



*Becoming a pillar of the
energy and environmental
transition*

June 2016



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Industrial biology: a solution to the greatest challenges of our time

- Challenges:
 - **Climate change**: a major threat.
 - **Rising energy demand**: possible oil shortages as soon as 2017 (appendix 1).
- The world needs a new, less carbon-intensive, energy mix.
- Solutions:
 - **Renewable electricity** (hydro, wind, solar) for domestic and industrial uses, rail, short range road transport.
 - **Industrial biology** : Biofuels (long range road transport, air transportation) and Biomaterials (plastics, rubbers, chemicals...)



Industrial Biology

- Industrial biology aims at converting renewable resources into chemicals, with applications in fuels and materials.
- Hundreds of ethanol plants built worldwide in the last two decades.
- Innovative processes to other molecules challenged by overly complex purification schemes.
- Need of better biofuels and renewable commodity chemicals remains unmet.
- Global Bioenergies' standout offer:
 - A unique gaseous fermentation process with very simple purification scheme.
 - A platform drop-in molecule, easily converted into biogasoline, biokerosene and various biomaterials.
 - A mature technology, with the potential for numerous plants in the short term.

Global Bioenergies investment highlight

- Why invest in GBE ?
 - A mature technology with a huge industrial potential.
 - A breakthrough innovation bypassing the limitations of the field.
- Why now ?
 - Attractive price: the oil glut has pushed down the value of all industrial biology companies.
 - Now that the oil glut is over, the market environment should bring an upward trend and the whole sector should take take off.
 - Global Bioenergies is now entering into its commercial phase, with many industrial deals expected on the short term.

