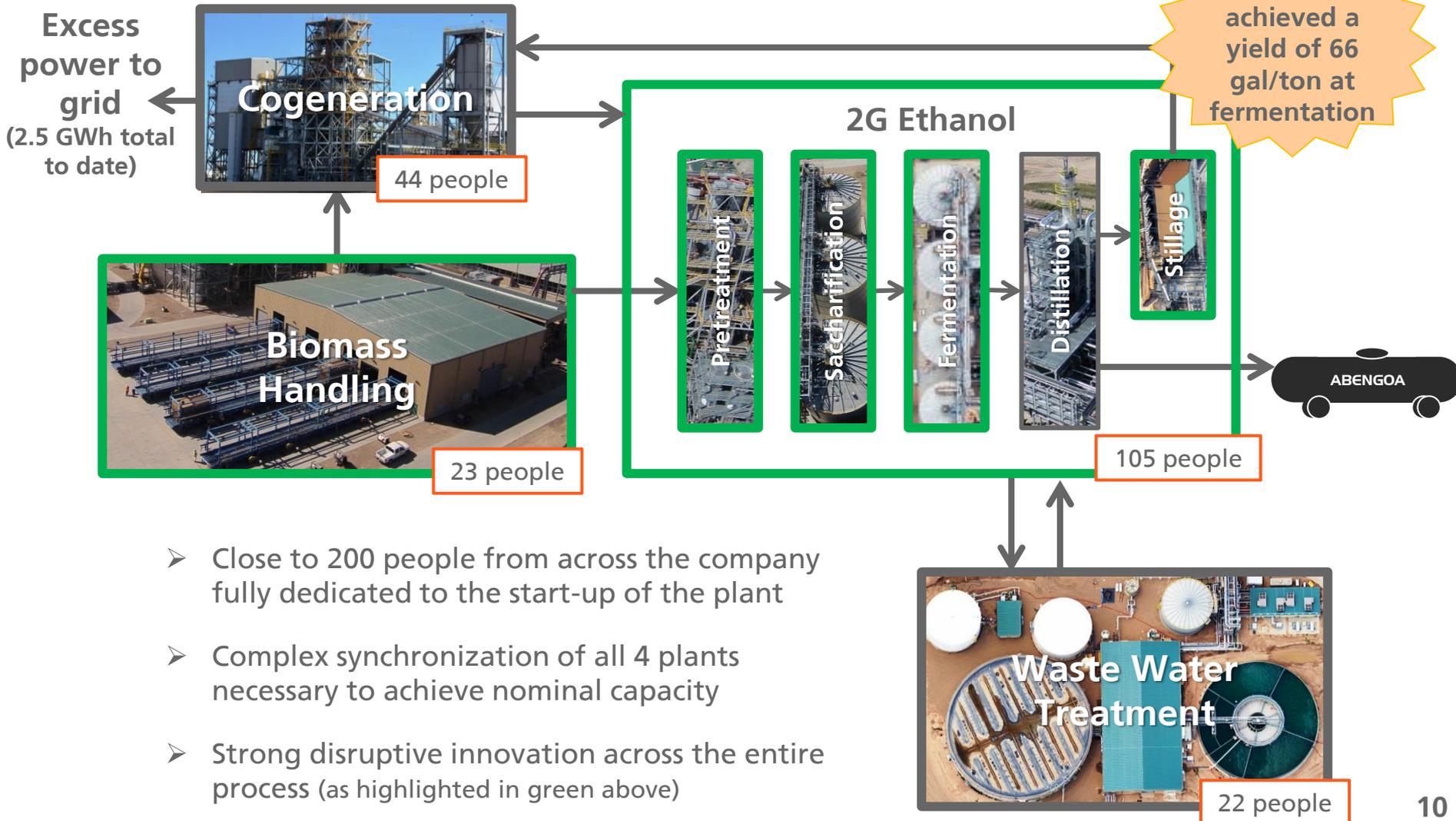
Supply & Demand

2

## Hugoton



## The Hugoton plant is actually 4 different plants in one



- Close to 200 people from across the company fully dedicated to the start-up of the plant
- Complex synchronization of all 4 plants necessary to achieve nominal capacity
- Strong disruptive innovation across the entire process (as highlighted in green above)

### Learning important lessons during start-up

#### Biomass Handling



- Biomass harvested comes with a high degree of unexpected impurities
- Biomass logistics is still an area with lots of efficiencies to gain
- Processing 1,000 tons per day of biomass with standard equipment becomes a challenge when considering the inconsistencies between bales (size, weight, composition, etc.)

