



*The emergence of an
industrial biology leader*

October 2015



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The founders

Dr. Marc Delcourt

*Co-founder
CEO*



Scientific background

Founder and CEO of industrial biotechs since 1997

Dr. Philippe Marlière

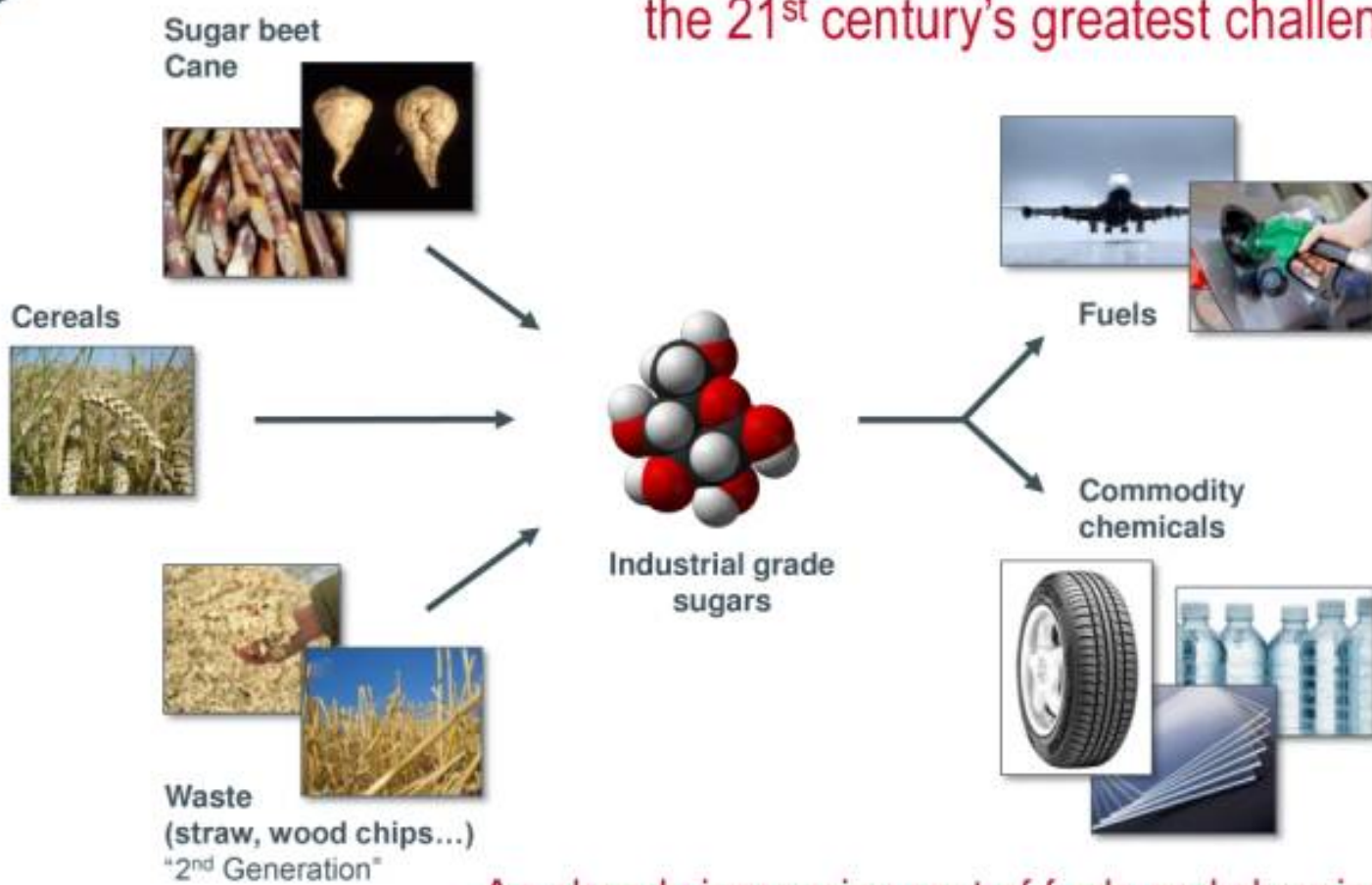
*Co-founder
President of the Scientific Advisory Board*



Visionary scientist

Has pioneered the translation of synthetic biology into industrial applications

Industrial biology the 21st century's greatest challenge



An already increasing part of fuels and chemicals

State of the industry

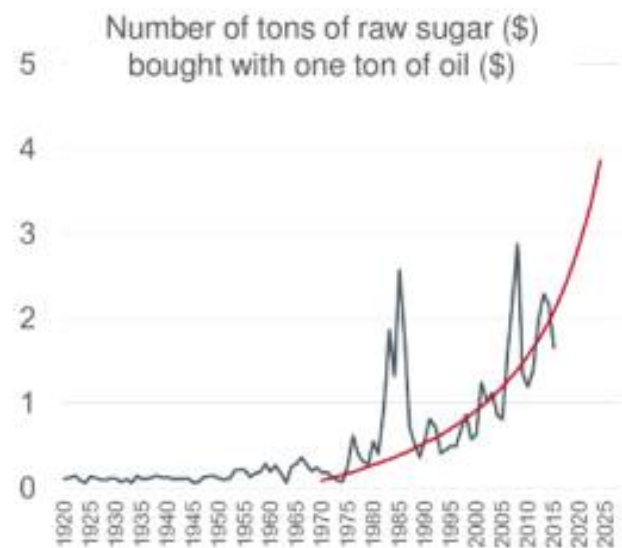
- Current technologies: Ethanol and feed additives
 - Mature and widely spread
 - Low margin, low value

