



GLOBAL BIOENERGIES

*Building a New  
Energy World*

*March 2018*

*Euronext Growth: ALGBE*



This presentation contains certain forward-looking statements that have been based on current expectations about future acts, events and circumstances. These forward-looking statements are, however, subject to risks, uncertainties and assumptions that could cause those acts, events and circumstances to differ materially from the expectations described in such forward-looking statements.

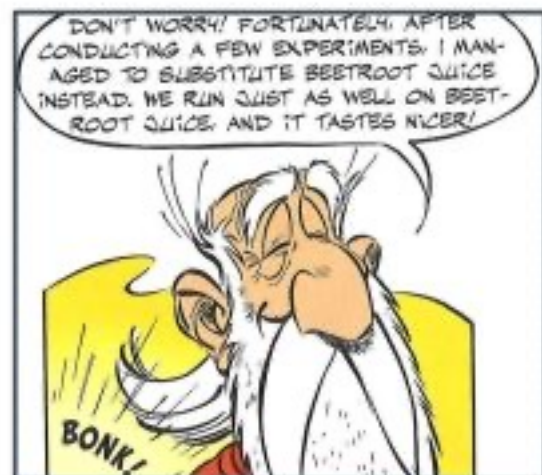
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## Renewable oil: an old dream



(...)



Asterix and the Black Gold - 1981

We are part of the change

Using breakthrough innovations,  
we convert renewable resources  
into drop-in fuels and materials.

See slide 11

See slide 12

See slide 13

## We jump the wall

- Bio-ethanol, the first global industrial biotech success for alternative fuels has reached its own limit:

⊖ Ethanol --> 10% blendwall in gasoline ⊖

- At Global Bioenergies, we produce the same fuels and chemicals that are derived from the refining of oil.
- Because our products are chemically identical to those derived from oil:
  - they can be mixed to fossil products without any limit
  - there is no need to invest in specific infrastructure to use them

- It is called a « drop-in » technology



## Industrial biotechnology – the road to maturity

~100 industrial biology companies worldwide are moving the field across the Gartner Cycle



2018 : Climbing the slope of enlightenment ?





## False ideas

« **Biofuels starve the planet!** »

- False, 1<sup>st</sup> and 2<sup>nd</sup> Generation resources are globally oversupplied and 1/3 of food production is wasted today



« **They will never compete with oil derivatives!** »

- False, biofuels compete today in premium markets
- Oil prices recover and competitiveness increases



« **Electric vehicles are THE solution!** »

- False, but will still take a significant stake in the future energy mix
- EV deployment will be slow because it faces several barriers: autonomy, grid upgrading, real GHG savings...



## Issues we address

Oil dependency



Climate Change



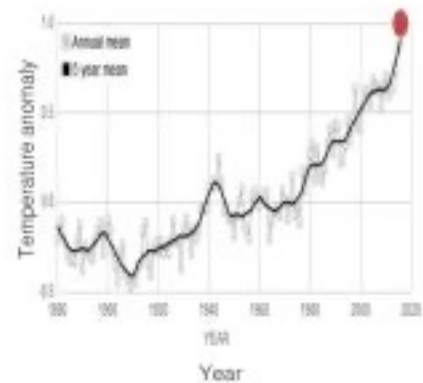
## Oil dependency

- Conventional oil production has peaked
- Oil demand increases steadily
- Non-conventional oil (Shale, Oil sands, Deep offshore) is filling the gap for now - No guarantee it can last for long...
- Catastrophic scenarios if oil becomes scarce - Need to prepare solutions to complement oil
- Global Bioenergies' technologies produce key building blocks for fuels and materials
- Using agricultural and forestry surpluses, long term target of 5% of present worldwide oil production



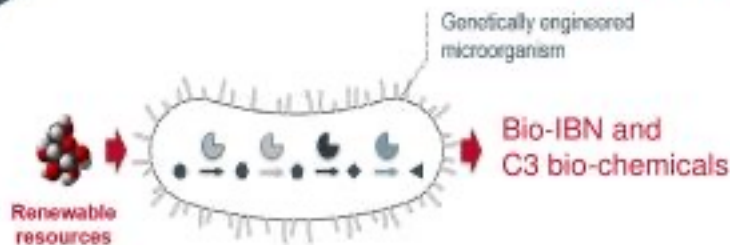
## Climate Change: potential for global impact