#### Biomass Processing



- Scale up to commercial size challenges the specs of the equipment: using much larger amounts of biomass while trying to achieve optimal conditions of cooking
- Some material handling equipment and control systems require revisions to achieve optimal pressure and temperature

#### Operations



- Biochemical reactions are occurring as expected but continuous operation will depend on proper synchronization of all the parts of the plant
- Operations procedures are being written from scratch for the brand new process
- Talent is tough to attract and retain given the hard work of start-up

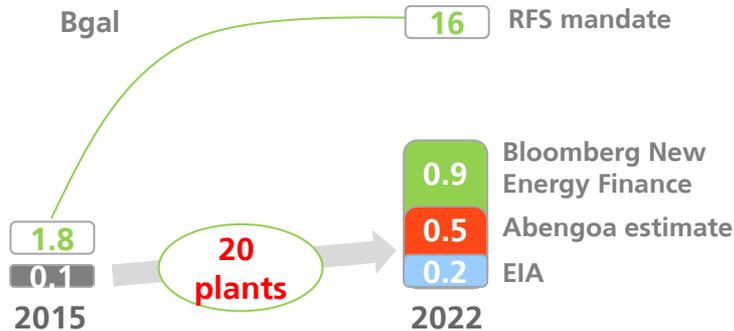
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## 2G challenges and opportunities

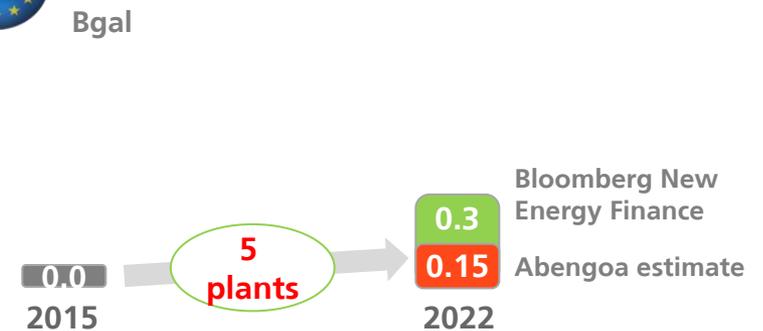
## Market for 2G ethanol will grow globally, but timing remains uncertain



### Projected United States 2G Ethanol output



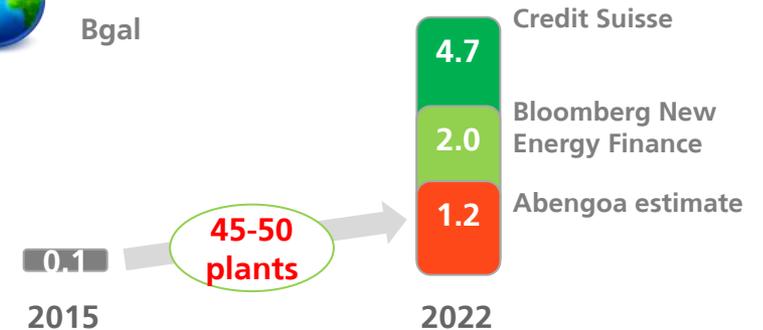
### Projected Europe 2G Ethanol output



### Projected Brazil 2G Ethanol output



### Projected Global 2G Ethanol output



“IEA chief: Low oil prices present opportunities to promote renewables” (December 18, 2014)