- Modern industrial biology targets higher value products
 - Still in its pioneering days: limited number of players
 - Only a few successful commercial plants

Increasing competitiveness of renewables

- Oil
 - S1 2015: 2 Mb/d excess offer ► market oversupply
 - Return to a balanced market expected S2 2016, under the combined effect of:
 - A very strong increase in demand¹.
 - A decrease in tight oil production².

- Agricultural resources
 - Prices decrease since 2013, return to historical prices
 - No increase in prices is expected³: high stocks, historically high production of cereals per capita⁴, end of European sugar quotas.



1 : +1,6Mb/d annually: IEA (International Energy Agency)
 2 : -1,1Mb/d annually: EIA (Energy Information Administration)

3 : USDA – Agricultural projections to 2024
 4 : World Bank

Mission Statement

To take part in the energy transition by bringing
renewable hydrocarbons to the market

1. Bio-isobutene: Technology

2. Technological maturity

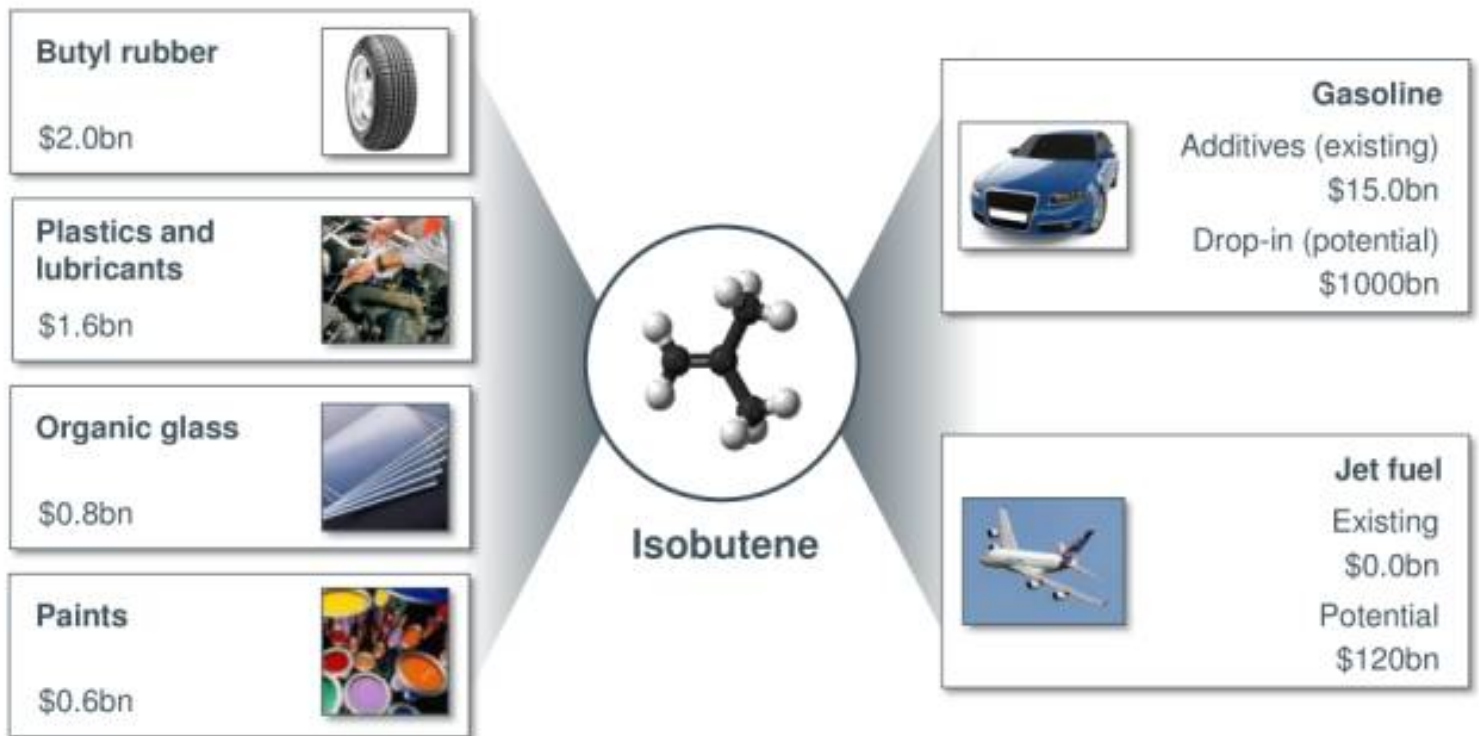
3. Market access

