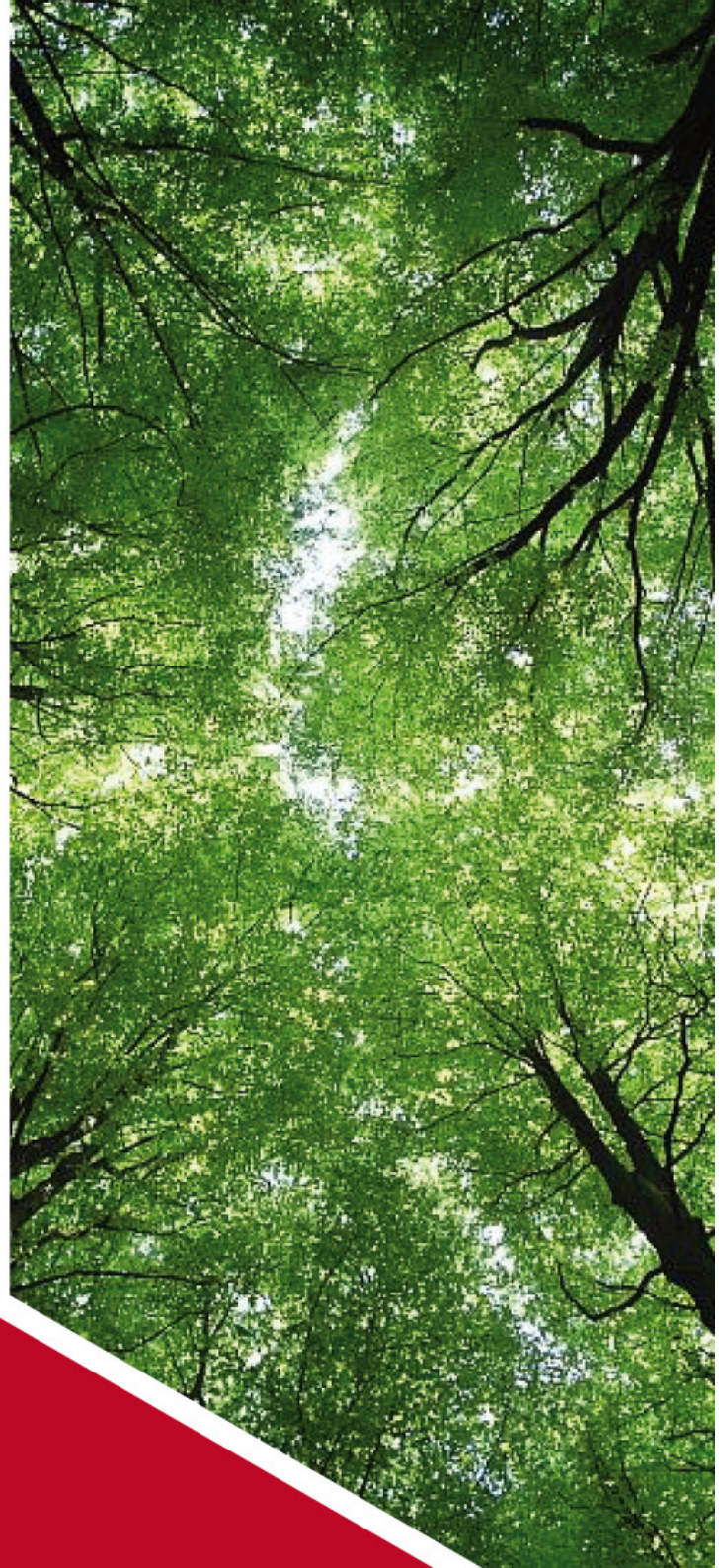
GLOBAL BIOENERGIES

A concrete, mature and scalable solution to reduce global and local emissions

September 2018

Listed on Euronext Growth: ALGBE



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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.

These factors include, among other things, commercial, technical and other risks e.g. associated with estimation of the price of carbohydrate resources, the meeting of development objectives and other investment considerations, as well as other matters not yet known to the Company or not currently considered material by the Company.

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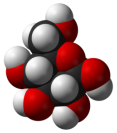
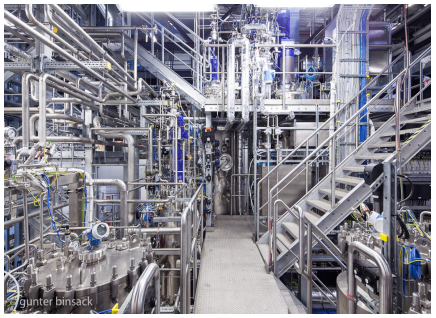
Our carbohydrate-to-hydrocarbon fermentation process

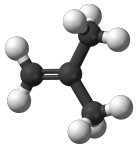
Industrial sugars



Our fermentation process



High value renewable isobutene



Well established chemical units

High performance renewable gasoline and jet fuel

High value bio-based materials and cosmetics

- Our process:
  - Engineered bacteria based on a novel synthetic biology approach
  - Fermentation process to a gas, bringing game changing operational advantages

Executive summary

1. A unique Science, based on an innovative Synthetic Biology approach. Strong IP position.

2. The technology is now mature: High performances reached. Scale-up in progress.

3. First commercial plant at sight. Will bring GBE to breakeven.

4. Potential to broadly deploy the technology worldwide beyond first plant.

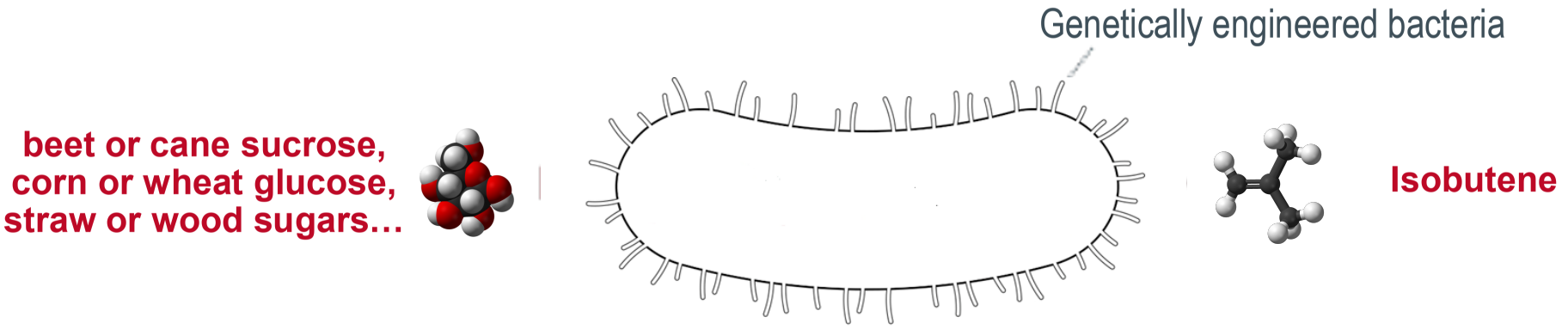
5. Significant reduction in CO2 emissions, and improvement of air quality in cities.

6. Why invest now? Intense newsflow and value creation expected in the short term.

Each of these elements is explained in the next 6 slides, and then detailed in the appendix section.

1. Unique Science and strong IP

- We taught bacteria to convert sugars into isobutene, a gaseous 4-carbons building-block molecule traditionally derived from fossil oil (>15 million tons/yr)



- Huge technology barrier overcome: isobutene is not produced in Nature - No biological starting point… We created an artificial metabolic pathway, first ever.
- Fermentation to a gas brings key benefits: abrogation of product-to-strain toxicity and simple purification scheme. Now validated.
- Metabolic and chemical engineering breakthroughs covered by an IP fortress surrounding a know-how citadel.

2. The technology is now mature

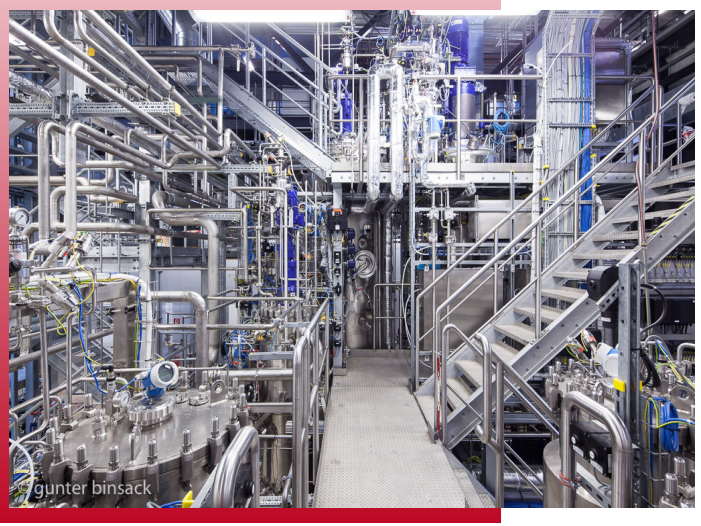
- 2018: Major breakthroughs achieved at lab-scale on yield and productivity.
- Lab-scale 2017 performances reproduced at demo-scale.
- First ton produced in 2017.
- Product development initiated: engine testing shows robust decrease in particles emissions.