- Climate change metrics
  - Temperatures already 1°C above historical average
  - Paris Agreement aims a 2°C increase maximum by 2100
  - If nothing is done rise could reach 5°C
- Green House Gas emissions <sup>(1)</sup>
  - Have reached 53Gt per year in 2017
  - Must be lowered by 11Gt in 2030 to meet Paris objectives
  - Must be negative by end of century
- Great potential in Transport sector. Regulations shall promote <sup>(2)</sup>
  - Efficiency (35% of 2030 objective)
  - Biofuels (6% of 2030 objective)
- Global Bioenergies' drop-in products can be a significant part of the solution

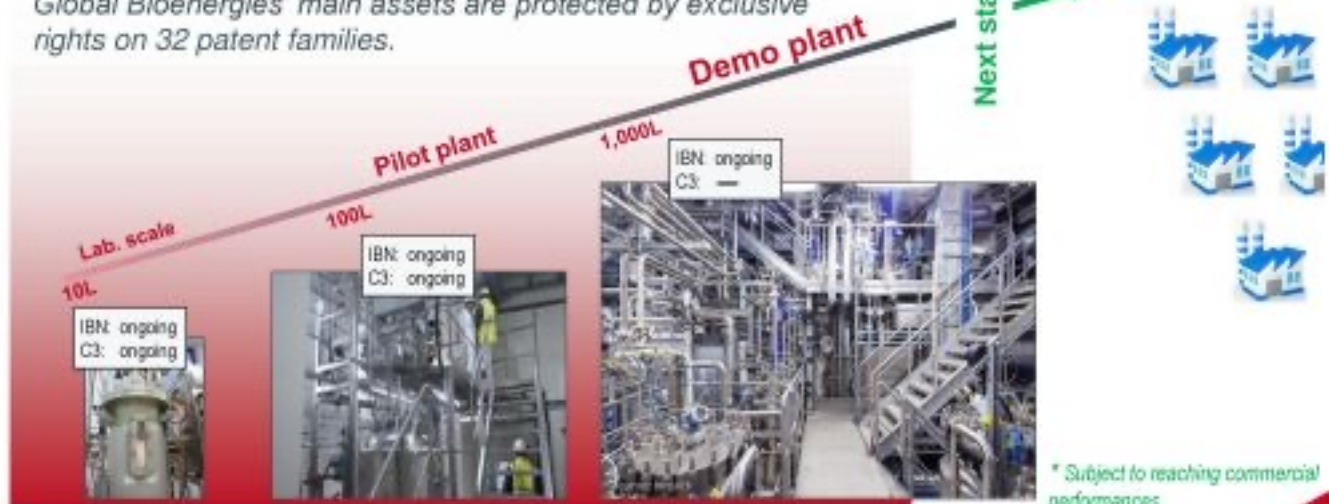


(1) Total Green House Gases expressed as tons of CO<sub>2</sub> equivalent  
 (2) UN Environment – Emissions Gap report 2017


## Breakthrough technologies maturity



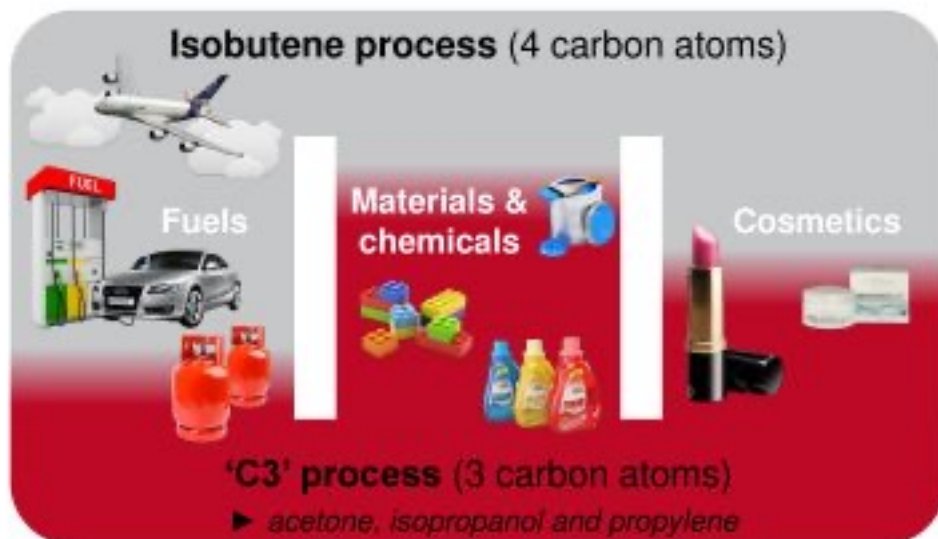
Global Bioenergies' main assets are protected by exclusive rights on 32 patent families.