4. R&D

5. Team

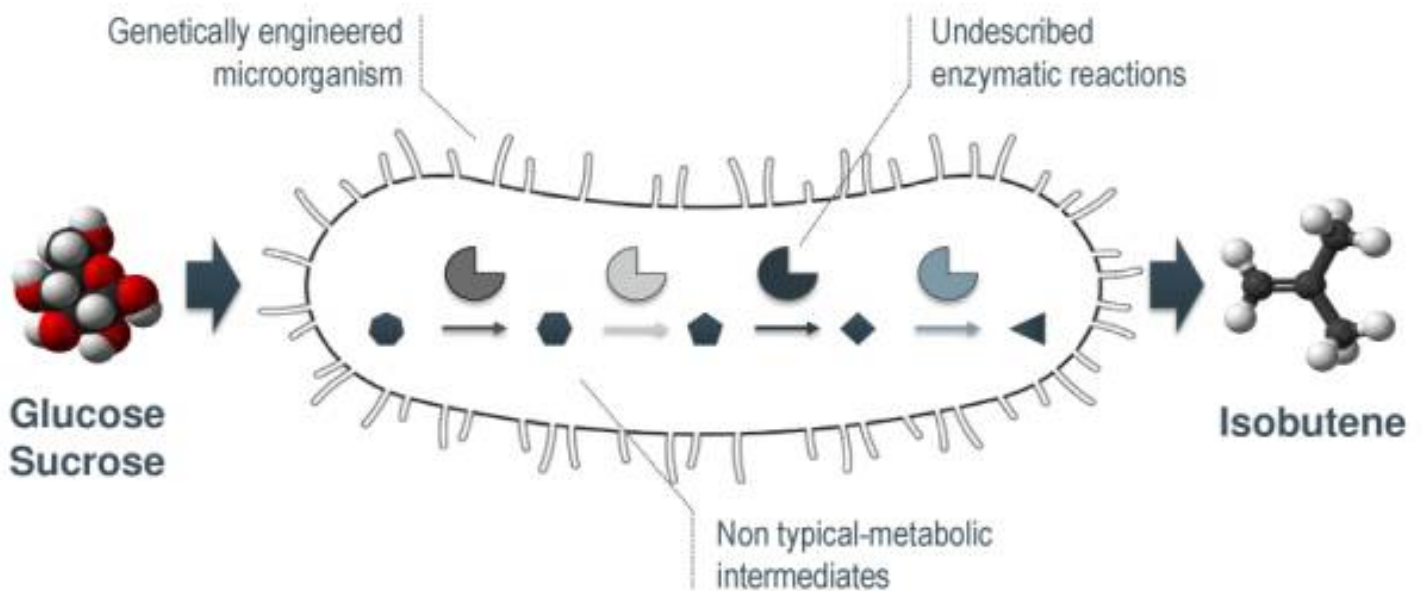
6. Finance

Isobutene: a wide product tree



Existing market greater than \$20b – Huge potential

Microbial factory



- Breakthrough innovation: artificial metabolic pathways
- Exclusive rights on 26 families of patent applications on isobutene and other hydrocarbons (first patents granted in 2014)
- First ever fermentation process to a gas

A simple and robust two-steps technology



Glucose
Sucrose

I - Fermentation



Breakthrough technology :
direct fermentation to a gas

- No toxicity for production strains (product does not accumulate)
- Pre-purification by product volatilization

II - Purification



Combination of proven
petrochemical modules

- Simple
- Robust
- Cost efficient



Isobutene

Illustrations are not representative of current Global Bioenergies' installations

1. Bio-isobutene: Technology

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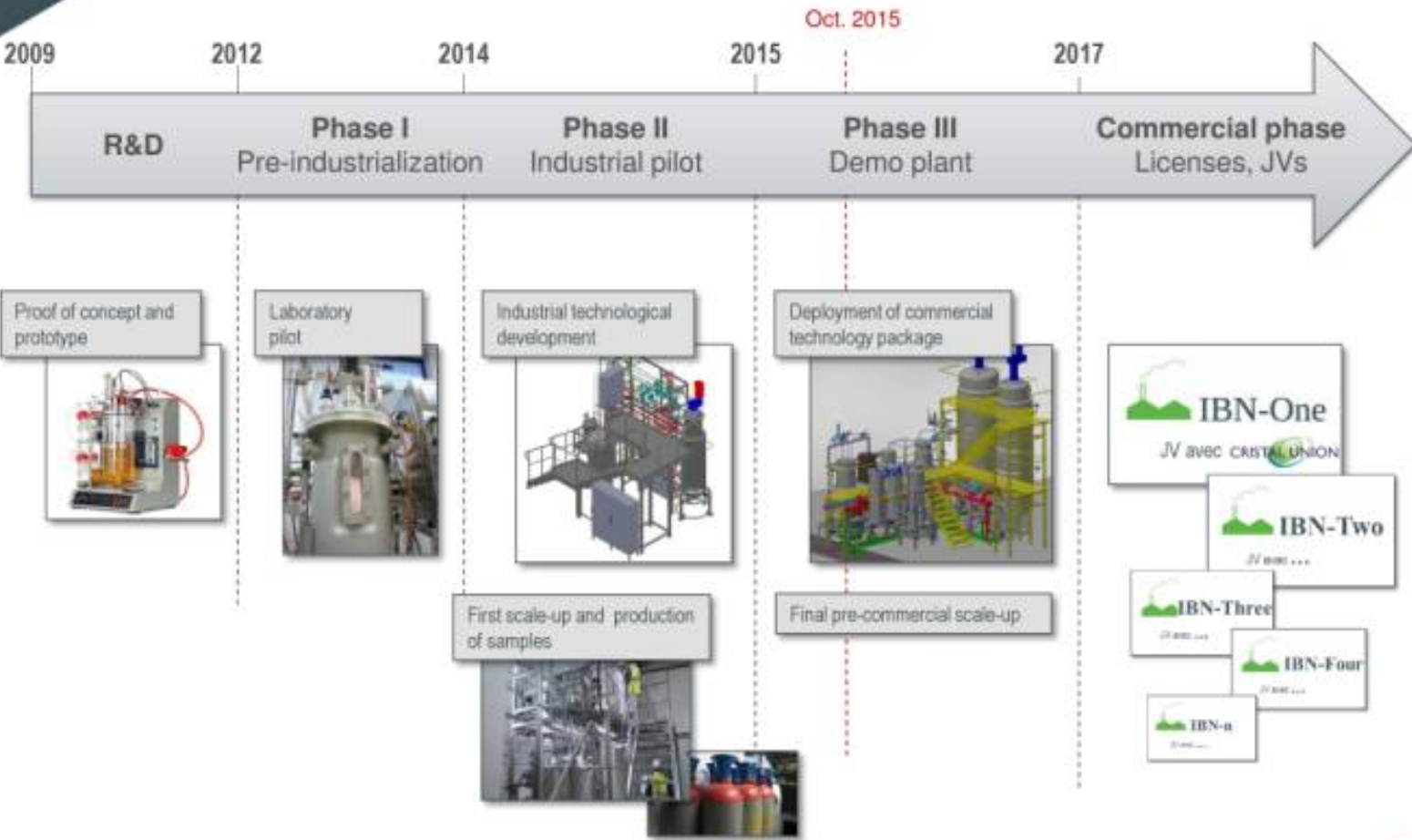
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Technological maturity