1. Technology

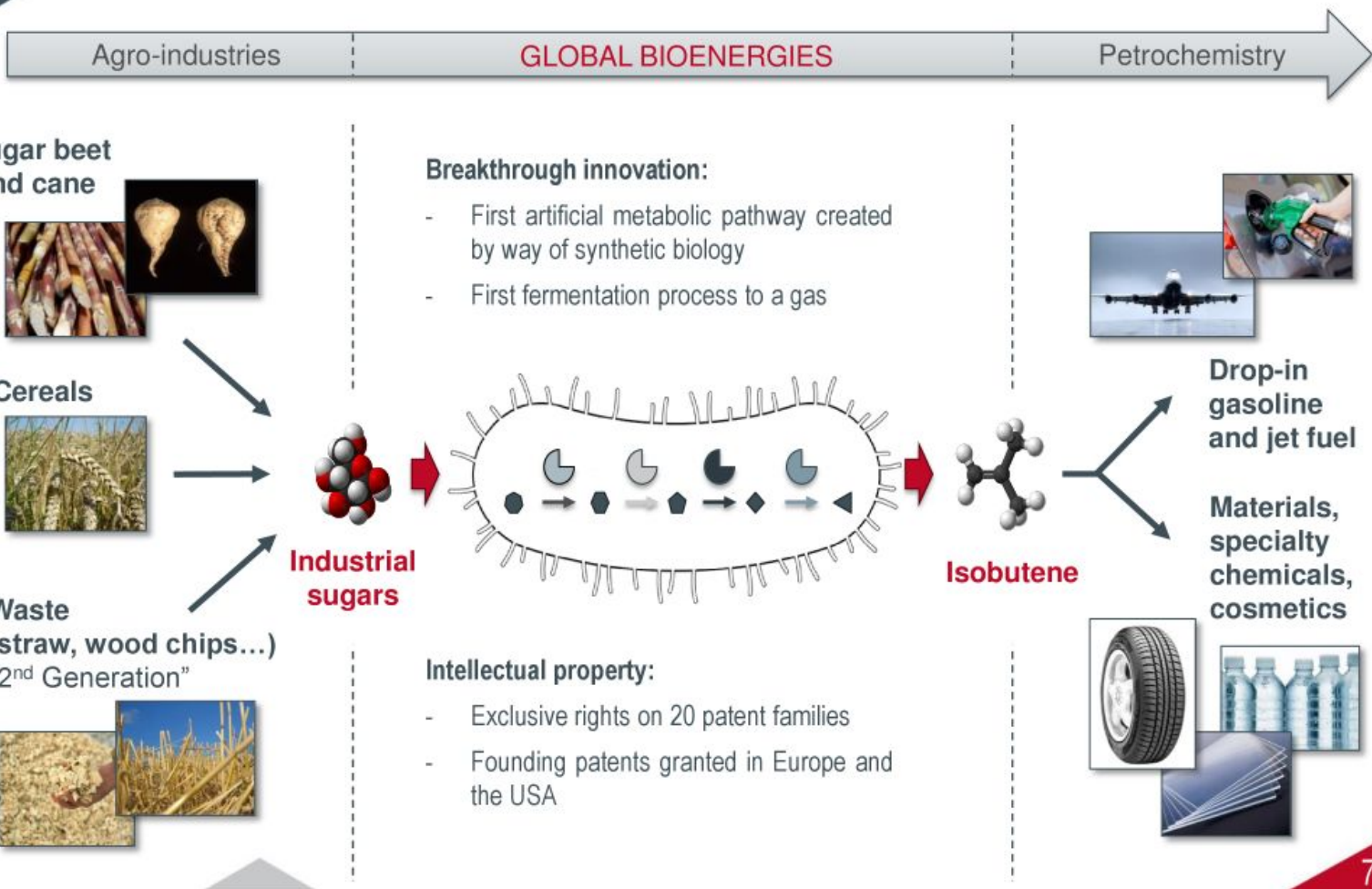
2. Markets and business model

3. Team

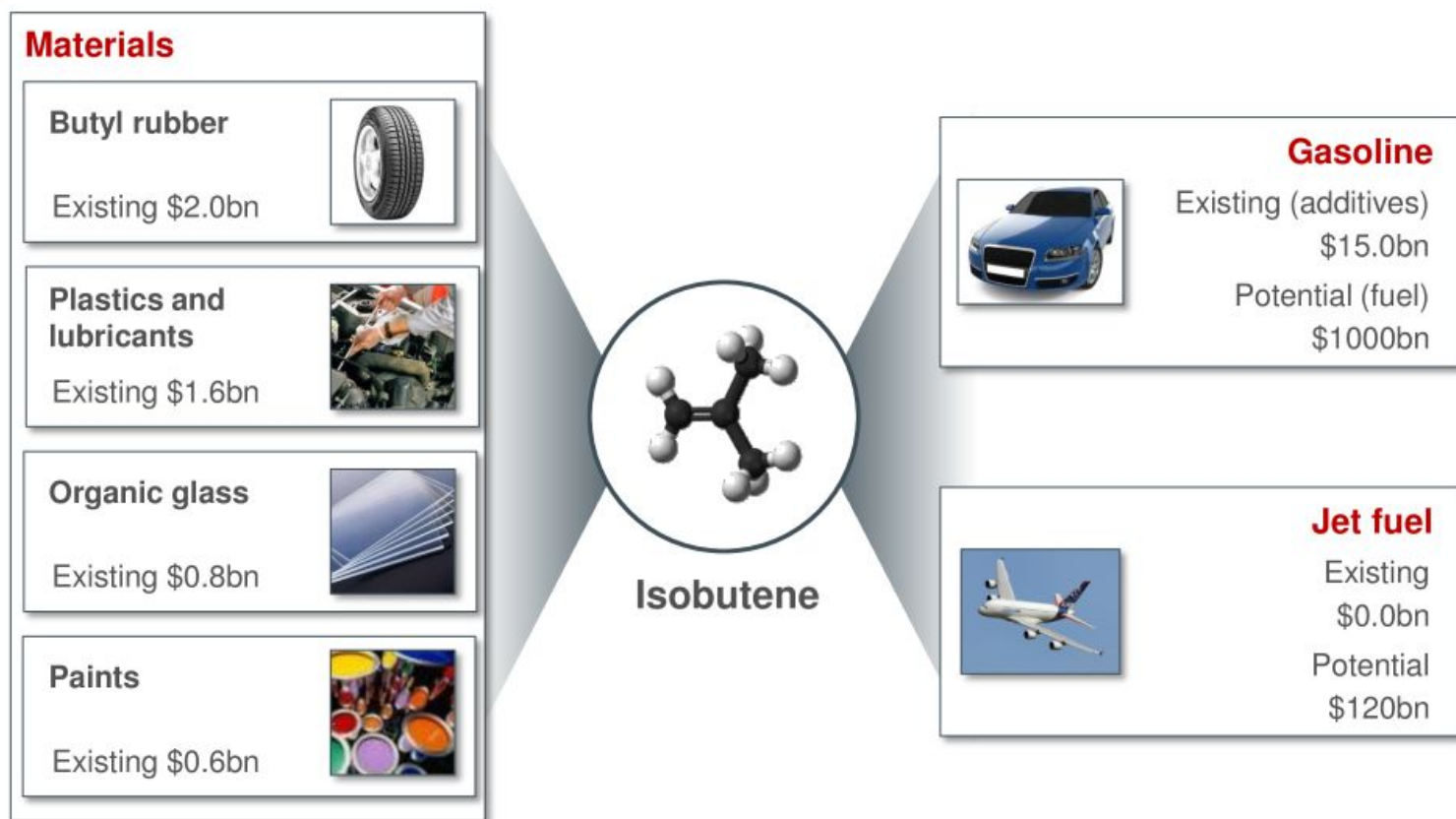
4. R&D pipeline

5. Financials

Converting renewable resources into fuels and materials

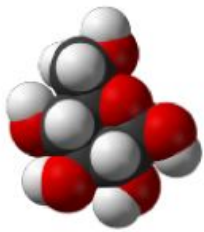


Isobutene: a key petrochemical market



Existing market for fossil isobutene >\$20bn with vast further market potential

A simple and robust two-steps technology



Glucose
Sucrose

I - Fermentation



Breakthrough technology: direct fermentation to a gas

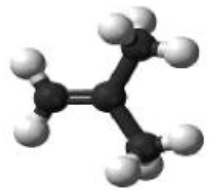
- No toxicity for production strains (product does not accumulate)
- Pre-purification by product volatilization