Commercial Plants

2012
R&D in Evry, France
40L

2015
Pilot plant in Pomacle, France
500L

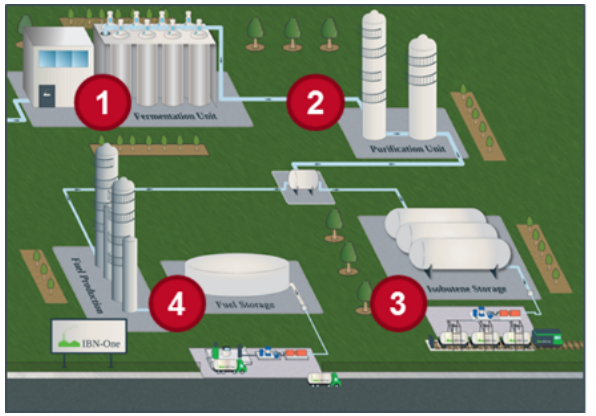
2017
Demo plant in Leuna, Germany
5,000L
i.e. 100 tons per year capacity



3. First commercial plant in sight

- IBN-One: Joint-Venture with Cristal Union
  - Engineering entrusted to Technip and IPSB
  - >€100m Capex for a 50,000 tons/year capacity
- IBN-One progressing with fundraising plan
- High profitability potential
  - First-of-a-kind plant means residual technology risk…
  - …offset by first mover's advantage: high value niche markets (Cosmetics…)
- GBE intends to keep a significant equity position in IBN-One

→ Licensing revenues + dividends would bring GBE to breakeven



4. Technology deployment

- Progress and success of IBN-One will be adoption trigger:
  - High availability of sugar → Sugar players looking for new markets
  - Potential for tens of plants on the midterm in OECD to reduce carbon footprint and improve air quality in cities
- Potential for thousands of plants on the longer term with rising pressure on fossil oil resources:
  - GBE's business model based on Joint-Ventures and licensing. Final equity position in plants will depend on each specific opportunity
  - Ongoing discussion with large industrialists about a strategic alliance to help deploying the technology
- Potential to move down in the value chain and become the first Major in renewables

5. Environmental impact

- Life cycle analysis indicates 69% reduction in CO2 emissions when compared to oil-derived gasoline.

→ The process has the potential to reduce CO2 emissions by up to 1 billion tons, representing several % of the global CO2 figures

- Gasoline using isobutene-derived octane boosters produce far less particles

→ Mexico city successfully improved its air quality based on mandatory addition of isobutene derivatives. This approach should generalize.

6. Why invest now?

- The golden era for renewables is coming:
  - Trends: Oil availability down, sugar availability up
  - Citizens and States now expect concrete green solutions
- The company is at the tipping point between technology development and commercial deployment. Value of this new stature not expressed yet in stock price.
- An intense newsflow expected on the short term:
  - IBN-One moving forward: off-take intentions, new investors joining in…
  - Strategic alliance to launch worldwide deployment of the IBN process
  - Large deal on GBE's non-IBN assets in preparation
  - …

Appendix 1: Our Science is unique

Day 1

Global Bioenergies founded 10 years ago by:

- Philippe Marlière, a visionary scientist, and
- Marc Delcourt, a seasoned entrepreneur

Developing a biological process to produce renewable gasoline is our mission since day 1, starting from a paper project

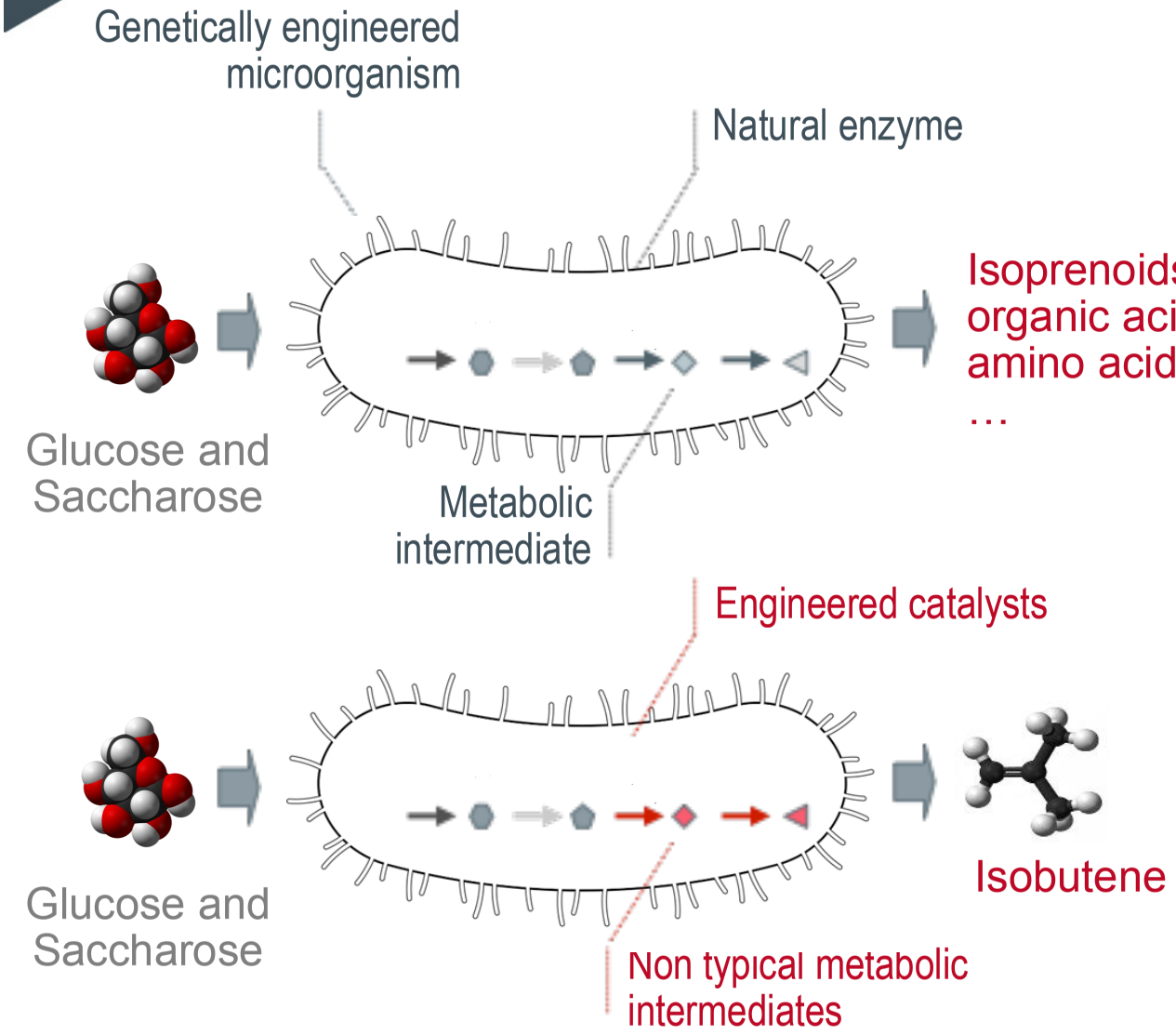
At that time, several companies were involved in creating biological processes to produce innovative biofuels

- All were targeting pathways existing in Nature, that they would improve
- All were targeting liquid products

Project

- **Goal:** develop a biological process to produce renewable gasoline
- **Upside:** fermentation to a gas will bring key benefits, such as alleviation of product-to-strain toxicity and simplification of purification scheme
- **Means:** teach bacteria how to convert sugars into isobutene, a gaseous 4-carbons molecule easily convertible into high-performance gasoline
- **Technology barrier:** isobutene is not produced in Nature - No biological starting point…
- **Solution:** a new synthetic biology approach combining metabolic engineering and protein engineering