Phase II: Industrial pilot

Pomacle



10 tons/yr capacity

€10.5m program

€5.2m public financing



Consortium with **ARKEMA** and **CRIS**



Up and running since Nov. 2014

Operated by **ard**, a **CRISTAL UNION** affiliate



Purified isobutene shipped to **ARKEMA** and converted into e-gazoline for **Audi**



Phase III: Demo plant



Leuna

Capacity: 100 tons/yr

CAPEX: €10m

€5.7m public financing



€4.4m bank loan



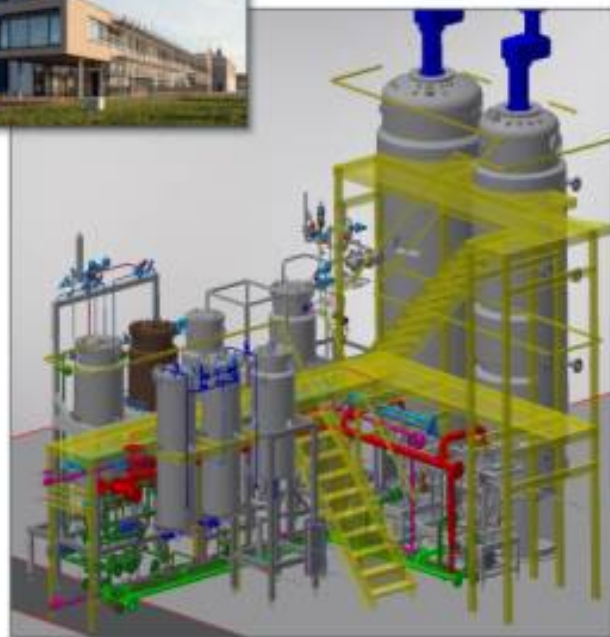
bpf finance

Engineering done by *Linde*

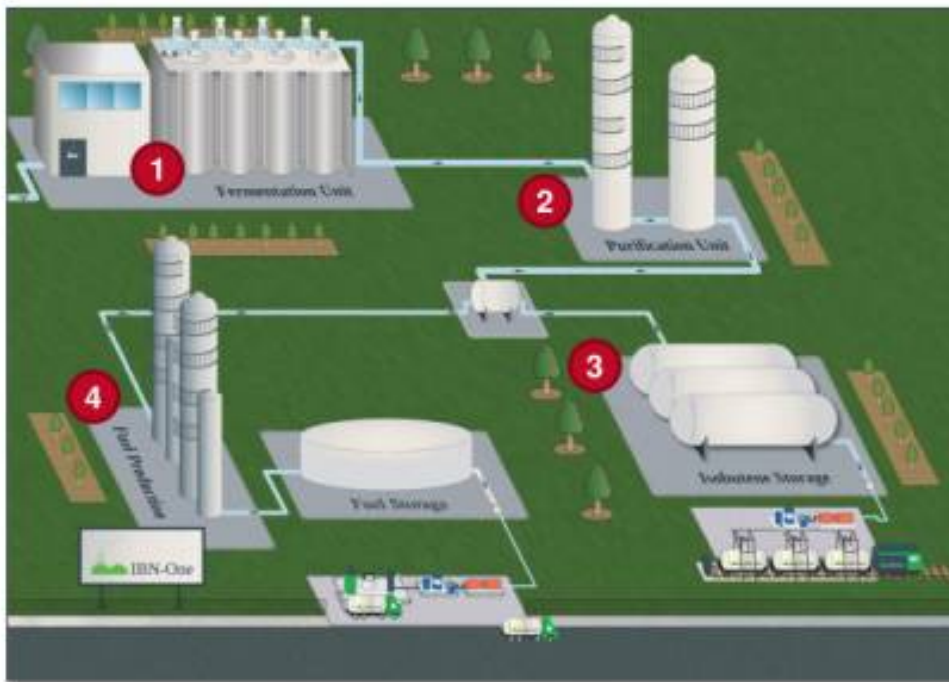