## Three generations of feedstock

Availability	Today	Short term	Longer term
	<p><b>1G Food crops</b></p>  <p><b>Traditional feedstocks</b>                      Sucrose: Beet, cane                      Glucose: corn, wheat</p>	<p><b>2G Wood chips, straw, bagasse</b></p>  <p><b>Advanced feedstocks</b>                      Forestry: wood chips                      Agri: wheat straw, corn stover...</p>	<p><b>3G Industrial waste gases</b></p>  <p><b>Emerging feedstocks</b>                      Steel mill syngas                      Concentrated CO<sub>2</sub></p>
Potential	Cost of resource		Environmental impact
Prospects	Major agricultural players		Present: steel mills (syngas) Future: all CO <sub>2</sub> -emitting industries
		Forest operators	

## Two processes addressing huge markets worldwide



## IBN-One: first commercial plant project

- ▶ Joint-Venture between Global Bioenergies and Cristal Union, supported by the ADEME *Investissements d'Avenir* program



- ▶ Estimated CAPEX: €115 million to be funded by

- Cristal Union
- Public & Private infrastructure funds
- Banking debt

- ▶ Engineering studies:

- TechnipFMC
- IPSB

- ▶ Commercial development:

- First commercial agreements with **ASPEN** and **Butagaz**
- Collaboration with **L'ORÉAL**
- Would be profitable in Jan. 2018 environment

- ▶ Commissioning and start of commercial operations targeted in 2021

- 1 Production** – 120-200K industrial sucrose are converted into 30-50K gaseous, low purity isobutene
- 2 Purification** – isobutene is isolated from surrounding fermentation gases
- 3 Shipping** – Liquid high purity isobutene (99.7%) is stored and shipped for chemical applications
- 4 Conversion** – Part of the production is converted on site into bio-fuels