II - Purification



Combination of proven petrochemical modules

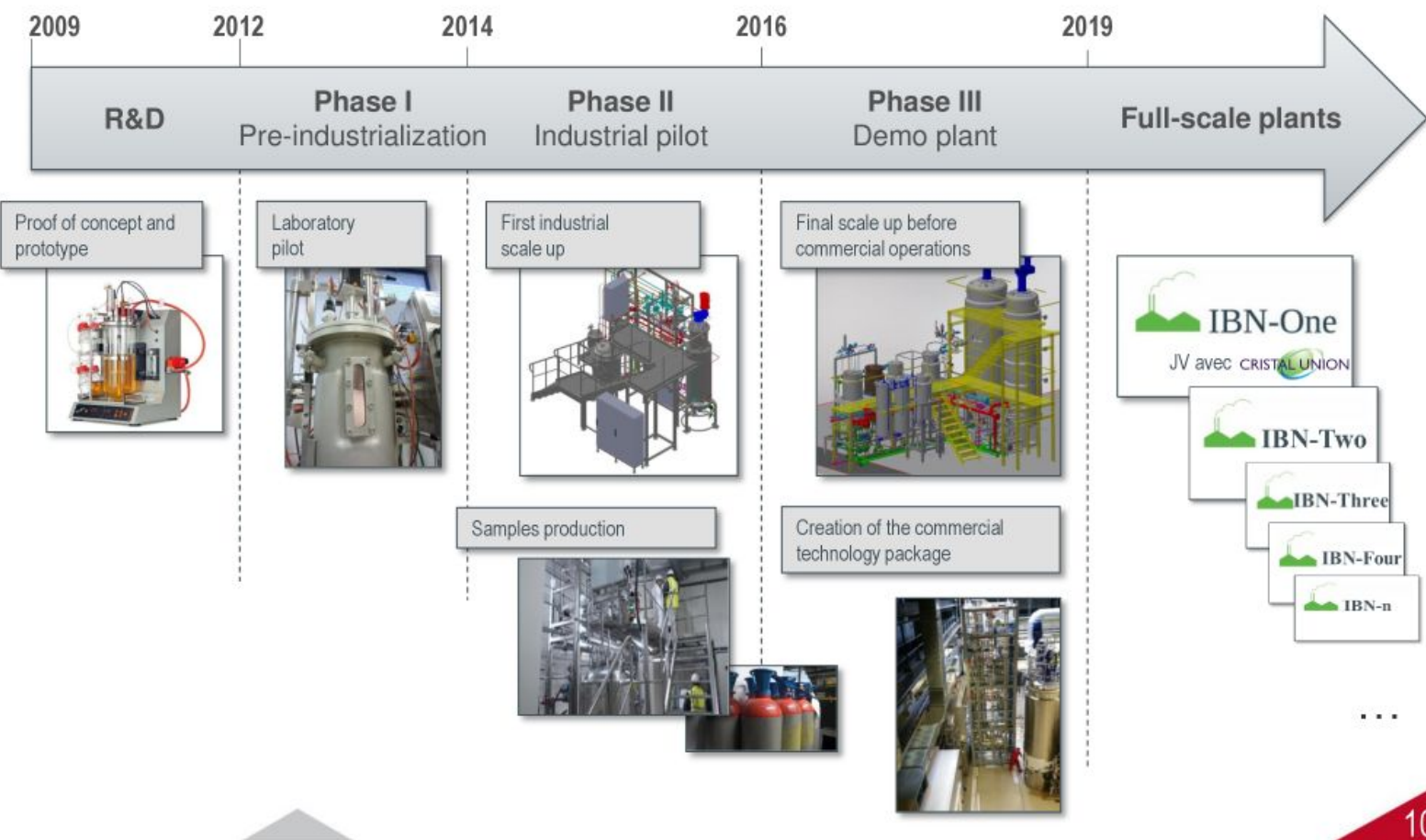
- Simple
- Robust
- Cost efficient



Isobutene

Illustrations are not representative of current Global Bioenergies' installations