Construction started Q2 2015

To be operated with  **Fraunhofer**
CEP

First batch expected Q3 2016

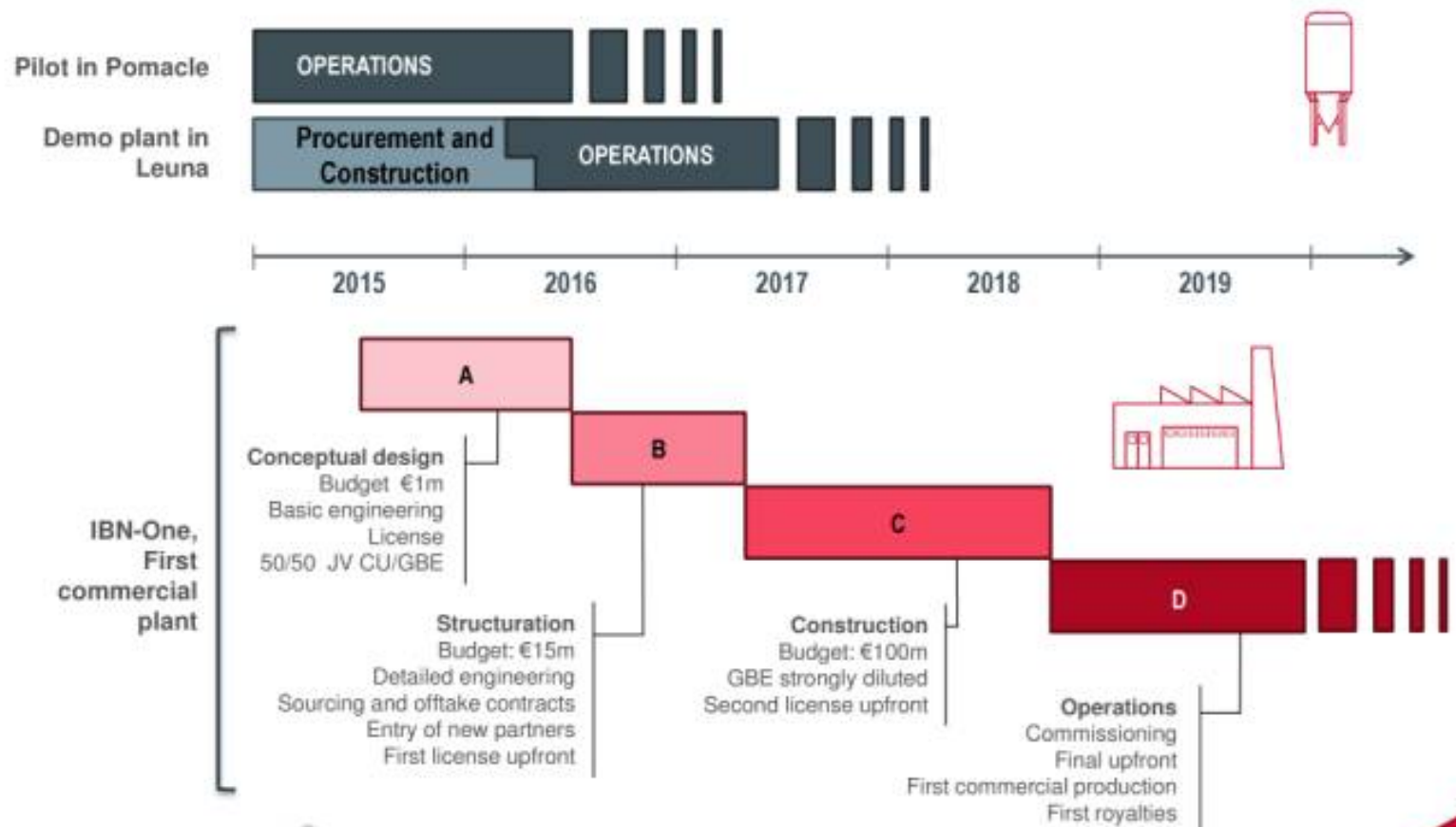


IBN-One: first commercial plant - conceptual design



- 1 200Kt sucrose are converted into 50Kt gaseous, low purity isobutene.
- 2 The purification unit isolates isobutene from surrounding fermentation gases.
- 3 Liquid high purity isobutene (99.7%) storage and shipping for chemical applications.
- 4 Part of the production is converted on site into high performance drop-in bio-gasoline.