Sugar mill

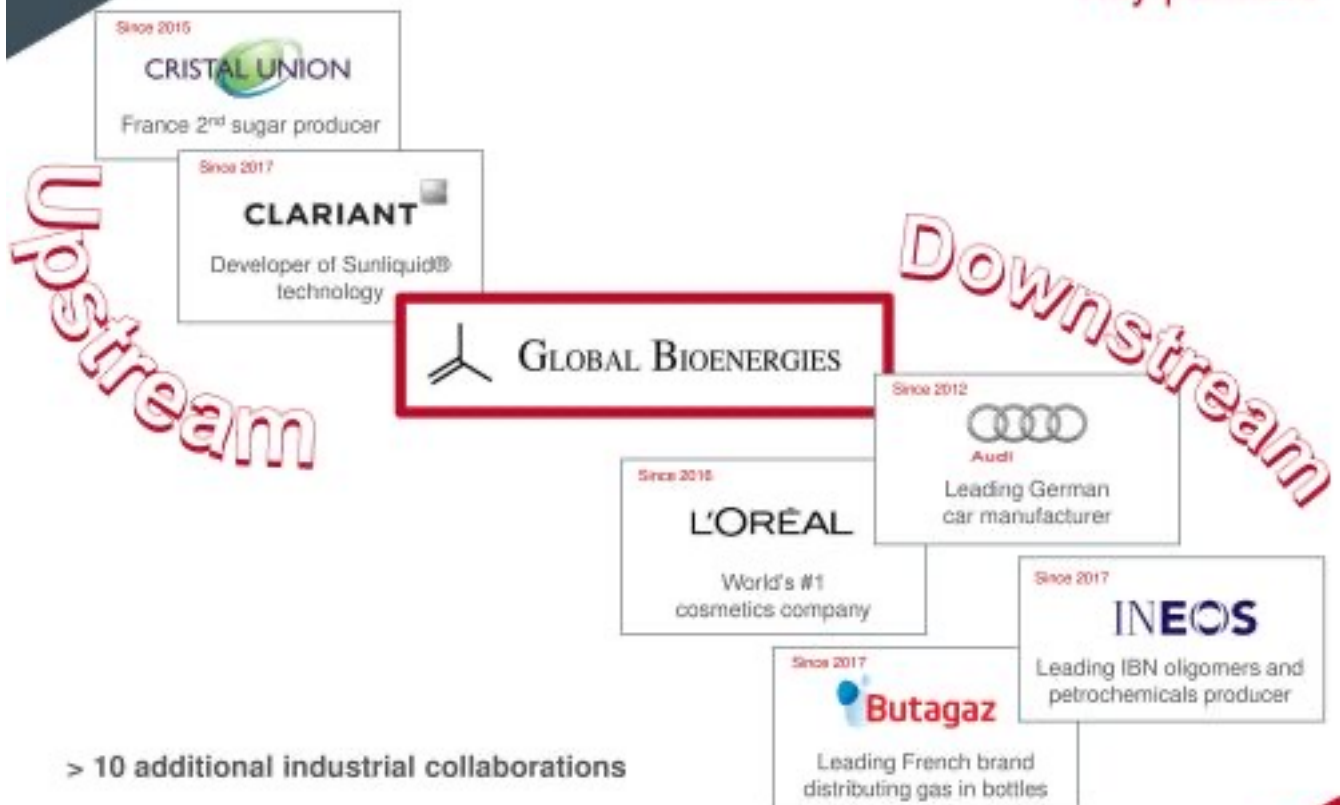




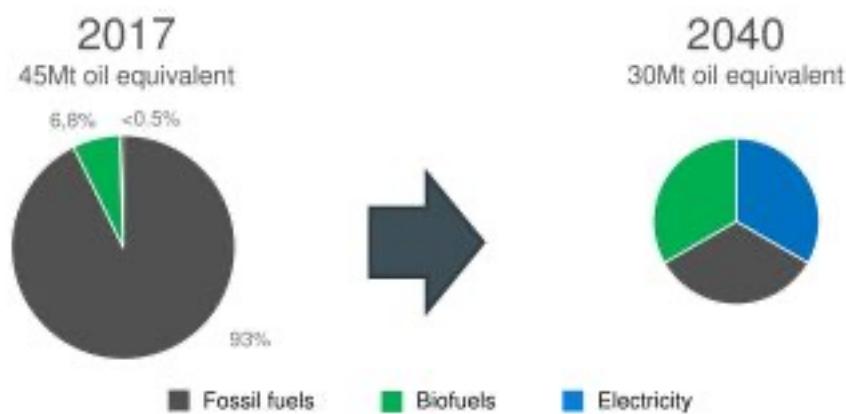
## A multi-faceted business model

- Technology licensing to exploiting industrialists. We target:
  - \$1million upfront per 10,000 tons capacity
  - 5% royalties on sales
    - For a typical 50,000 tons project: €5m upfront + €5m/yr royalties
    - Global Bioenergies would be profitable with only 3 licenses
- Engineering services during the design and construction phase of plants
- Marketing and retention of commercial rights
  - to avoid competition between licensees, and
  - build the identity of the company on the product

## Key partners



## Our vision for France's road transport



### Transition Pillars

- Consumption reduction (better cars, shared transportation...)
- Biofuels deployment (x2 in acreage)
- Increase in renewable electricity (x3), new infrastructures, grids

### Impact

- Oil consumption down 75%
- CO<sub>2</sub> emissions down 60%

Market for 60 new bio-gasoline factories and a vibrant local economy

## Our vision 2040 for the world's road transport

- No reduction in road transport consumption yet, but no more growth (better cars and shared transportation to progressively balance demand growth from emerging countries)
- EV accountable for 10% of the transportation energy, driven by Asia
- Biofuels to increase from 1% today to 5% in 2040:
  - Driven by Europe and the Americas
  - Production of 250 million tons biofuels per year
  - 5000 production plant (size of IBN-One)
  - 10% of the world arable land and 5% of the world forestry output
  - CO<sub>2</sub> emissions reduced by about 500 million tons annually

# Management

Executive committee



**Marc Delcourt**  
*Chief Executive Officer*



**Samuel Dubruque**  
*Chief Financial Officer*



**Macha Anissimova**  
*Chief Scientific Officer*



**Frédéric Pâques**  
*Chief Operating Officer*



**Bernard Chaud**  
*Head of Industrial Strategy*



**Luc Mathis**  
*Chief Business Officer*



**Jean-Baptiste Barbaroux**  
*Chief Corporate Officer*

Vice presidents



**Dr. Richard E. Bockrath**  
*VP Chemical engineering*  
Former Technical Director at DuPont



**Dr. Charles E. Nakamura**  
*VP Metabolic engineering*  
25 years at DuPont.  
Received ACS award in 2007



**Claudia Erning**  
*VP Investor Relations*  
Former Head of ECM  
Origination at Berenberg Bank

## Board of Directors

Board of Directors



**John Pierce** – Chairman of the Board

*Leading American figure of the industrial biology sector, former Chief Bioscientist of BP*



**Marc Delcourt** – Co-fonder and CEO

*Entrepreneur with a scientific background. Has founded and managed industrial biotechs since 1997*



**Philippe Marlière** – Co-founder and President of the SAB

*Visionary scientist. Has pioneered the translation of biology into industrial applications*