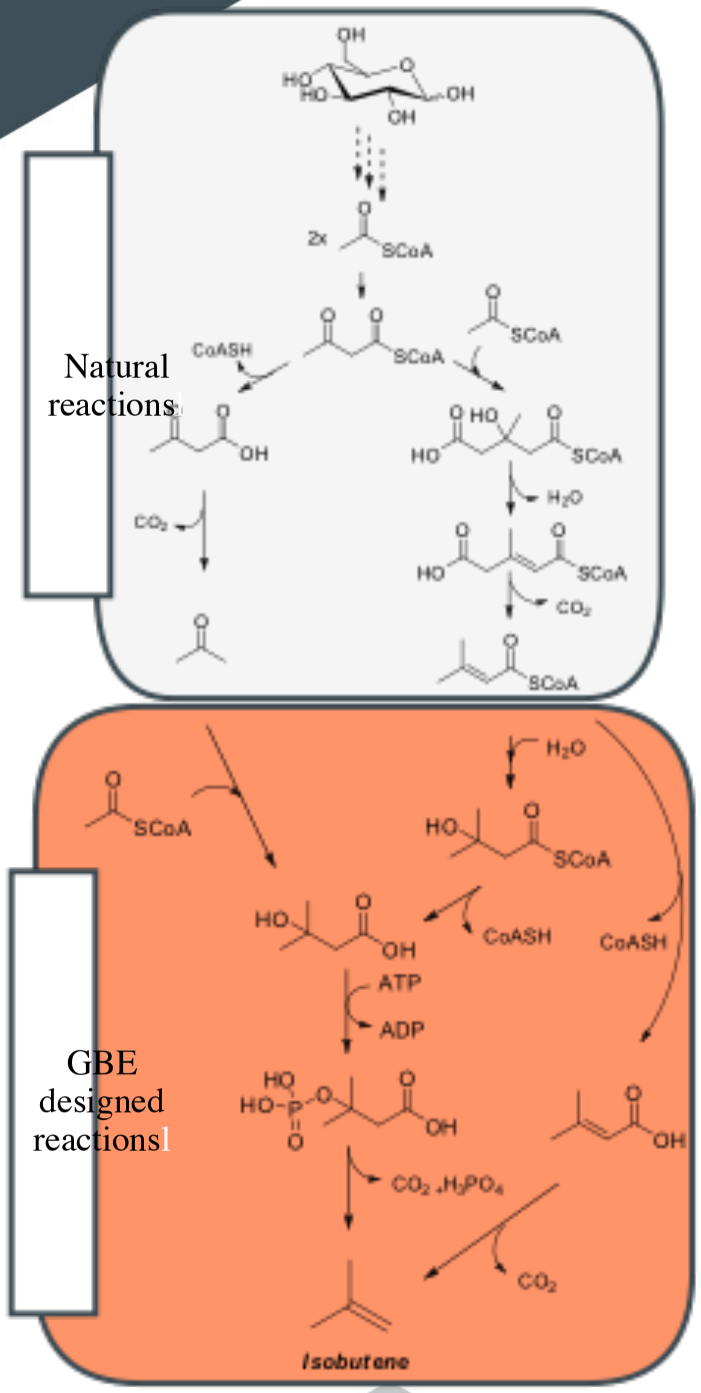
A new synthetic biology approach



Classical metabolic engineering approach: introduce, in a well domesticated microbe, a cascade of natural biochemical reactions, in order to produce the compound of interest

Global Bioenergies' approach: introduce in the microbe a cascade of biochemical reactions including non naturally occurring reactions fostered by engineered catalysts designed by Global Bioenergies

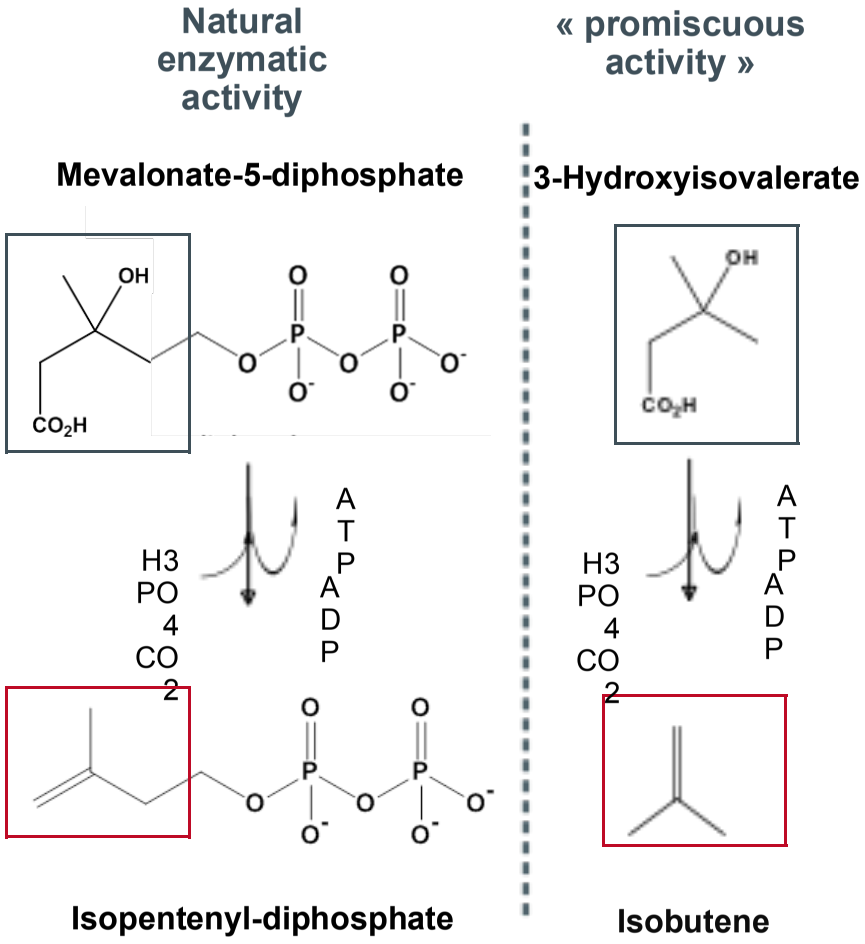
Design of several metabolic pathways to IBN



- Upstream segment: natural reactions, but core metabolism was completely rewired in order to increase yields beyond the limits of current production strains (see details in WO2013007786)

- Downstream segment: non naturally occurring reactions catalyzed by engineered bio-catalysts

Generating new enzymatic reactions (1/2): lead discovery



An approach based on analogies

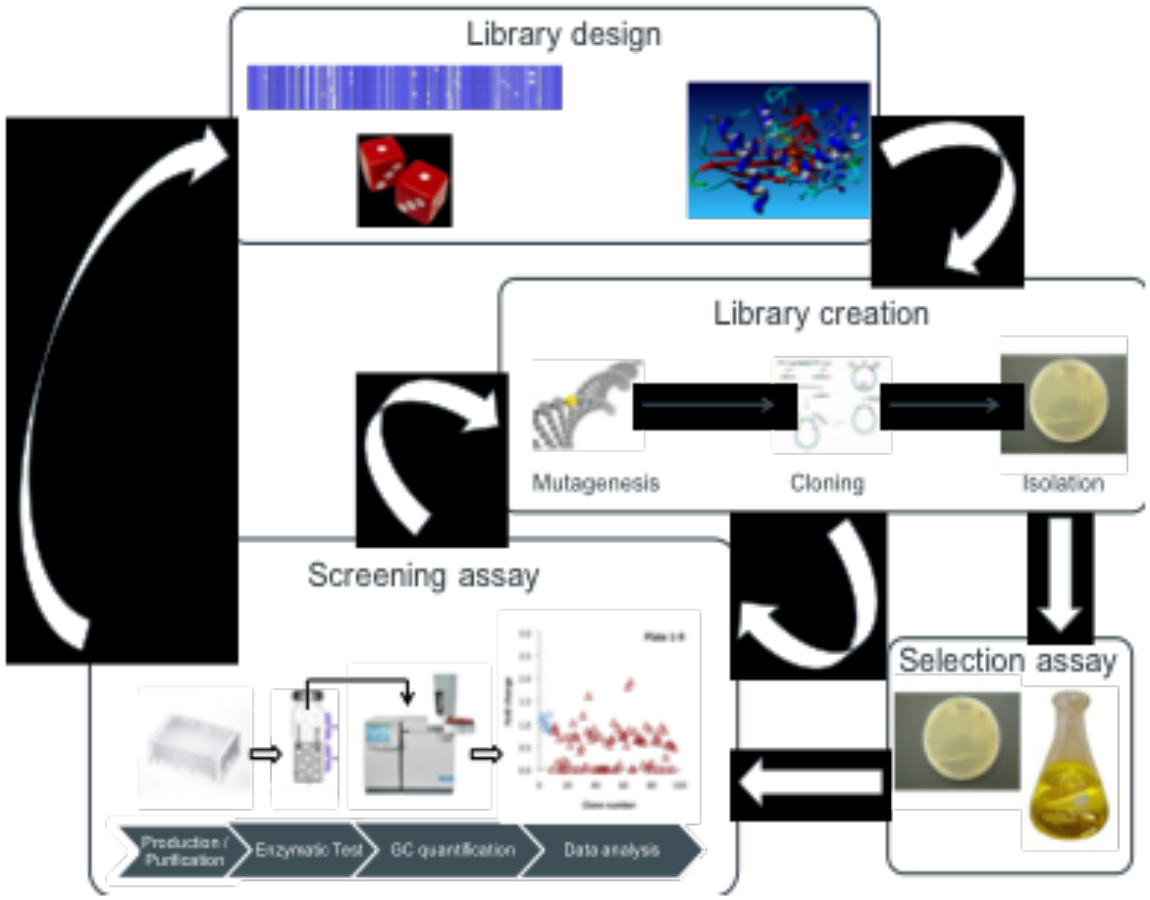
1. Identify enzymes whose product share structural properties with IBN or intermediate to IBN
2. Test for potential activity for IBN (or intermediate to IBN) production by so called "promiscuous activity"
3. Identify "leads" (enzyme with desired activity)