Market access schedule



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First accessible market: chemistry and materials

Applications

Butyl rubber
1.0 Mt




Lubricants and additives
0.8 Mt



Organic glass (Plexiglass®)
0.4 Mt



Specialty chemicals (paints, cosmetics...)
0.3 Mt



US plant economic modeling



- A plant would be profitable in past and present market conditions
- Market growth: +4% CAGR expected between 2015 and 2020

Economic modeling of a US plant – July 2015

Costs	m\$/yr	Sales	m\$/yr
Feedstock 384Kt industrial grade sugar ¹	73	High purity isobutene ² 100Kt per year	126.5
Capex 206M\$ linear depreciation over 15 years	13.7		
Opex Wages, consumables, utilities...	23.7		
Licence (5% of turnover)	6.3		
Total	116.7	Total	126.5

The plant would be profitable even in current market conditions characterized by unusually low prices for oil derivatives

1: 190\$/t – US fermentable sugar cost derived from US ethanol prices July 2015 – Bloomberg and GBE calculations
 2: 1265 \$/tone – Argus DeWitt July 2015 data published in August.

US based plant: key financial indicators Hypotheses mean market values 2007 - 2014

Raw margin (5% license included)	15%
IRR* (Internal Rate of Return)	18%
NPV* (Net Present Value)	\$170m

Excellent financial indicators for the commodity
chemicals sector

Source : Company

* discount rate 10%, inflation 2%, duration 30 years, no terminal value

Second market: fuels



Renewable gasoline (US and EU)

- First wave of biofuels since 2000 in the USA and Europe
- 300 plants that produce 50 million tons ethanol
- 10% maximum concentration (blending wall)
- Second wave expected to increase from 10% to 20%
- A « drop-in » biofuel is required
- Only two technologies :
 - Isobutene → Isooctane (Global Bioenergies)
 - Isobutanol (Butamax/Gevo)
- Perspective for a large number of plants before the year 2030



Renewable Jet fuel

- Global Jet fuel market: 120Mt
- No market currently in place for bio jet fuel
- The sector is dedicated to developing the value chain
- Strong technical and regulatory constraints
- Limited competition:
 - Isobutene to Jet (Global Bioenergies)
 - Palm oil hydrogenation (Neste)
 - Farnesane (Amyris)
 - Alcohol to Jet (Gevo)

- No premium included in preceding models.
- However, for isobutene, one can anticipate:
 - Commercial premium: reduced environmental impact sought by industrial groups.
 - Technical premium: better performances in some applications.
 - Regulatory premium: legal obligation to blend biofuels, notably in Europe and in the United-States.

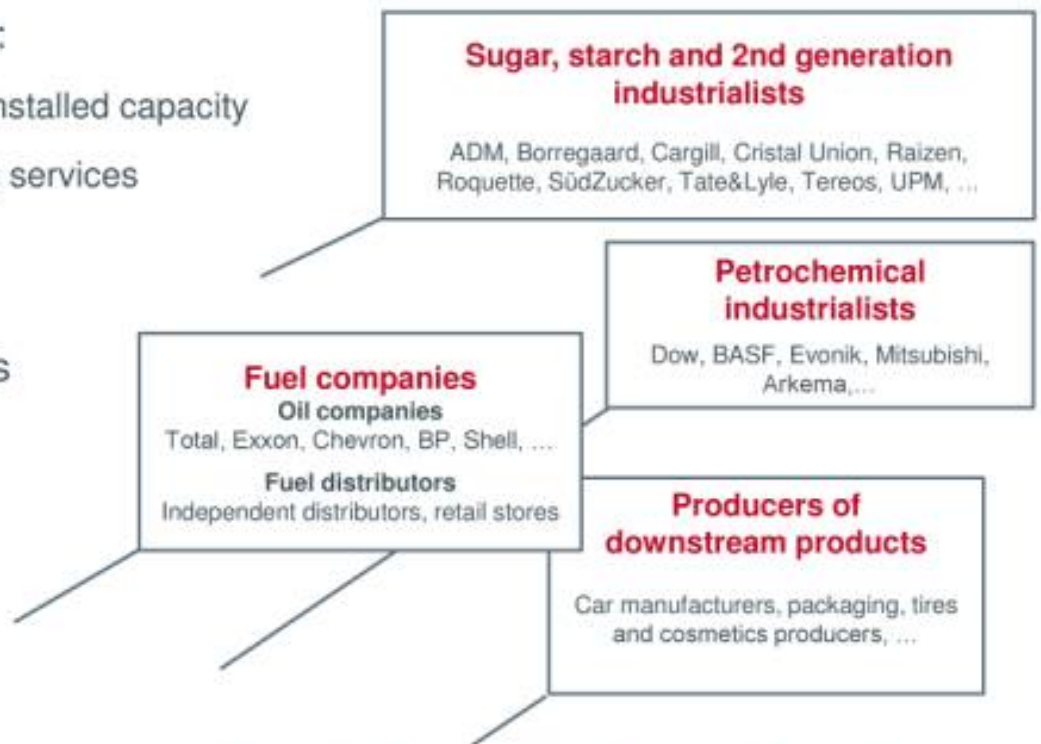
These premiums further improve the economic model

Licenses in major industrial sectors

License to operate a plant:

- Upfront €1m per 10Kt installed capacity
- Contracted engineering services
- Royalties 5% of sales

