

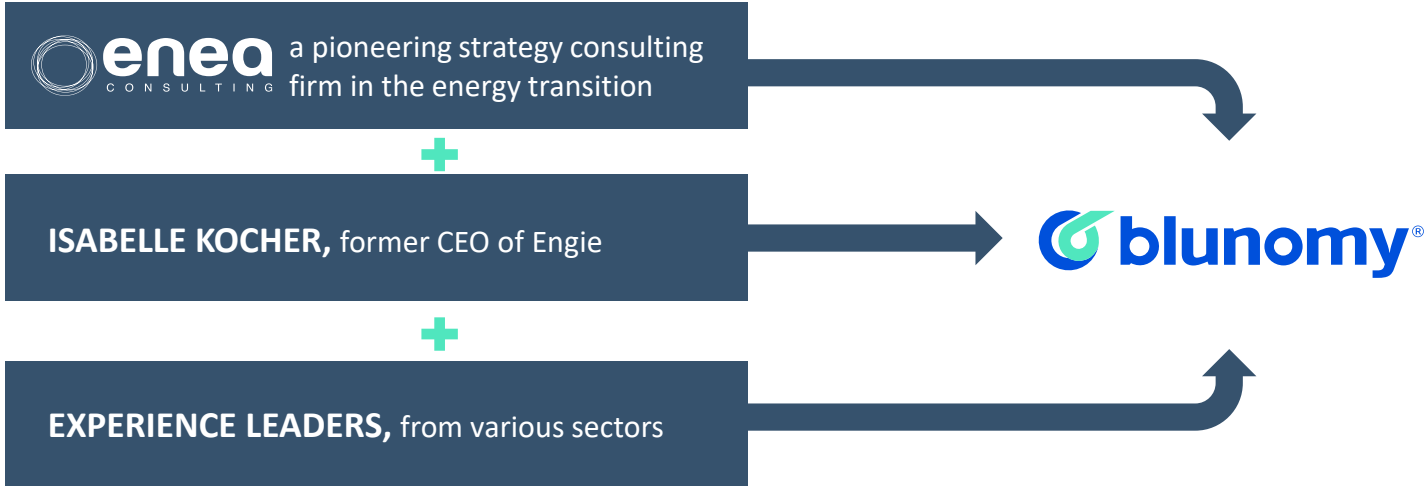
# Keynote – Opportunities and challenges of biomethane commercialization

OFATE Conference - Biomethane business models

*May, 11<sup>th</sup> 2023*

Blunomy is the result of Isabelle Kocher and Enea Consulting joining forces in late 2022 – we are committed to accelerating energy transition globally

WHO WE ARE



**130** ENERGY TRANSITION SPECIALISTS  
**6** OFFICES  
**300+** PROJECTS PER YEAR

WHAT WE DO

- Decarbonization & business transition strategies*
- Financial advisory & Due diligence*
- Supply chain & Coalitions engagement*
- Sustainable business models development & scale-up*
- Modelling & Data science for energy systems and impact measurement*

February 1, 2023

# Our activity on the renewable gas sector

We have conducted 150+ assignments on the renewable gas sector



*Bioenergy roadmap for Australia*  
[\(link\)](#)



*Vendor due diligence of a biogas pure player* [\(link\)](#)



*Supporting the initiative of the french industry players on biogas externalities (2+ years)*

**DUE DILIGENCES**  
*Multiple due diligences of biogas project developers, production assets, NGV infrastructure and biomethane contracts*