The growing potential of the strategy

Back in 2008: analogies identified by eye, and tests conducted on a few dozens of candidate enzymes (example on the left)

2017-2018: computational identification of candidates and tests conducted on thousands of candidate enzymes chosen by computational approaches, encoded by synthetic DNAs at continuously decreasing costs

Generating new enzymatic reactions (2/2): high-throughput enzyme engineering

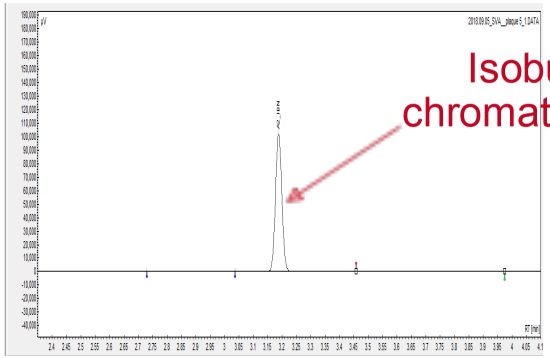


- 2009-2012: Global Bioenergies develops its own core technology for enzyme engineering: a High-Throughput Screening (HTS) platform based on an automated gas chromatography readout. The first engineered catalysts (improved "leads") are produced

- 2018: An integrated platform combines the potential of HTS and computational design, to deliver new bio-catalysts with high activity, sustaining the high performances of the isobutene production process

Development of the isobutene process at the lab scale

1L Fermenter



Isobutene Gas chromatography peak

- A prototype bacterial strain containing all the genes encoding for each enzyme of one of the pathways was generated in 2011 and led to a detectable level of renewable isobutene in a 1L fermenter
- Isobutene process was developed further, in order to achieve commercial performances, using:
  - New generations of enzymes engineered by Global Bioenergies
  - Strain optimization by molecular biology tools, enhanced by "Omic" approaches (transcriptomics, proteomics, metabolomics)
  - A fermentation platform of 34 bioreactors (1L to 42L) for analysis, coupled to a powerful analytic platform (HPLC, GC, MS, and LC-MS)

A complete IP fortress…

- Global Bioenergies' metabolic pathways to IBN are extensively IP protected
- Patents on new enzymatic reactions, enzyme variants operating these, and processes using these
- We today have exclusive rights on more than 35 patent families either owned, co-owned, or exclusively licensed

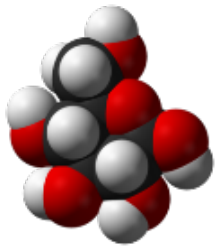
… with a know-how citadel

- Fermentation is a Cuisine-like field where black art is everywhere, because it is based on multiparametric recipes combining microbiology and chemical engineering

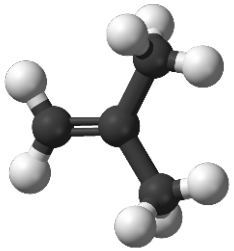
Appendix 2: A mature technology

Yield performances today

- Stoechiometry says:



3 kg of industrial grade beet sugar



1 kg of high purity isobutene

	Yield (Kg of sugar necessary to produce 1 kg of isobutene)	**Comment**
Stoechiometric	3	
Final target	3.8	A part of the sugar is necessary for bacterial growth and maintenance
2011	> 1.000.000	Early strains were working very poorly
2018	< 5	Incremental progresses still ongoing to get closer and closer to the final target.

Renewable gasoline: collaboration with Audi

- Isobutene produced at Demo plant converted into isooctane and ETBE
- A mix containing in total 34% renewable content (ETBE + isooctane) was produced and tested on the Montlhéry circuit using a normal Audi car
- The mix fulfilled the European EN228 gasoline norm and could thus be sold and used in any standard gasoline car
- France recently added Global Bioenergies' isobutene derivatives in the list of biofuels eligible to tax incentives

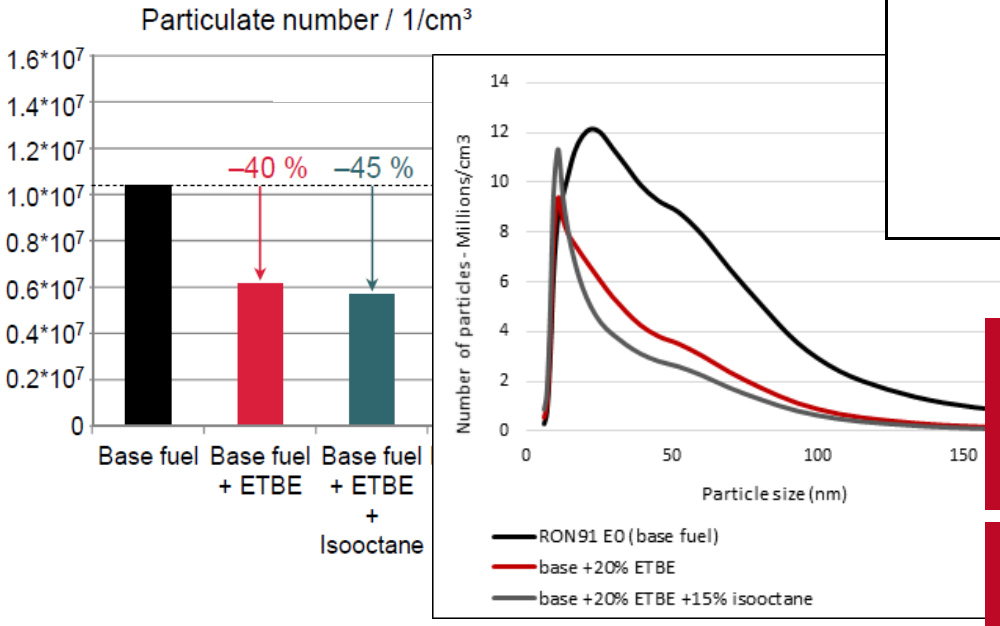
Watch the video

Life cycle analysis: 69% reduction in CO2 emission

- ETBE was studied by EVEA, an independent company specialized in life cycle analysis
- Conclusion of this preliminary analysis was that it would produce **69% less CO2** if compared to fossil gasoline when produced in a commercial-scale plant
- Rule of thumb calculation: for each ton of fossil gasoline substituted by renewable gasoline, two tons of CO2 emissions are saved
- Study will need to be redone once IBN-One, the first commercial plant, up and running

Massive reduction in particles emission

- Literature says isobutene derivatives are non particulogenic octane boosters, outperforming the incumbents, aromatics
- Mexico City already massively used isobutene derivatives to improve its air quality
- We entrusted FEV, the main engine testing specialist, with the mission to confirm such literature claims



Conclusions:

- **20% isobutene mobility will reduce particles in cities by 40%.**
- **As a comparison, 20% electric mobility will reduce particles in cities only by 20%.**

→ The US Environmental Protection Agency (EPA) calculated that each $ invested as part of the Clean Air Act brought a return o investment exceeding $30 (less cancers, less pulmonary diseases, less work days lost…)

The particles from gasoline problem is now recognized. In Europe filters will become mandatory in new cars in 2019. These are expected to filter only a part of the particles.

Achievements 2014-18

- Improve the strain performances dramatically (engineer enzymes and pathways, rewire the core metabolism, cut side leaks, define operating conditions…)
- Scale the process up from 1 to 5,000L: Design, build and operate a pilot and a demo plant
- Define and reduce to practice the downstream processing unit - produce and purify isobutene batches
- Convert isobutene into isooctane, ETBE, bio-Jetfuel and emollients for cosmetics
- Perform engine and road testing
- Prepare commercial scale exploitation by designing a first commercial plant together with EPCs

Appendix 3: First commercial plant in sight

Moving to commercial scale exploitation

IBN-One, the first commercial plant project, is on its way.