Portfolio of business cases in discussion with various industrialists



Possible grouping of actors in project companies similar to IBN-One

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R&D resources

Seasoned R&D team and Internationally renowned Scientific Advisory Board



Robotic optimization platform for artificial metabolic pathways and production strains







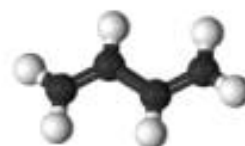
Unique platform for the development of gaseous fermentation processes



First axis: diversification of products

Butadiene
10Mt market
+3% CAGR

<p>Tires</p> <p>5.0 Mt</p> 	<p>Plastics</p> <p>2.0 Mt</p> 
<p>Rubber (non-tires)</p> <p>2.0 Mt</p> 	<p>Nylon & others</p> <p>1.5 Mt</p> 

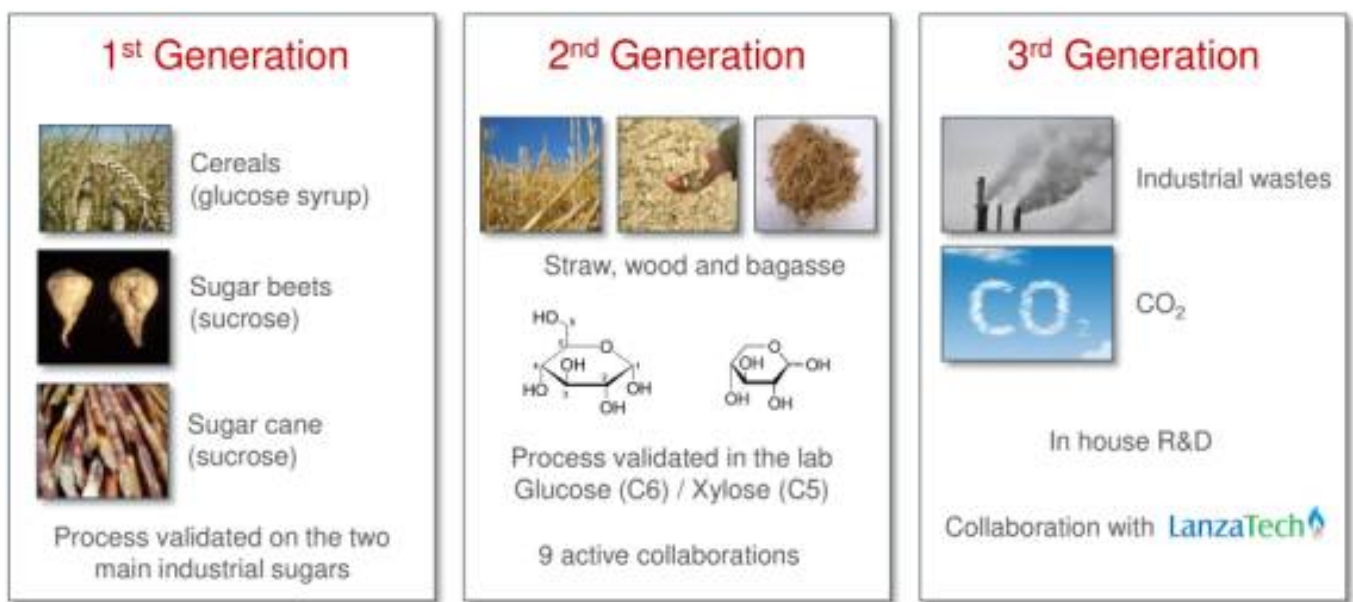


Propylene
90Mt market
+5% CAGR

<p>Plastics</p> <p>58 Mt</p> 	<p>Foams</p> <p>6 Mt</p> 
<p>Solvents</p> <p>7 Mt</p> 	<p>Others</p> <p>19 Mt</p> 



Second axis: diversification of resources



Cost of resource

Economic and environmental potential



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The people making it happen

Coordination Committee



Marc Delcourt
Chief Executive Officer



François-Henri Sahakian
Chief Financial Officer



Dr. Frédéric Pâques
Chief Operations Officer



Dr. Macha Anissimova
Chief Scientific Officer



Thomas Buhl
Head of Business Development



Bernard Chaud
Head of Industrial Strategy



Jean-Baptiste Barbaroux
Head of Corporate Development

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



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 is active in Venture Capital since 2000.