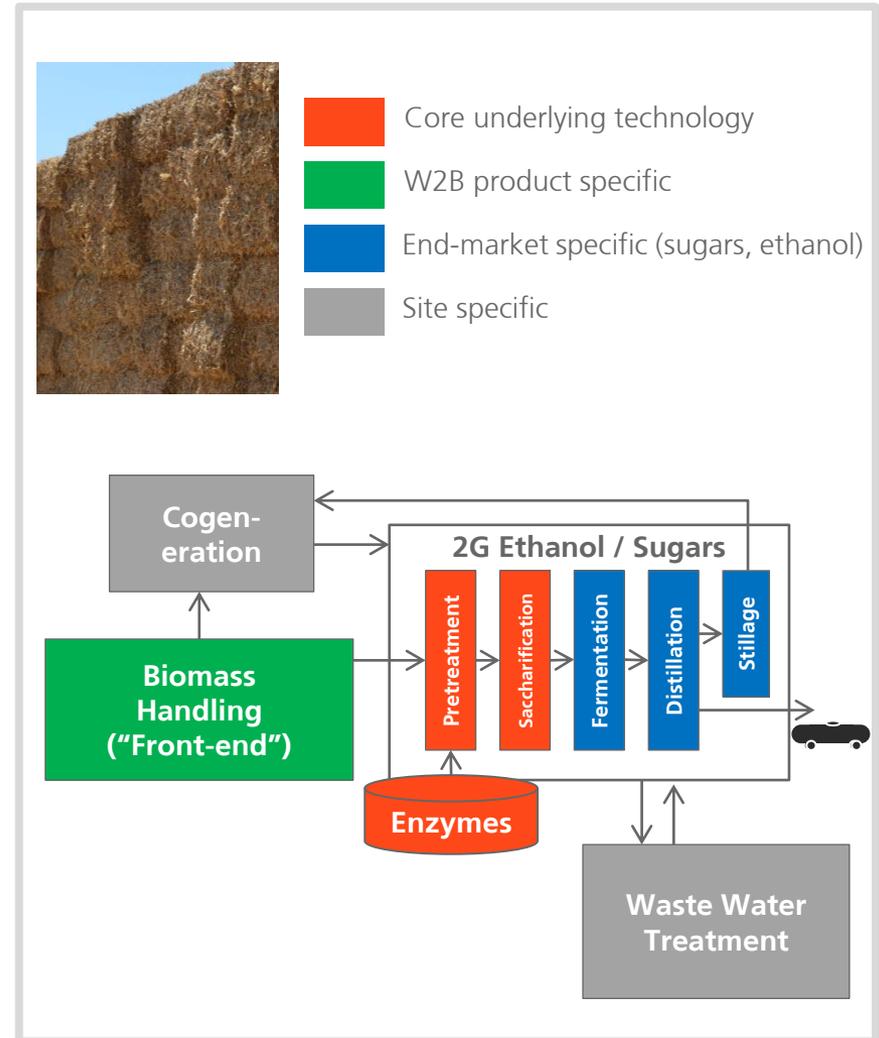
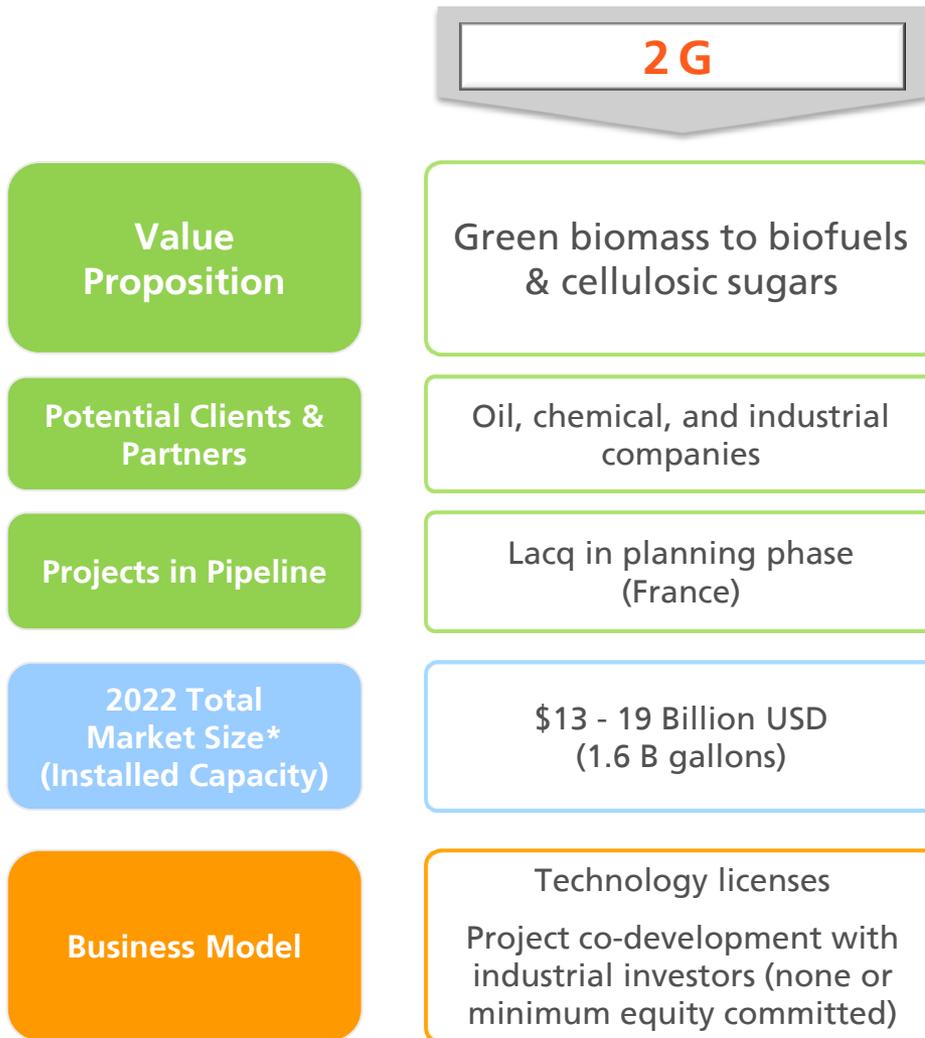
“IRENA report highlights bioenergy growth potential in the U.S.” (February 12, 2015)