Global Bioenergies' main milestone today is to bring it to life.

IBN-One: Rationale

- IBN-One is today a 50-50 Joint-Venture between Global Bioenergies and Cristal Union
- Cristal Union:
  - €2.5b in revenues
  - #4 in the sugar industry in Europe
- High availability of sugar because of the end of the European quota system

  → Sugar players are looking for additional markets
- Global Bioenergies' process is a bridge to large existing markets
- IBN-One's mission is to finance, build, and exploit the first commercial plant based on Global Bioenergies' process

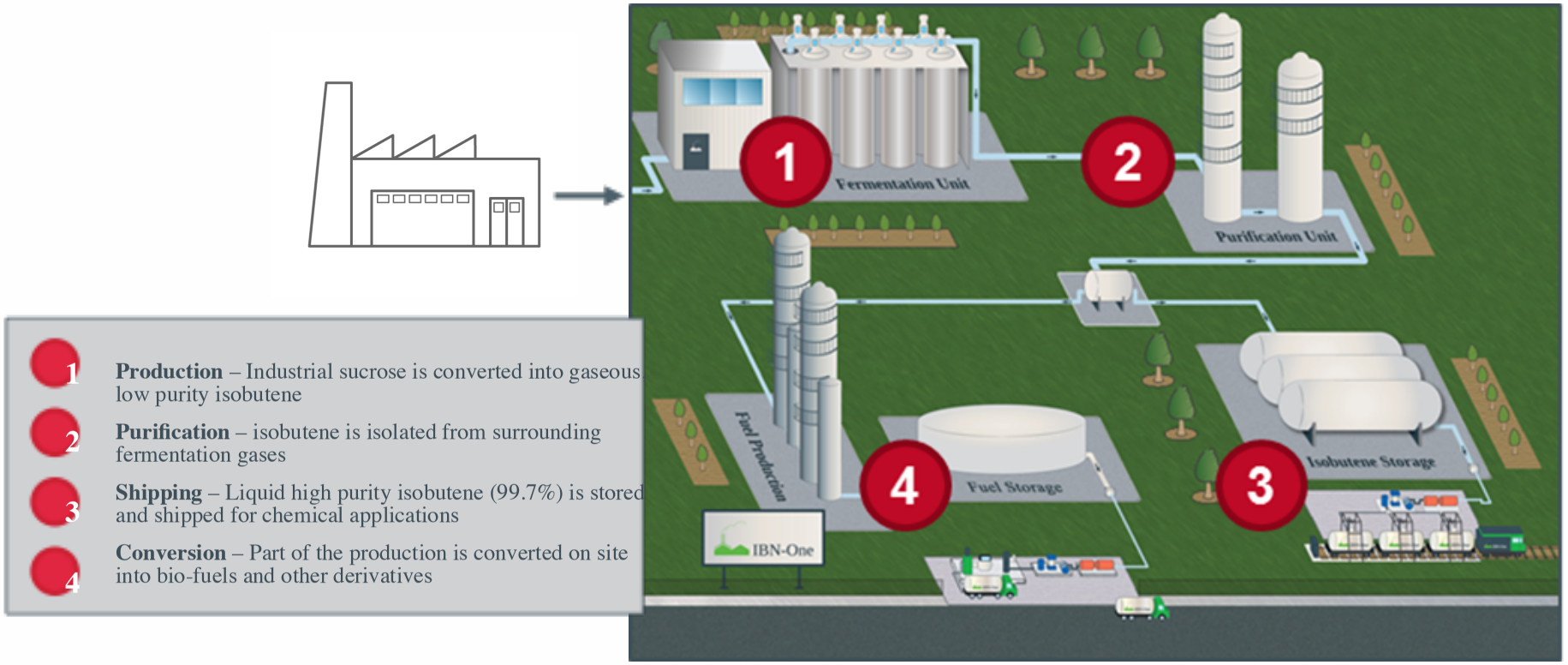
IBN-One: where are we today?

- GBE and CU already invested €1m each in the project
- The French State (Investissements d'Avenir) provided complementary financing
- Engineering: preliminary studies have been completed by

TechnipFMC IPSB Ingénierie de Procédés Sucres et Biotechnologies

- Regulatory context: isobutene derivatives are now in the list of biofuels eligible to tax incentives
- Successful business development efforts to identify niche markets associated to high selling prices

IBN-One: Artist's view

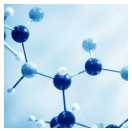


1. **Production** – Industrial sucrose is converted into gaseous low purity isobutene
2. **Purification** – isobutene is isolated from surrounding fermentation gases
3. **Shipping** – Liquid high purity isobutene (99.7%) is stored and shipped for chemical applications
4. **Conversion** – Part of the production is converted on site into bio-fuels and other derivatives

- IBN-One will produce several products:
  - Biofuels (such as full-Renewable ETBE, to be blended in gasoline streams, or Sustainable Aviation Fuel, to be blended in kerosene)
  - Isobutene derivatives for the chemical and cosmetics industries
  - High-purity isobutene, to be converted by clients in high-value end-products

Ecosystem of expected off-takers for IBN-One and future plants: biofuels and more…

Chemicals and cosmetics



L'ORÉAL

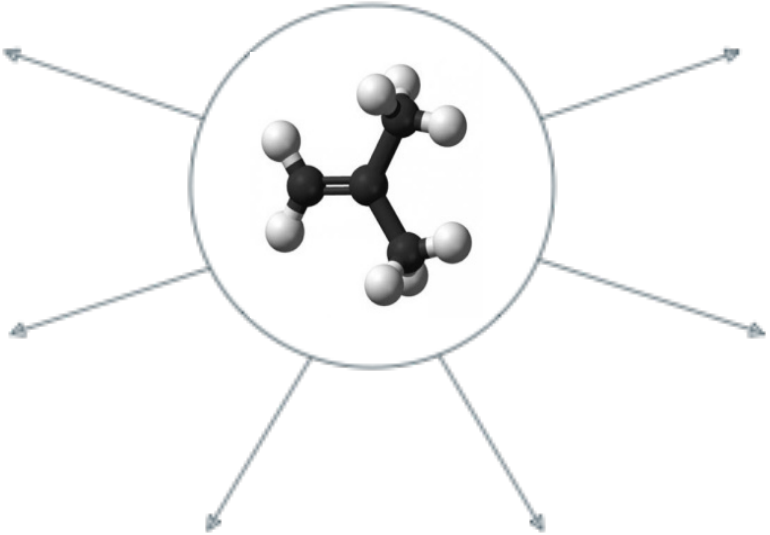
CLARIANT

INEOS

Lubricants and paints

INEOS

ARKEMA
INNOVATIVE CHEMISTRY



Gasoline

Collaborations with:

Audi

ASPEN
Fuel for professionals

REPSOL

Jet fuel

SkyNRG

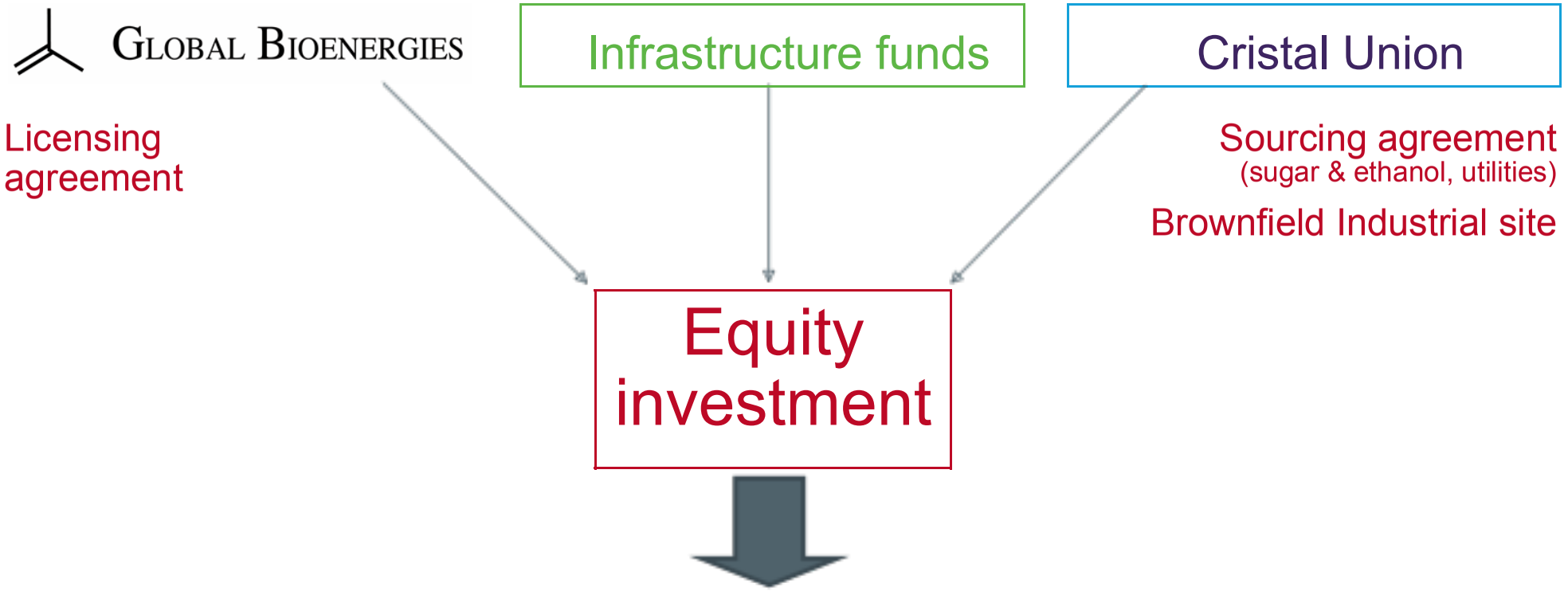
Plastics and rubber

ARLANXEO

Domestic gas

Butagaz

A co-ownership / licensing business model



Base Case (at full capacity)

Production: 50,000 tons/yr
(isobutene and derivatives)

EBITDA = 45 M€/yr

Net Result = 30 M€/yr

IBN-One: conclusion

- IBN-One is a specific case:
  - High profitability in base case scenario due to first-mover's advantage
  - Global Bioenergies plans to invest in IBN-One and to remain a significant shareholder on the long term (25+%)
- Dividend will add to licensing revenues
- Revenues range from €13m/yr in base case scenario, up to €20m/yr in the best case scenario with high premium niche markets delivering more profits

Appendix 4: Potential to largely deploy the technology

Deployment path

1. IBN-One up and running – Commercial Flagship

2. Have several other Isobutene commercial plants emerging

   - JV/Licensing business model
   - Partners from the upstream (sugar and other agri players) or downstream (chemical companies using isobutene as a feedstock, oil players…)
   - Equity investment in JVs to be adapted to each opportunity

3. Worldwide deployment of the technology through a strategic alliance with an Industrialist (EPC for example)

Business Overview of EPCs

- EPC: Engineering Procurement and Construction - large corporations involved in the build-up and maintenance of plants.
- Key players: Bechtel, Halliburton, TechnipFMC, Linde, ThyssenKrupp, Neste Engineering Solutions…
- Currently develop technology licensing as part of their growth strategy:
  - Broad global business development outreach
  - Provide technical and financial guarantees on technologies
  - Synergistic with their core business units

Rationale for a strategic alliance with an EPC

- Geographic exclusivity for site-specific upstream design package for new Isobutene plants → will place the EPC in the pole position for the further construction deals
- Counterpart of such privileged situation:
  - EPC to give access to its licensing capabilities and teams
  - EPC to fund GBE on the short and mid term

Longer vision: going down the value chain

- Technology licensing will make the company profitable
- Becoming a production partner, by investing in the JVs, will bring additional value – similar to oil Majors having stakes in oil fields
- However: A large part of the value lies in Applications and Products

Opportunity: Global Bioenergies to become a product company to seize more value

- Organizing the market access will be the next move:
  - Create a centralized trading entity buying the IBN to avoid competition between isobutene plants
  - Build the BtoB consumer commercial network. Construction of the ecosystem in progress
  - BtoC distribution and branding remains out of reach, except specific options under evaluation

Progressive downstream integration to position a Global Bioenergies as the first Major in renewables

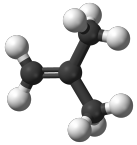
Appendix 5: Large reduction in CO2 emission and improvement of air quality in cities

Largest Product Opportunity : Renewable gasoline

Unexpensive processes

Isooctane
the gold standard

- **Octane rating 100**
- **Blendable up to 35%**
- **No/low emission of particles**



+ Ethanol

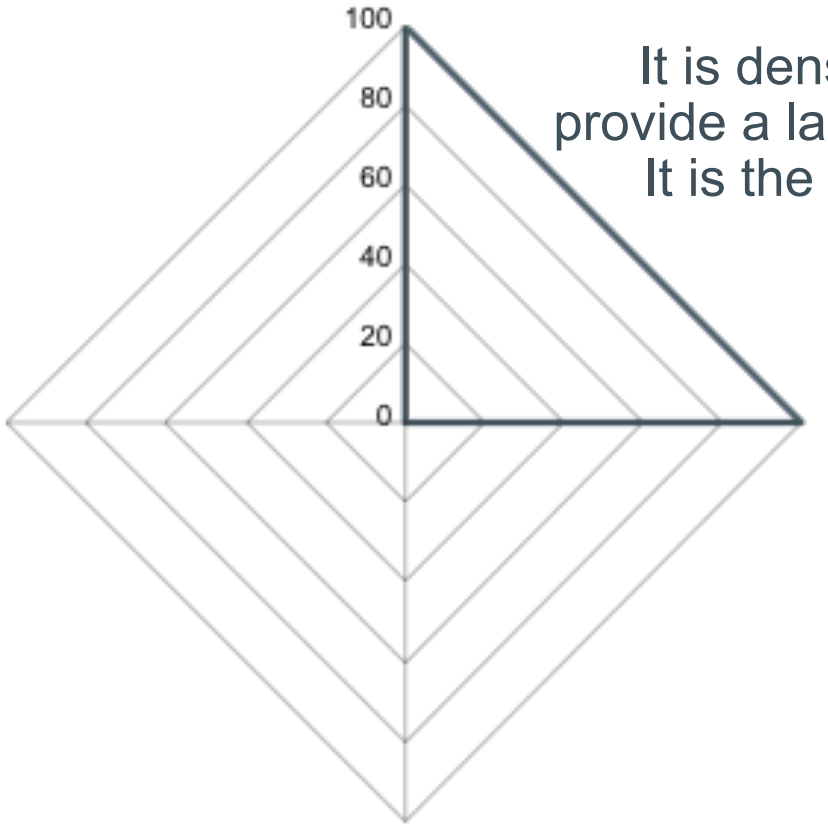
ETBE
A widely used additive

- **Octane rating 110**
- **Blendable up to 23%**
- **No/low emission of particles**

Business opportunity: to replace aromatics* as gasoline octane boosters in urban areas

* Aromatics are the incumbent octane boosters, at the origin of ultrafine particles: #1 health issue of gasoline