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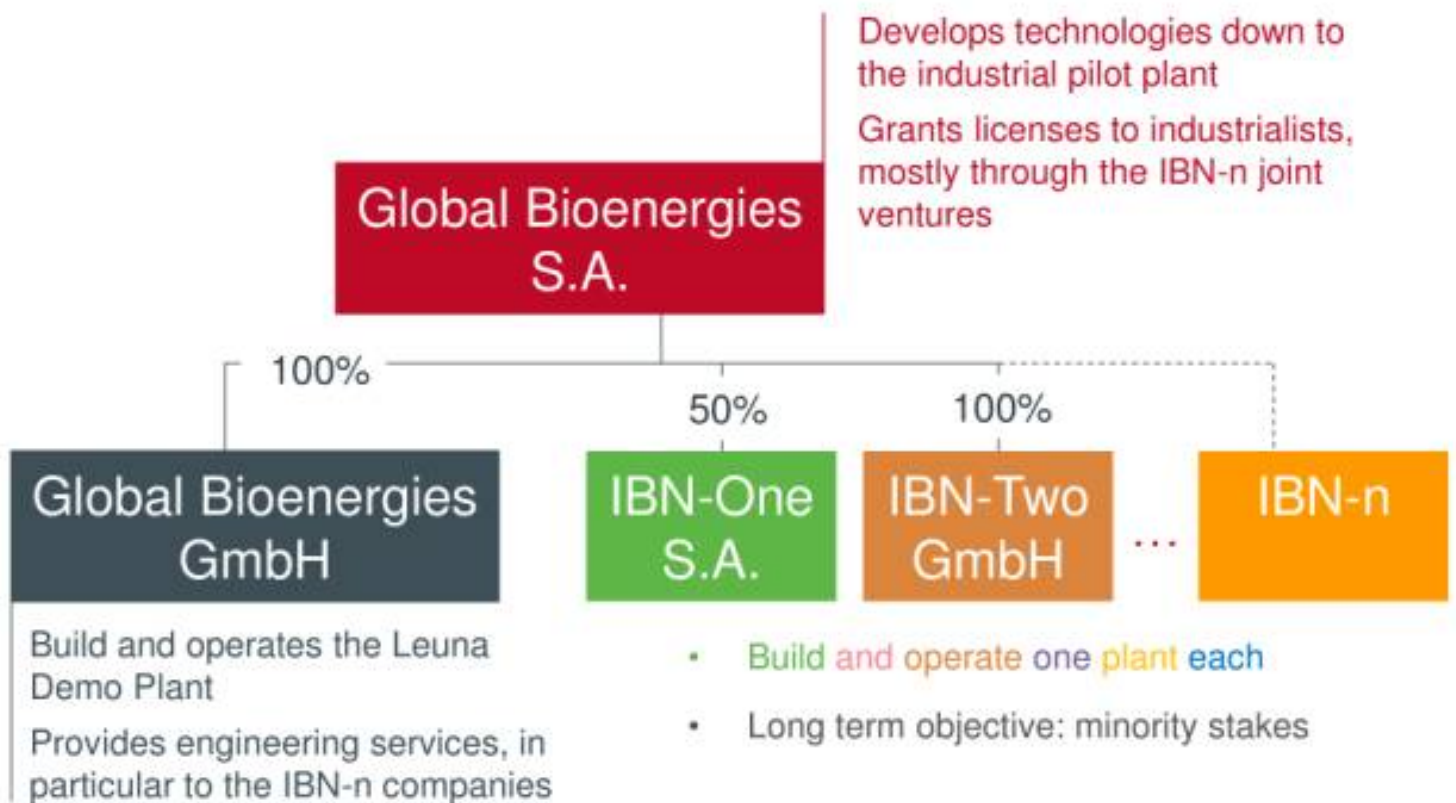
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Global Bioenergies: an industrial group under construction



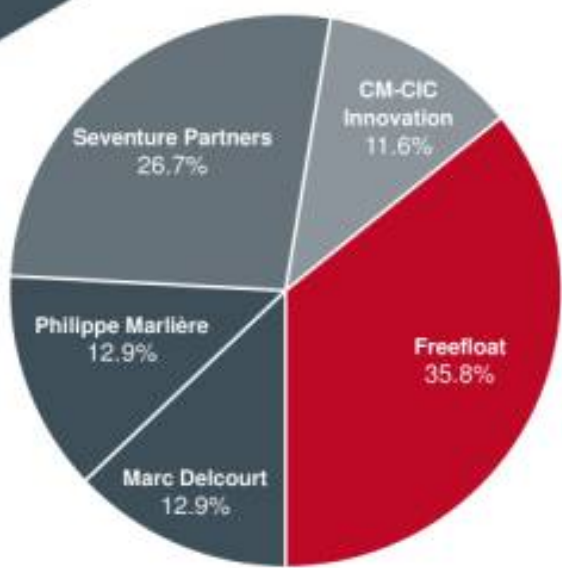
Simplified P&L

Consolidated figures for the Global Bioenergies group
(Global Bioenergies SA + 100%-owned Global Bioenergies GmbH + IBN-One SA + IBN-Two GmbH)

<i>In €'000 – audited</i>	S1 2015 (6m)	2014 (12m)	2013 (12m)
Operating Income	761	3 171	1 184
Operating Expenses	6 801	12 672	7 890
Operating Result	-6 040	-9 501	-6 706
Tax Credit on R&D	<i>NC</i>	1 876	1 413
Net Result	-6 129	-7 578	-5 211

Cash in hand:

- June 30th, 2015: €13,8m (audited)
- September 30th, 2015: €14.1m (non audited)



ALGBE
LISTED
NYSE
ALTERNEXT
FR 0011052257

Financial analysts:

- Gilbert Dupont (Paris)
- ODDO (Paris)
- Invest Securities (Paris)
- Edison (Londres)
- Baader (Munich)



- Successful process validation in industrial pilot (Phase II)
- Phase III: Demo plant construction underway – first production run Q3 2016
- Commercialization: Joint venture with Cristal Union (IBN-One) to finance, build and operate a first plant in France
- R&D pipeline
- High-level, international, multi-disciplinary team
- Profitability to be reached in 2019
- Intense news flow expected on the short and mid-terms

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