A technology approaching commercial maturity



Evry: Headquarters, R&D, lab piloting

Evry
55 employees

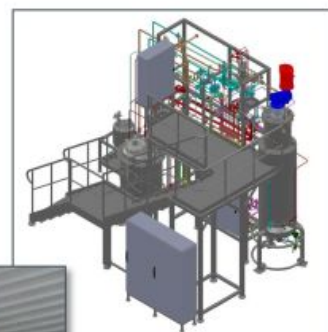


Unique technology platforms oriented toward
gaseous fermentation



Pomacle: Industrial pilot

Pomacle



10 tons/yr capacity

€10.5m program

€5.2m public financing



Consortium with **ARKEMA** and **CNRS**

Up and running since Nov. 2014

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

Purified isobutene shipped to numerous industrialists

Conversion into e-gasoline for **Audi**

Yield > 70% of commercial target



Leuna: Demo plant

Capacity: 100 tons/yr

CAPEX: €10m

€5.7m public financing

€4.4m bank loan



Engineering done by *Linde*

Construction completion expected Q3 2016

To be operated  **Fraunhofer**
CBP

First ton expected Q4 2016

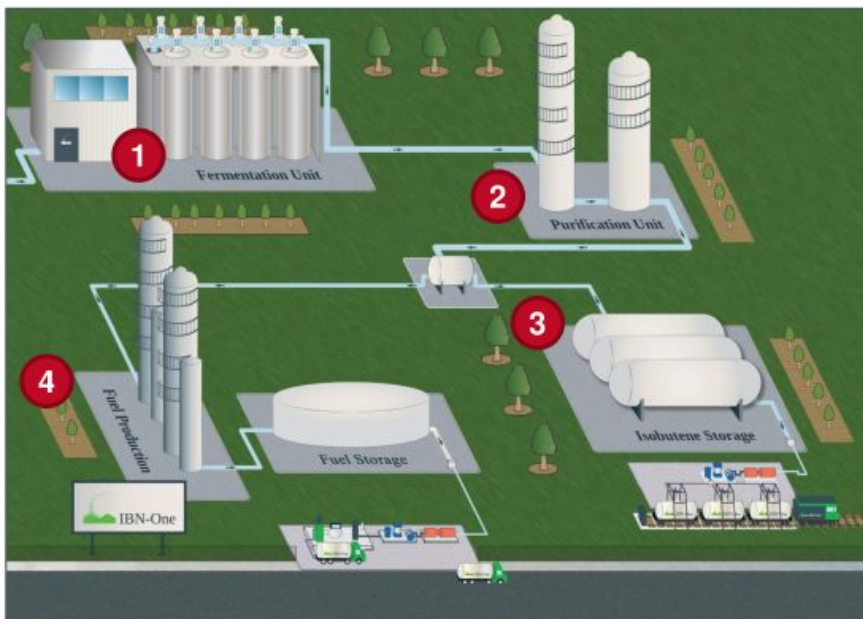


Leuna



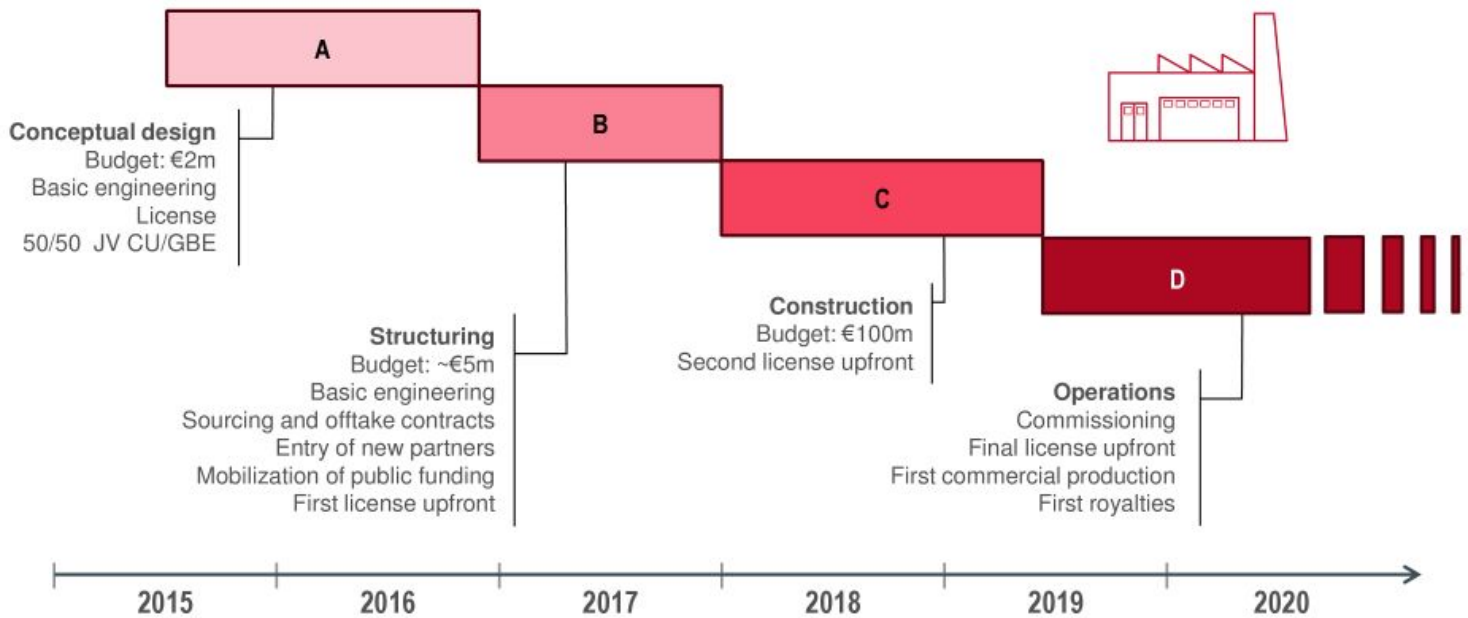
First commercial plant

Champagne
region



- 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.

IBN-One Schedule, funding and partnerships



- Public funding:

- €9m reimbursable advances from the French Governmental *Investissements d'Avenir* program shared between IBN-One and Global Bioenergies over 2016-2019.
- Partnership with Cristal Union and L'Oréal.



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6. Conclusion

First market: chemistry and materials

Applications

Butyl rubber 1.0 Mt	
Lubricants and additives 0.8 Mt	
Organic glass (Plexiglass®) 0.4 Mt	
Specialty chemicals (peintures, cosmetics...) 0.3 Mt	

Mt: million tons

High purity Isobutene price



- A vast panel of applications from rubbers to cosmetics
- Market growth: +4% CAGR expected between 2015 and 2020

Sources: Argus DeWitt, IHS, SRI, Global Bioenergies ; for 2015: January - August

Second market: renewable gasoline

- First wave of biofuels since 2000 in the USA and Europe:
 - 300 plants produce 50 million tons of ethanol
 - 10% maximum blending in gasoline (« blending wall »)
- Second wave of biofuels expected to increase blending from 10% to 20%
- Requirement for a « drop-in » biofuel, i.e. having no blending limitation
- Only two technologies:
 - **Isobutene → Isooctane (Global Bioenergies)**
 - Isobutanol (Butamax/Gevo)
- The perspective for numerous plants