“Bio-based chemicals on the rise in the United States” (October 7, 2014)

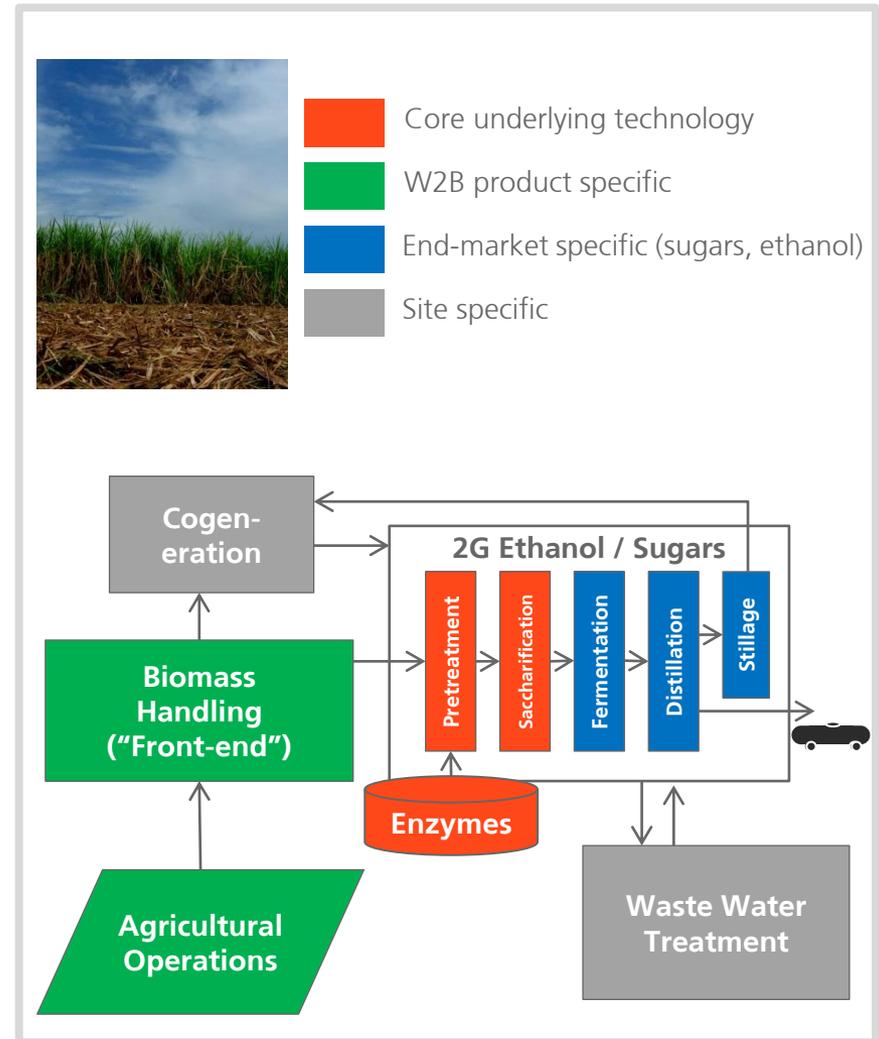
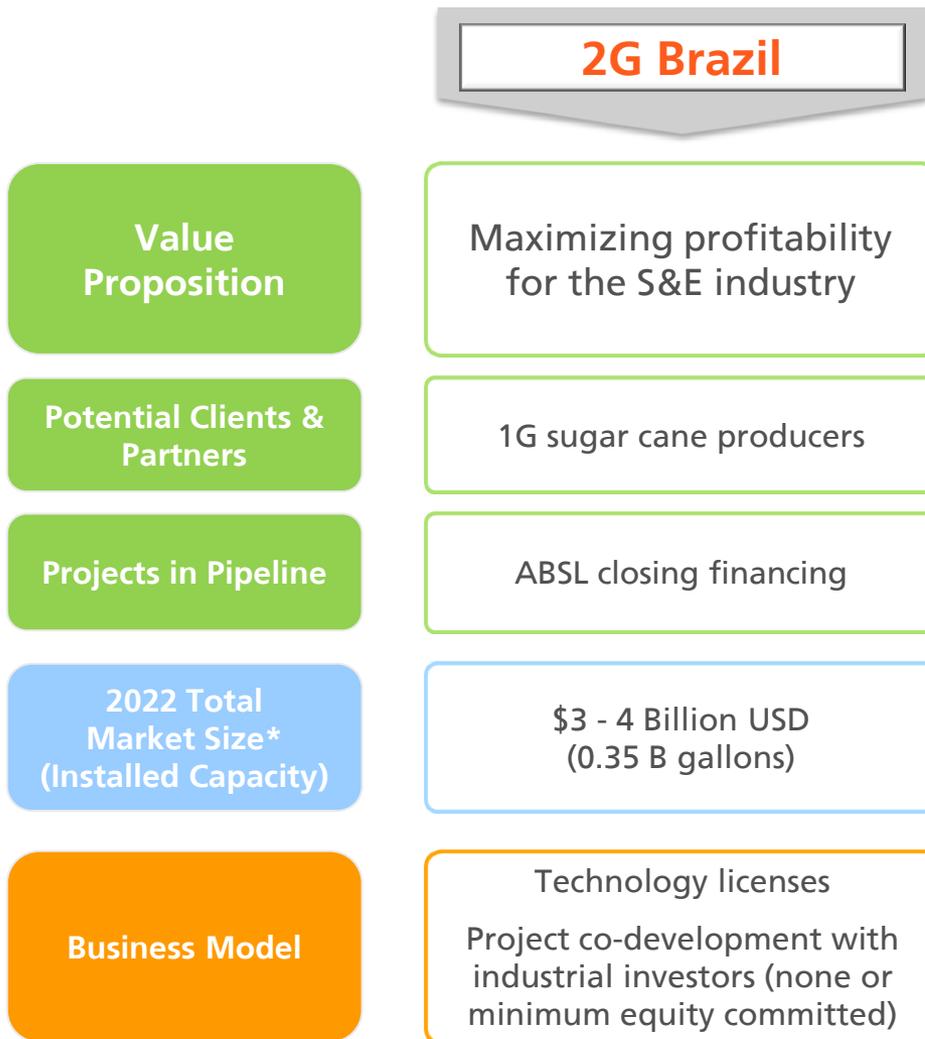