**Sébastien Groyer** – Partner at Seventure Partners

*Has participated in the investment, administration, market launch or takeover of about 20 innovative companies*

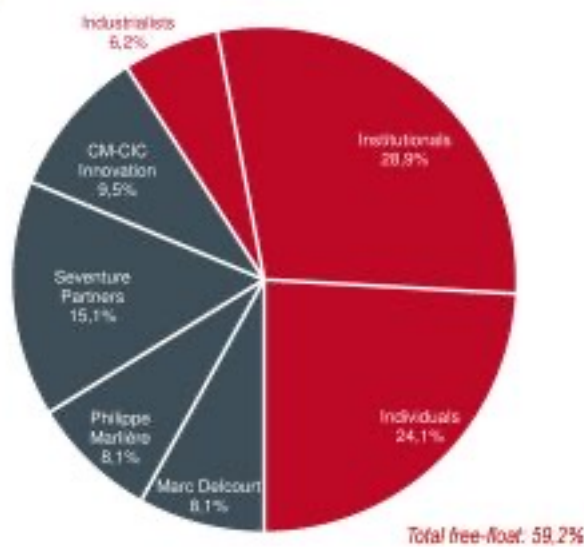


**Karine Lignel** – Director at CM-CIC Investissement

*A trained engineer active in Venture Capital since 2000*



## Shareholders and equity financing

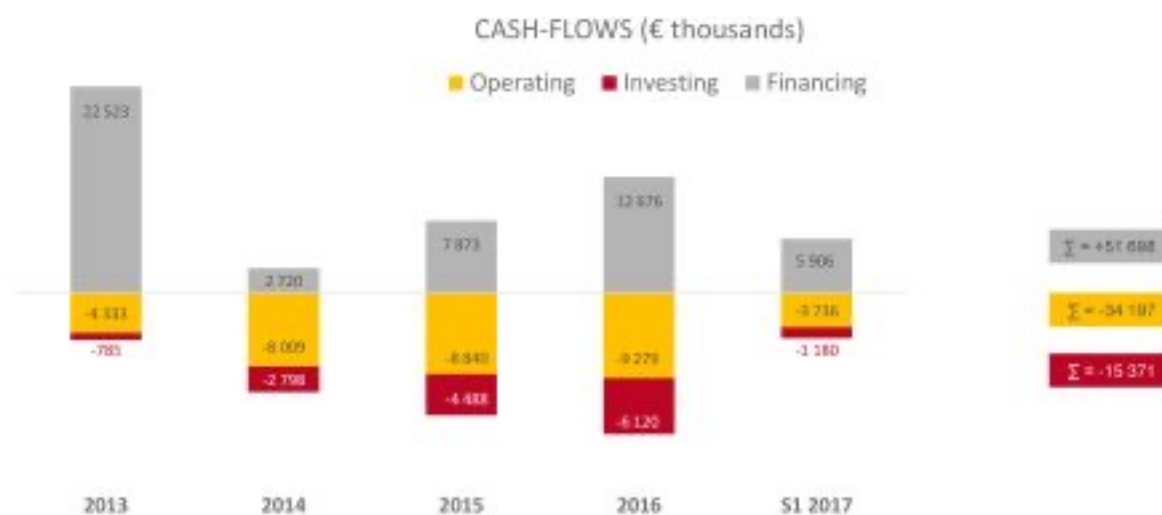


- ▶ 68 million euros raised to date
- ▶ Market cap ~€75m

Average daily liquidity	
2012	€16k
2013	€32k
2014	€77k
2015	€96k
2016	€90k
2017	€120k

Existing shares as at Dec. 31<sup>st</sup>, 2017      4,487,501  
 + Dilutive instruments (stock-options, warrants...)      + 633,251  
 including stock options for employees:      214,732  
**Fully diluted: = 5,120,752**

## YEARLY CASH-FLOWS



- ▶ All major investments behind (laboratory equipments, pilot, demo plant)
- ▶ Cash in hands as at Sept 30<sup>th</sup>, 2017: €17m

## An intense newsflow expected on the short term

- 1 Shipment of Isobutene to several industrialists for technical validation and market testing
- 2 Progresses in IBN and C3 processes performances and scale-up
- 3 2<sup>nd</sup> Generation: progress in existing and new collaborations
- 4 3<sup>rd</sup> Generation: technical validations
- 5 IBN-One:
  - Financing of the final engineering phase
  - Off-take agreements
- 6 Build up of a portfolio of commercial plants projects

**Jean-Baptiste Barbaroux**  
Chief Corporate Officer

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