Partnership with



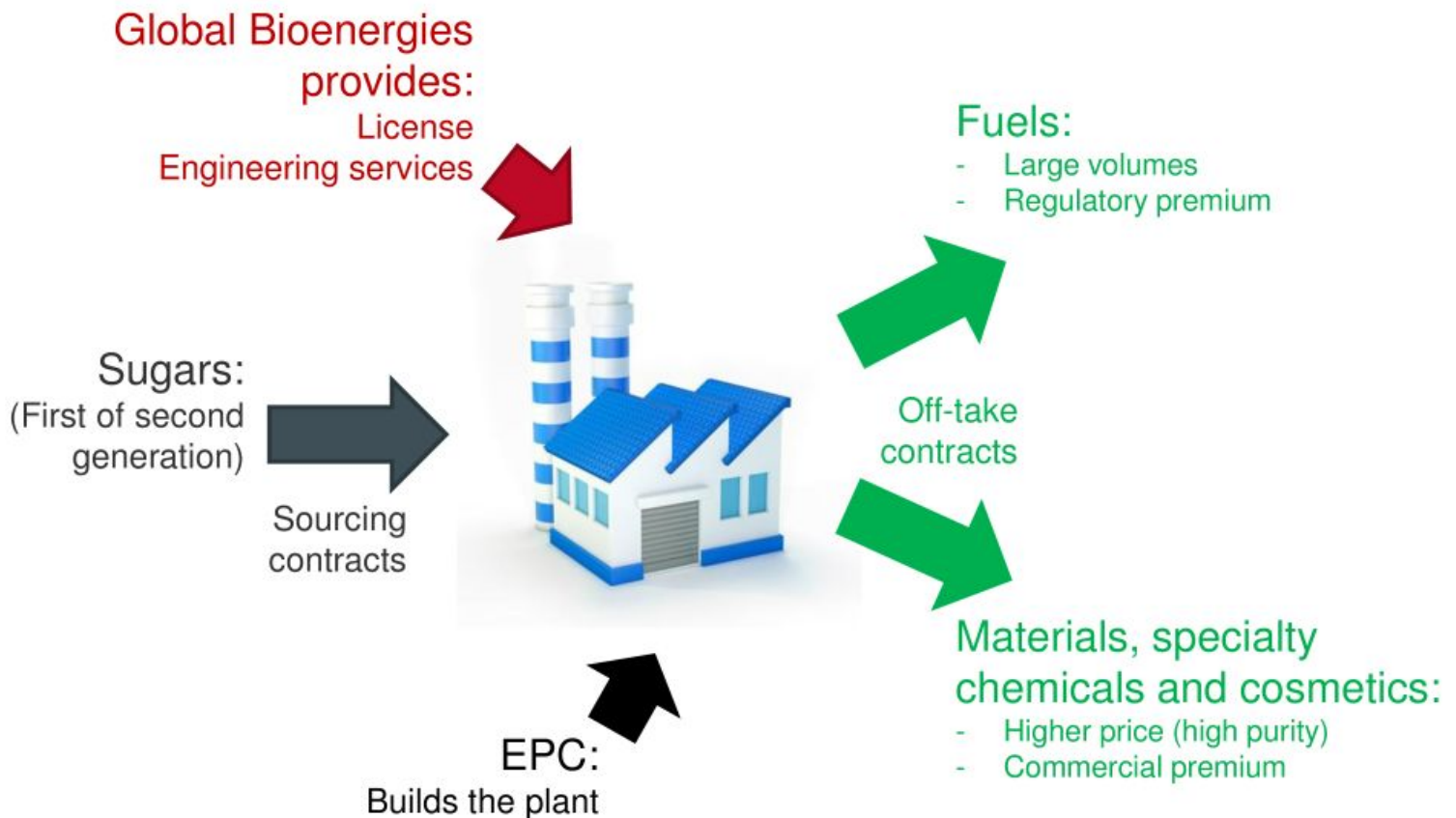
- Audi aims to produce renewable low impact gasoline ('e-gasoline').
- Audi will be the first car manufacturer to offer its clients the possibility to drive 100% on an alternative fuel.
- A system of offsets:
 - Audi's client purchases standard oil-derived gasoline at a petrol station.
 - The client's car sends a signal to Audi's headquarters.
 - Audi produces the equivalent amount of e-gasoline and delivers it to a fuel depot where it can be used by other consumers.
 - Audi's client has thereby indirectly consumed e-gasoline.
- This requires a 'drop-in', ready-to-blend fuel which explains Audi's choice of Global Bioenergies' isooctane.

Third market: bio jetfuel

- Global jetfuel market: 120 million tons
- Bio-jetfuel not existing commercially at present
- High technical and regulatory constraints
- Limited competition:
 - **Isobutene → Jetfuel (Global Bioenergies)**
 - Palm oil hydrogenation (Neste)
 - Farnesane (Amyris)
 - Alcohol to Jet (Gevo)
 - Fischer-Tropsch (Fulcrum)
- Strong will from the aviation industry → mandates associated to tax incentives expected in the mid-term



A typical plant's ecosystem



Economic model of a US chemicals plant

Costs	m\$/yr	Sales	m\$/yr
Feedstock 384Kt industrial grade sugar ¹	108	High purity isobutene ² 100Kt per year	182
Capex 206M\$ linear amortization over 15 years	13.7		
Opex Wages, consumables, utilities...	23.7		
License (5% of sales)	9.1		
Total	154.5	Total	182