### Fine tuning our offering for a new high growth market



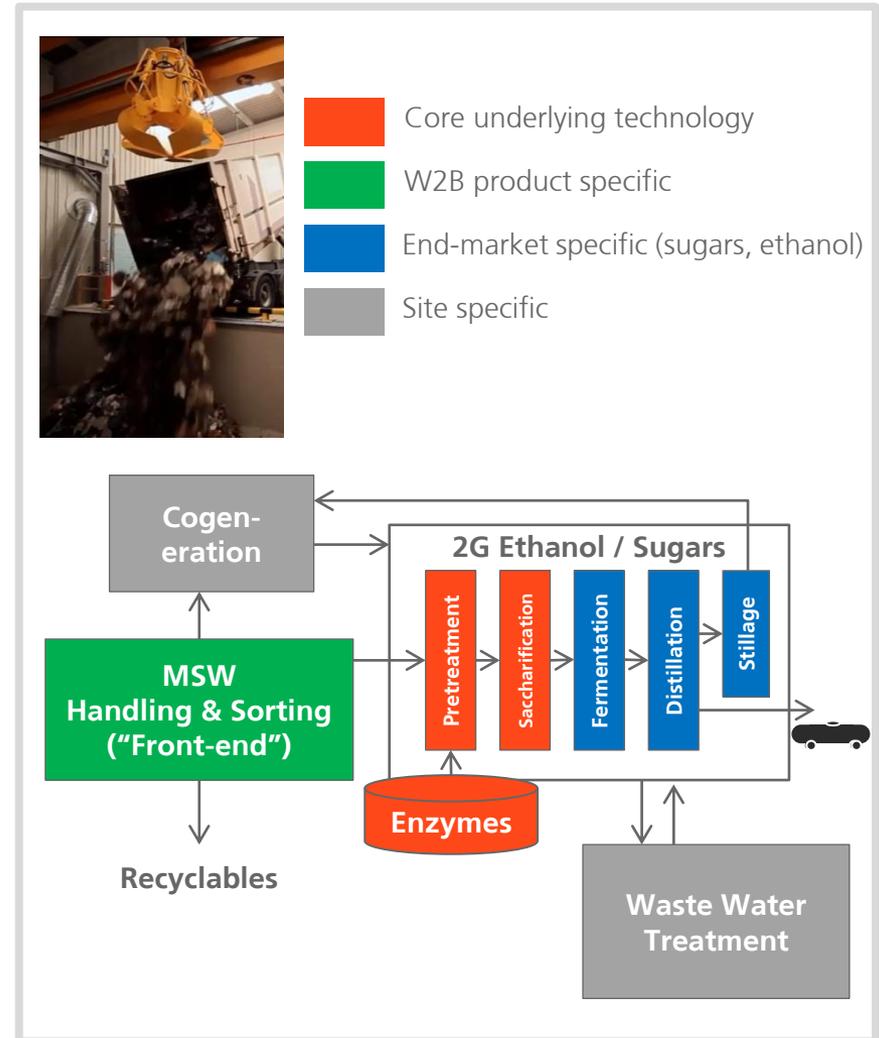
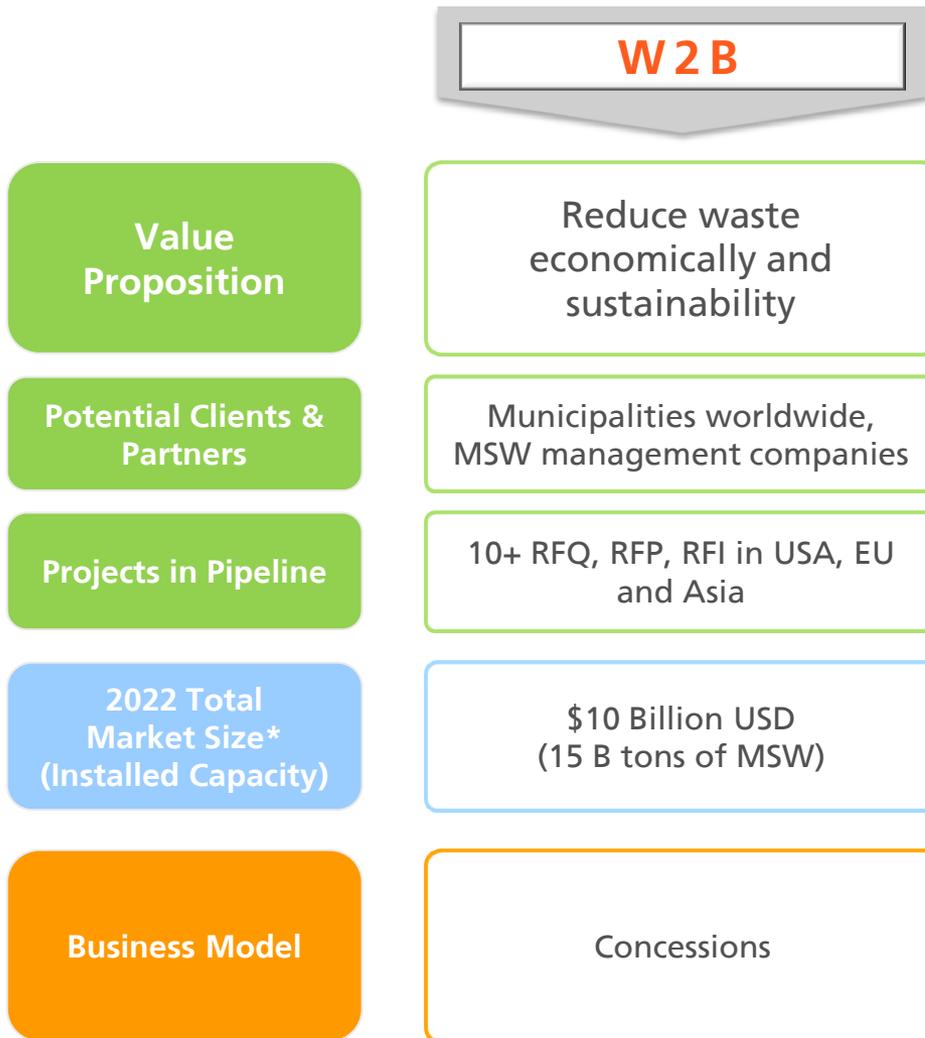
\* Total Market Size is based on a capital investment of \$8-12/gal, installed capacity is based on BNEF figures from slide 12

### Fine tuning our offering for a new high growth market



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### Fine tuning our offering for a new high growth market



### Technological

#### Biomass

- ✓ Value added of residues proved for farmers
- ✓ Testing energy crops with positive perspectives

#### Processing

- ✓ Identified key challenges in pretreatment, EH and biomass processing
- ✓ Scale up to commercial level is a reality

Monetizing lignin in high value segments becomes next landmark to achieve

### Regulatory

- ✓ Biofuels will continue as a key source of energy for the transportation
- ✓ Europe debating on mandatory quotas for 2G
- ✓ RFS-2 will remain strong in place
- ✓ Brazil supporting ethanol growth
- ✓ Incentives expected through grants and tax exemptions

**1** 2014 was a record year in revenues and profits, operational excellence achieved

**2** Enzyme commercial production began

**3** Hugoton start-up will continue

**4** Good traction growing pipeline of opportunities

**5** 2015 shall be a challenging year with so many uncertainties

# ABENGOA

Innovative Technology Solutions for  
Sustainability



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Thank you

April 7 & 9, 2015