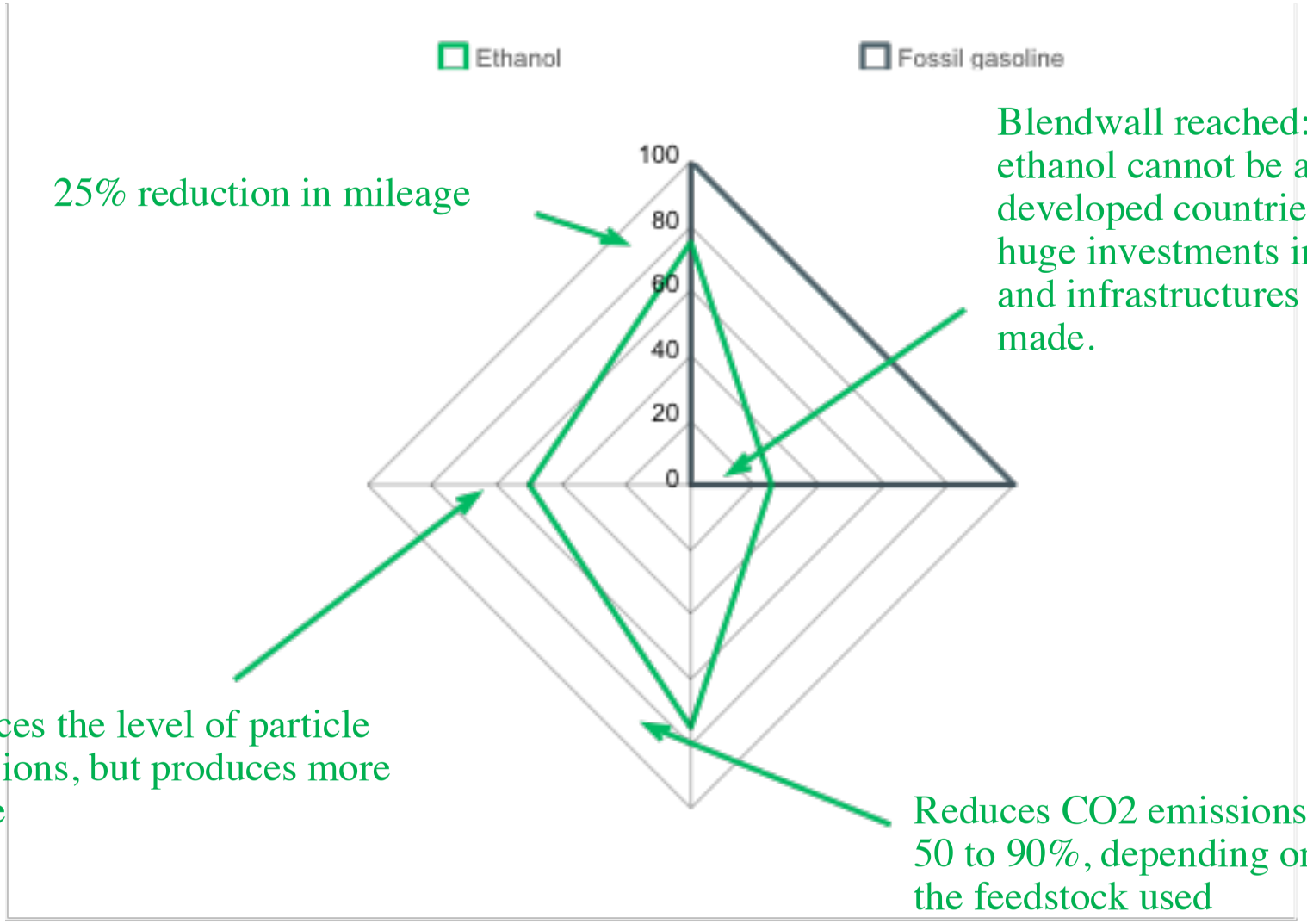
Fossil gasoline



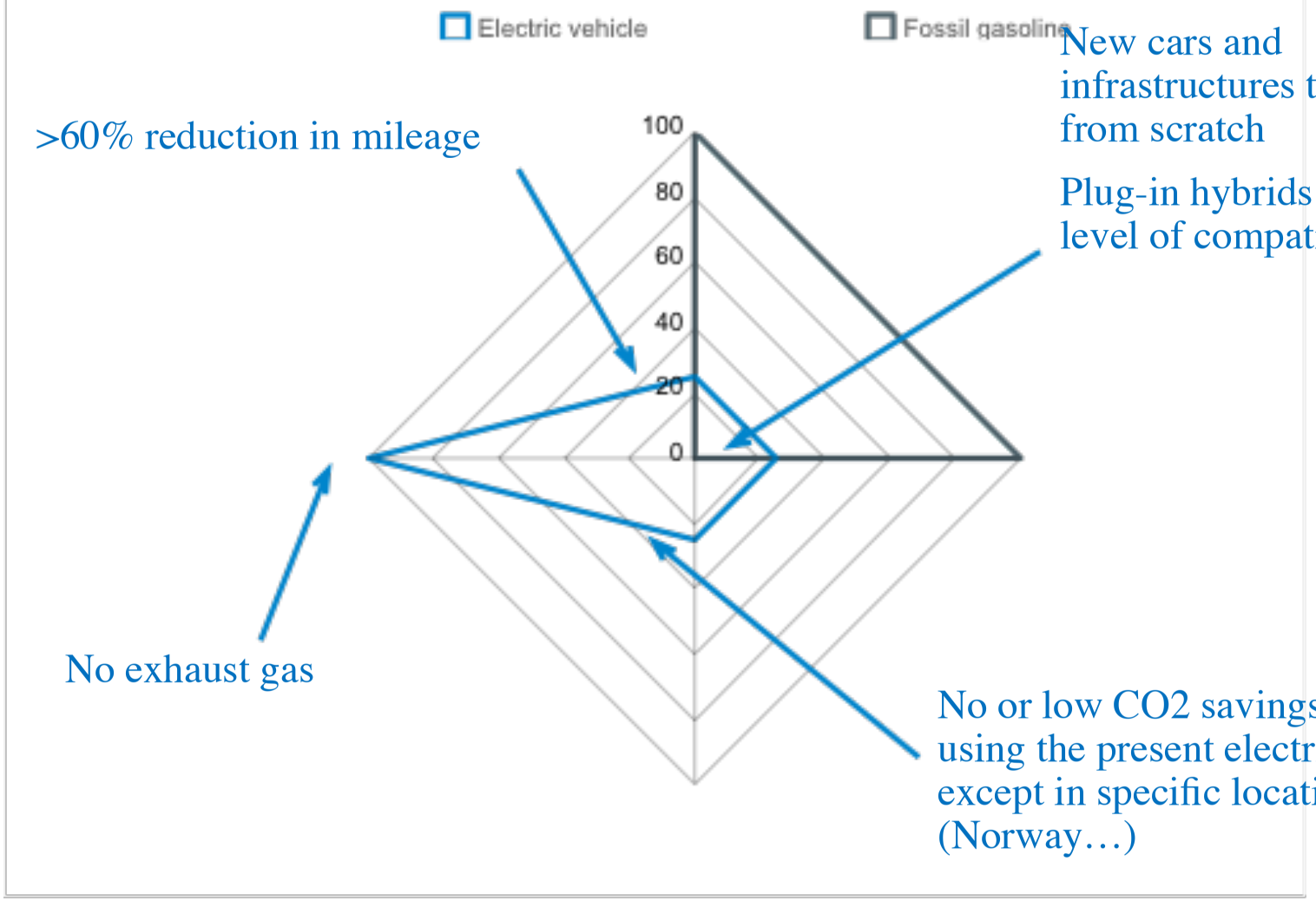
It is dense in energy, and thus provide a large vehicle autonomy.
It is the mainstream standard.

It is very polluting, globally and locally

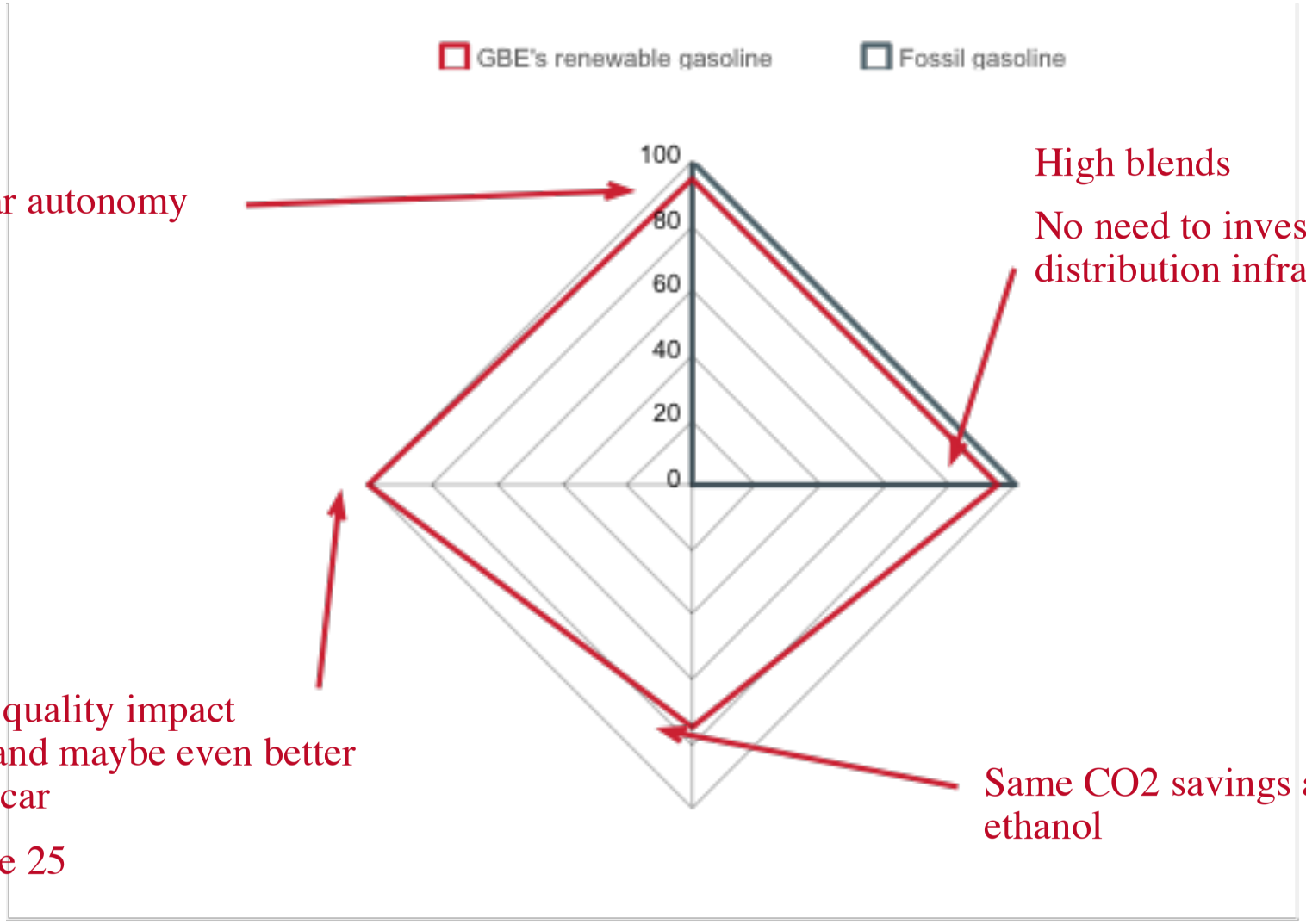
Ethanol: a good substitute, now at its limits in OECD