Average values 2007-14

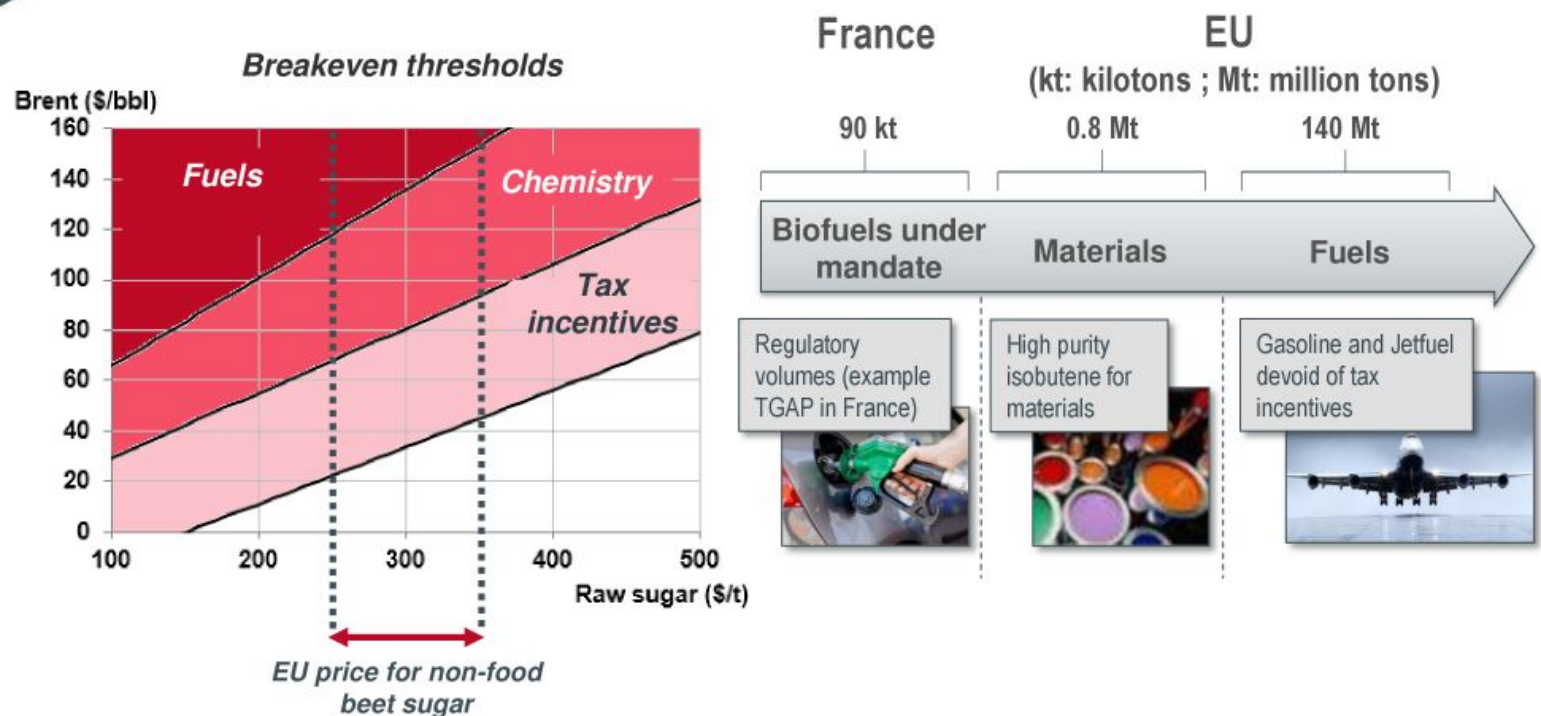


Raw margin (5% license included)	15%
IRR* (Internal Rate of Return)	18%
NPV* (Net Present Value)	170M\$

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

1: 280 \$/t – US fermentable sugar cost derived from ethanol prices – 2007-2014 average – Bloomberg and GBE calculations
2: 1820 \$/t – Argus DeWitt - 2007-2014 average

Generic EU plant - profitability study



- Drop-in biofuels (EU mandate) + high purity isobutene
- Profitable in the 60-80\$/barrel range, depending on sugar price hypothesis and country specific tax incentives

Business development targets

- **European sugar producers:** additional outlets to compensate the predicted overproduction resulting from the end of quotas.
- **US starch producers:** additional outlets to compensate the contraction in glucose demand resulting from global move to low-carb diet.
- **Scandinavian pulp and paper producers:** additional outlets to compensate the collapse in paper demand.
- **Chemical manufacturers and brand owners:** renewable materials to obtain a « green premium ».
- **Fuel distributors:** drop-in solutions to overcome the 10% ethanol blend wall.

The 'commercial phase' is starting now

- Increase in industrial credibility resulting from Leuna and IBN-One.
- Numerous incoming calls from prospects in various locations.
- 5 concrete business opportunities in North America. Short term objectives:
 - First term sheet on a plant construction project.
 - Intentions from potential off-takers.
 - Progresses with government bodies on the financing (loan guarantees...).

Industrial partnerships

Since 2011



France's #2 sugar and ethanol producer

Shareholder and Partner in IBN-One JV

Since 2011



Leading European rubber manufacturer

Shareholder and Partner on Butadiene

Since 2012



Audi

Leading German car manufacturer

Collaboration on 'e-gasoline' development

Since 2013



France's #1 chemicals company

Collaboration on methacrylic acid

Since 2016



World's #1 cosmetics company

Collaboration on cosmetic applications of Isobutene

Test samples shipped to many industrialists, including



World's #1 Butyl rubber manufacturer



France's LPG industry consortium, gathering Butagaz, Primagaz...

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2. Markets and business model
- 3. Team**
4. R&D pipeline
5. Financials
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Marc Delcourt
Chief Executive Officer



François-Henri Reynaud
Chief Financial Officer



Macha Anissimova
Chief Scientific Officer



Frédéric Pâques
Chief Operations Officer



Thomas Buhl
Head of Business Development



Bernard Chaud
Head of Industrial Strategy



Jean-Baptiste Barbaroux
Head of Corporate Development



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

Management team

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.

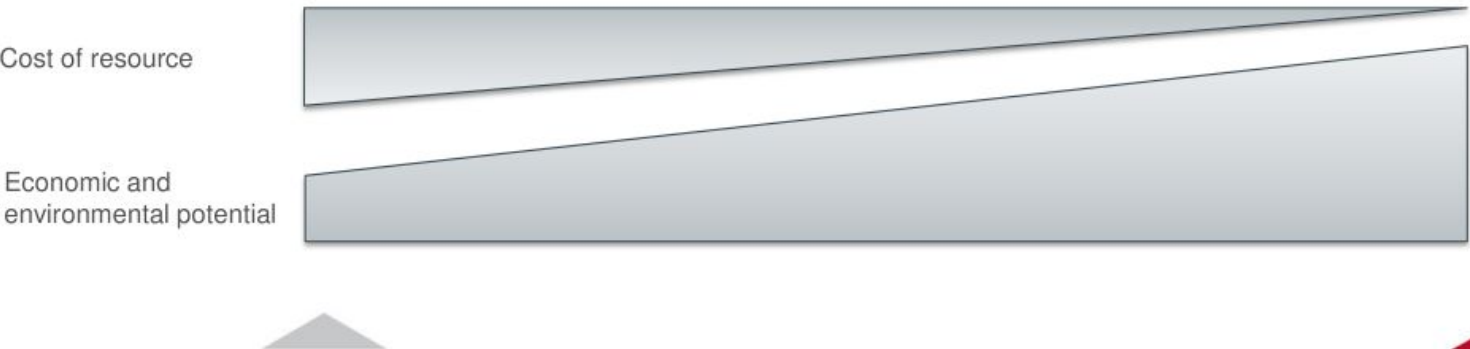
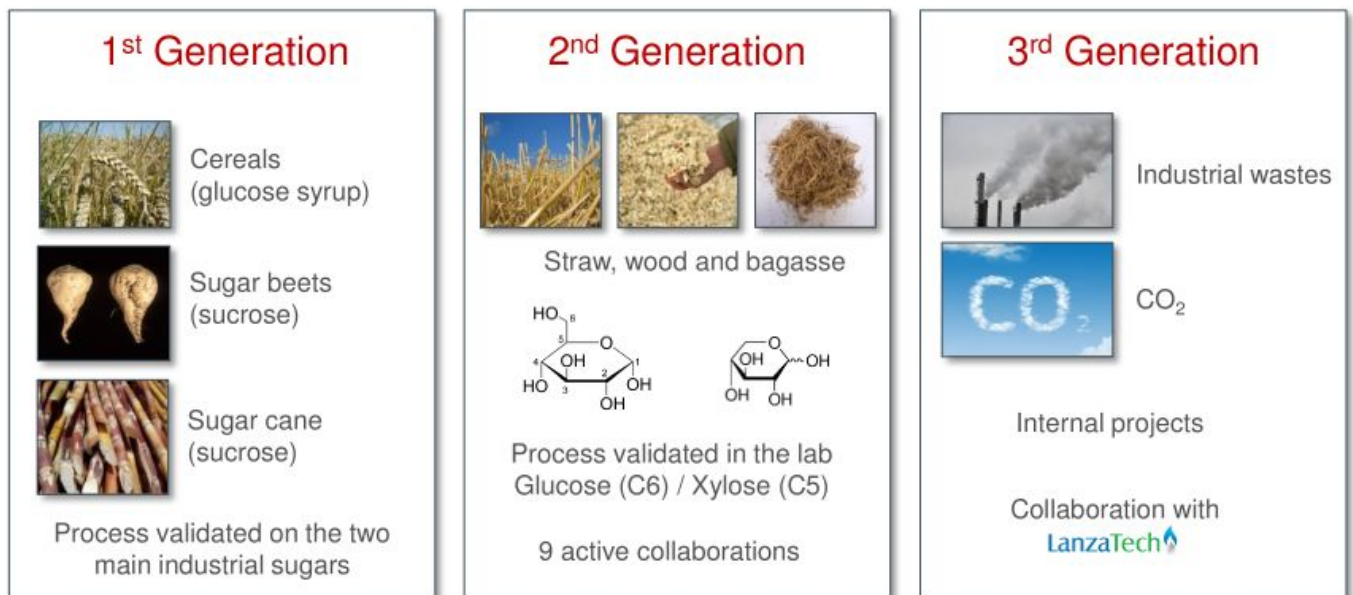


Karine Lignel – Director at CM-CIC Investissement

A trained engineer active in Venture Capital since 2000.

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R&D first axis: diversification of resources



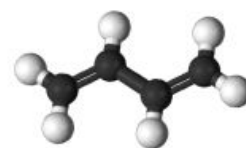
R&D second axis: diversification of products

Butadiene

In collaboration with



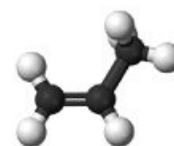
Tires 5.0 Mt		Plastics 2.0 Mt	
Rubber (non-tires) 2.0 Mt		Nylon & others 1.5 Mt	



**10Mt market
+3% CAGR**

Propylene

Plastics 58 Mt		Foams 6 Mt	
Solvents 7 Mt		Others 19 Mt	



**90Mt market
+5% CAGR**

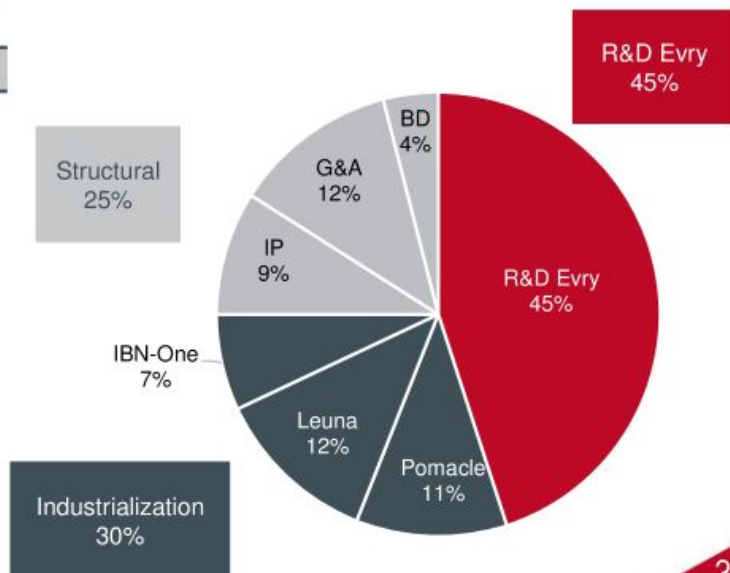
Sources: Argus DeWitt, Company, IHS, SRI, ICIS

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Group P&L

<i>In € thousand - audited</i>	01/01/15 to 31/12/15 12 months	01/01/14 to 31/12/14 12 months
Operating income	2 228	3 171
Operating expenses	<u>-14 240</u>	12 672
Operating profit (loss)	-12 013	-9 501
Financial income	-258	130
Exceptional profit (loss)	-109	-83
Income tax	-1 985	-1 876
Net profit (loss)	-10 395	-7 578

*Details of operating
charges 2015*



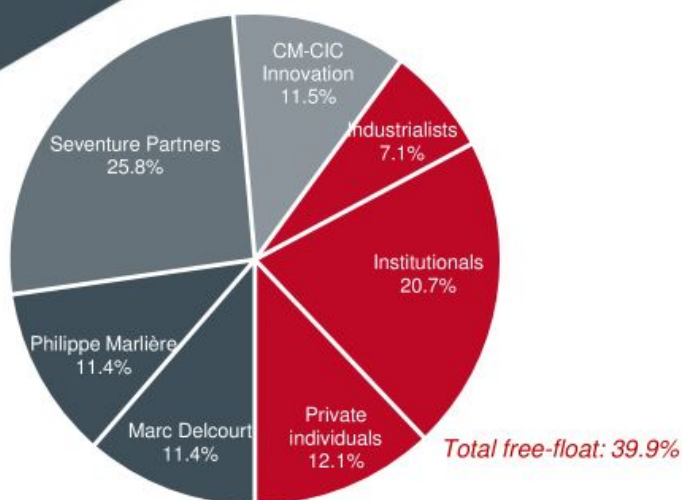
Group Balance Sheet

Assets (€ thousand)	31/12/15	31/12/14	Liabilities (€ thousands)	30/12/15	31/12/14
Intangible assets	106	137	Capital	37 959	36 148
Assets	7 230	3 721	Retained earnings	-19 665	-12 087
Financial assets	142	110	Profit (loss)	-10 395	-7 578
NON-CURRENT ASSETS	7 478	3 968	EQUITY	7 899	16 483
			PROVISIONS	30	28
Inventories, receivables, prepaid expenses	4 313	4 922	Conditional advances and loans	10 440	4 162
Cash	10 418	15 658	Trade payables and related accounts	3 181	2 395
CURRENT ASSETS	14 731	20 579	Other debts	660	1 479
TOTAL ASSETS	22 209	24 547	PAYABLES	14 281	8 036
			TOTAL LIABILITIES	22 209	24 547