Electric car: a good way to improve air quality in cities



Renewable gasoline: combines all advantages



Similar autonomy

High blends

No need to invest in cars or distribution infrastructures

Effect on air quality impact comparable and maybe even better than electric car

→ See slide 25

Same CO2 savings as ethanol

Metrics

Production Capacity	2,000 plants	10,000 plants	
Production (million tons)	100	500	As a reference, present gasoline market is 1,000 million tons per year. Jet fuel is 200 million tons.
CO2 savings (million tons)	200	1,000	World total CO2 emissions are 37,000 million tons
Land surface (million hectares)	40	200	World arable land is 1,400 million hectares. First generation crops can be used for a large number of plants, but second generation will be neccessary to avoid weighing on food supply chains

Diversifying the feedstocks

	Today	Short term	Longer term
Availability	1G Food crops	2G Wood chips, straw, bagasse	3G Industrial waste gases
	   **Traditional feedstocks** Sucrose: Beet, cane Glucose: corn, wheat	   **Advanced feedstocks** Forestry: wood chips Agri : wheat straw, corn stover…	  **Emerging feedstocks** Steel mill syngas Concentrated CO2
Cost of resource			
GHG savings			
Potential partners	Major agricultural players	Forest operators	steel mills and eventually CO2-emitting industries

CRISTAL UNION

CLARIANT

SEKAB

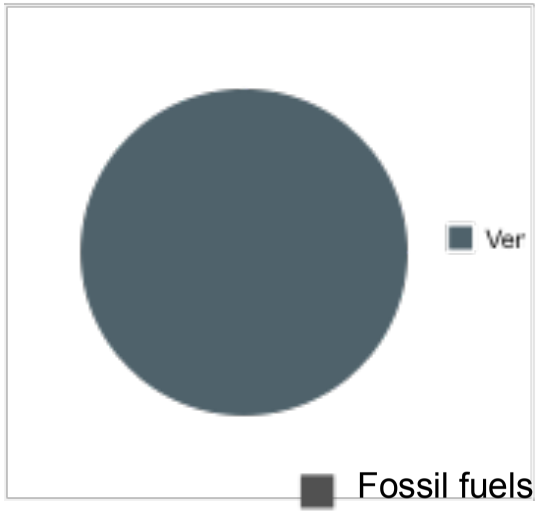
graanul invest

Vision for road transport in France and in the USA

France: 45Mtoe (million tons oil equivalent)

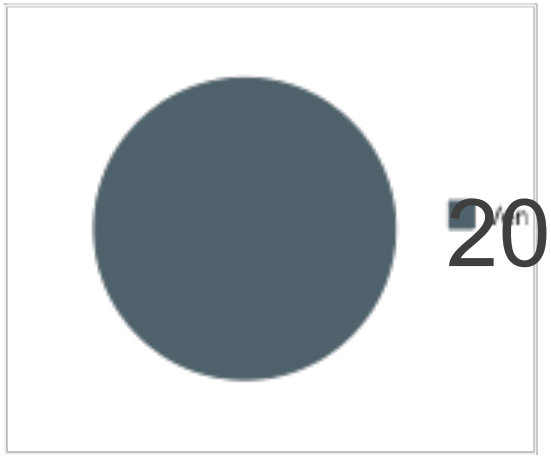
USA: 600Mtoe

2017



30Mtoe

400Mtoe



2040

Biofuels

Electricity

Transition Pillars

Consumption reduction (better cars, shared transportation…)

Biofuels deployment

Increase in renewable electricity, new infrastructures, grids

Impact

Oil consumption down 75%

CO2 emissions down 60%

Particles down >90%

Appendix 6: Who are we today?

A seasoned management team…

Exec
comm

Marc Delcourt
Chief Executive Officer

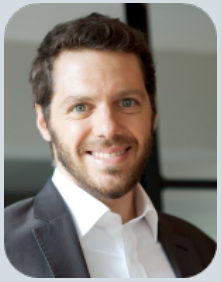
Samuel Dubruque
Chief Financial Officer

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

…backed by a hands-on 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

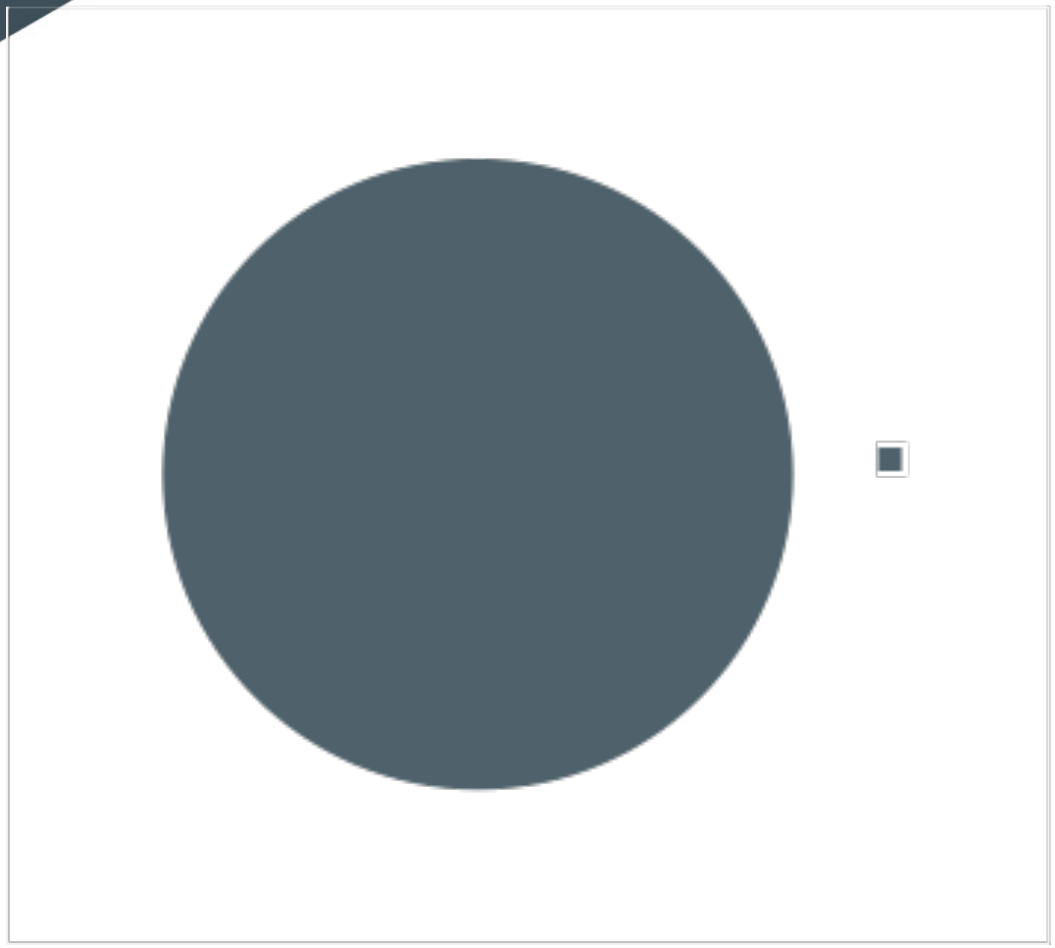
Sébastien Groyer – Partner at Seventure Partners

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

Equity and finances



Average daily liquidity	
2012	€16k
2013	€32k
2014	€77k
2015	€96k
2016	€90k
2017	€120k
2018 YTD	€140k

Existing shares as at Sept 1st, 2018	4,518,761
+ Dilutive instruments (stock-options, warrants…)	+ 570,058
Fully diluted:	**= 5,088,819**

We burnt ~€12m in 2017,
and have a cash position of
€11m as at 1st July, 2018

A concrete, mature and scalable solution to reduce global and local pollution arising from road and air mobility