Cash in hand as of 01/01/16: €10.4m (audited)

[Strengthened in January 2016 by a €6.5m private placement]

Equity



Financial analysts	
Gilbert Dupont (Paris)	Edison (London)
ODDO (Paris)	Baader (Munich)
Invest Securities (Paris)	

ALGBE
LISTED
NYSE
ALTERNEXT

FR 0011052257



Existing shares as at 30/05/16: 3 155 128
Dilutive instruments (stock-options, equity line...): 385 710

Fully diluted: 3 540 838

Average daily liquidity	
2012	€16 k
2013	€32 k
2014	€77 k
2015	€96 k



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Summary

- Global Bioenergies intends to become a pillar of the energy and environmental transition
- Renewable hydrocarbons: mature technology supported by top-level industrialists facing surprisingly small competition
- Drivers:
 - Environmental: reduction of CO₂ emissions
 - Energetic: preparation of the “after-oil” in a timely rebalancing market
 - Strategic: energy independence
 - Economic: re-industrialization of rural areas
- The 2013-16 phase mostly focused at scaling-up the process
- Next 2017-19 phase mostly dedicated to commercialization of the process

An intense newsflow expected in the short term

1. Leuna

- Start-up of production
- Production of a first large batch of e-gasoline for Audi, first cars on the roads
- Off-take from various industrialists

2. IBN-One

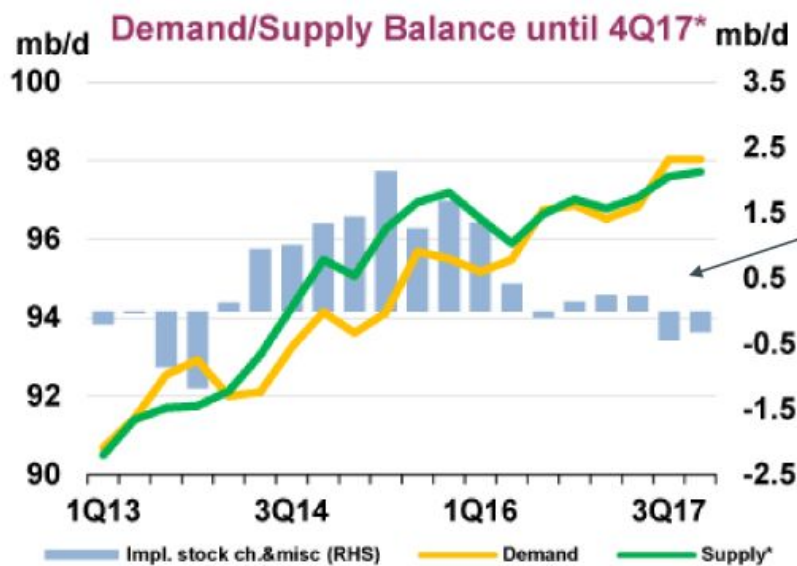
- €5m financing, including new investor, to run the basic engineering phase
- First off-take agreements

3. Concrete emergence of a commercial project in North America

4. Numerous agreements with industrial leaders

Appendix

Oil market (1/2): IEA says oil glut will end soon



Balanced market expected in Q3 and Q4 2016

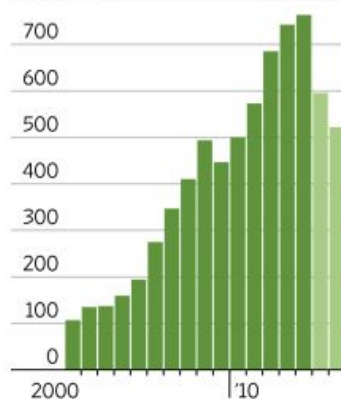
- The International Energy Agency (IEA) monthly report published on the 12th of May confirms that the oil market is rebalancing quickly

Oil market (2/2): Rystad Energy predicts a massive shortage in 2017-18

Feeling the Pinch

Global capital spending on oil-and-gas exploration and production

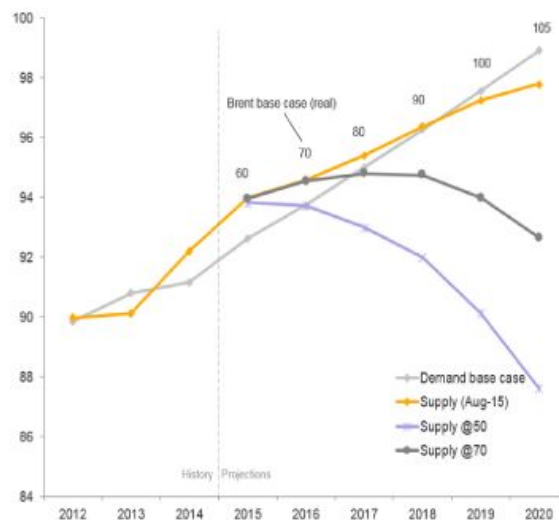
\$800 billion



Note: 2015 and 2016 figures are estimates.
Source: Rystad Energy

THE WALL STREET JOURNAL.

Global liquids supply and demand
Million bbl/d



Source: Rystad Energy's Global Oil Market Trends Report, August 2015

- The huge reduction in exploration-production investments prepares for a progressive shortage from 2017 and would lead to a strong rebound in oil price.

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