**POSITIONNING STRATEGIES**  
*Positioning strategy of several players on the biomethane sector*

**R&D ROADMAPS**  
*R&D and R&I roadmaps on the biomethane sector, technology watches*

**INVESTMENT THESIS**  
*Investment thesis definition in the biomass sector for un major investment fund*

**MARKET DESIGN**  
*Analysis of national biomethane market designs and transborder exchange in 10+ European countries*

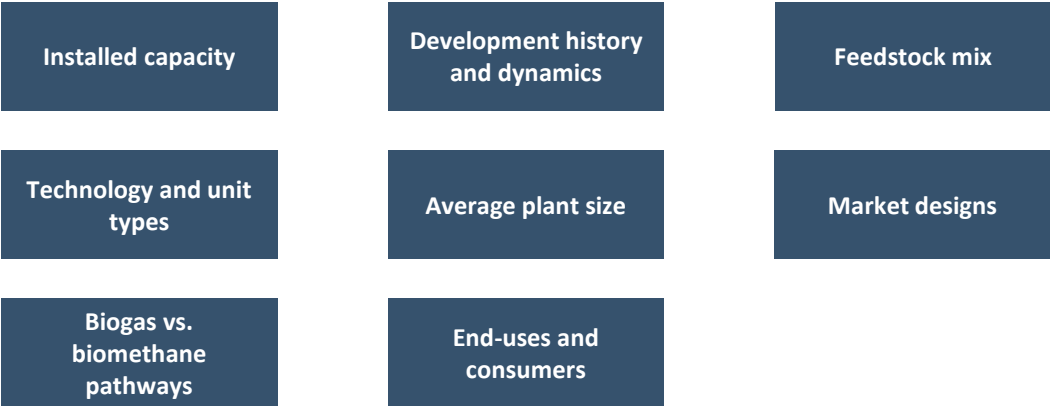
**GEOGRAPHICAL EXPANSIONS**  
*Multiple entry strategy in new biomethane markets*

# Agenda

- 1** Introduction and step-back on the European biomethane sector
- 2** Current status and how the last 3 years gave a boost to the industry
- 3** Opportunities and challenges of biomethane commercialization
  - A. Toward a greater internationalization of still heterogeneous national markets*
  - B. Recognizing and valorizing all values from biomethane production*
  - C. A growing appetite for biomethane from end-users*

# The European biomethane industry is the sum of unique national markets, each coming with their own history, specificities and challenges

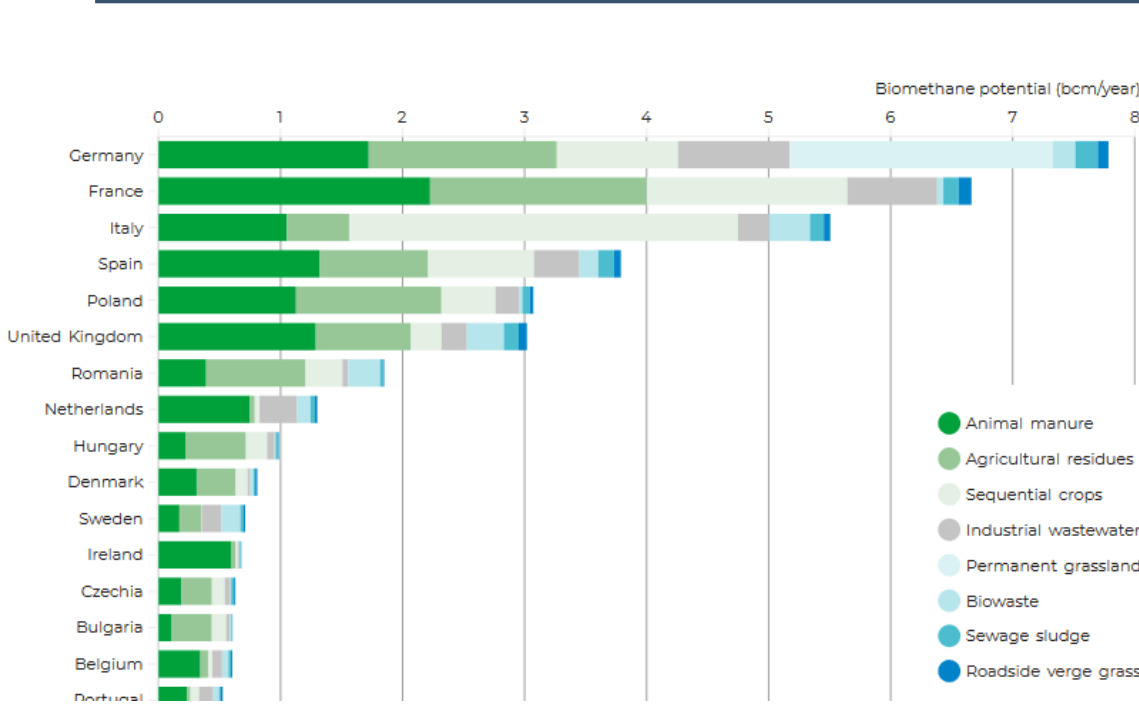
While the EU biomethane market is growing at fast pace internationalizing, national markets remain significantly different in terms of:



These very different situations are deriving from:

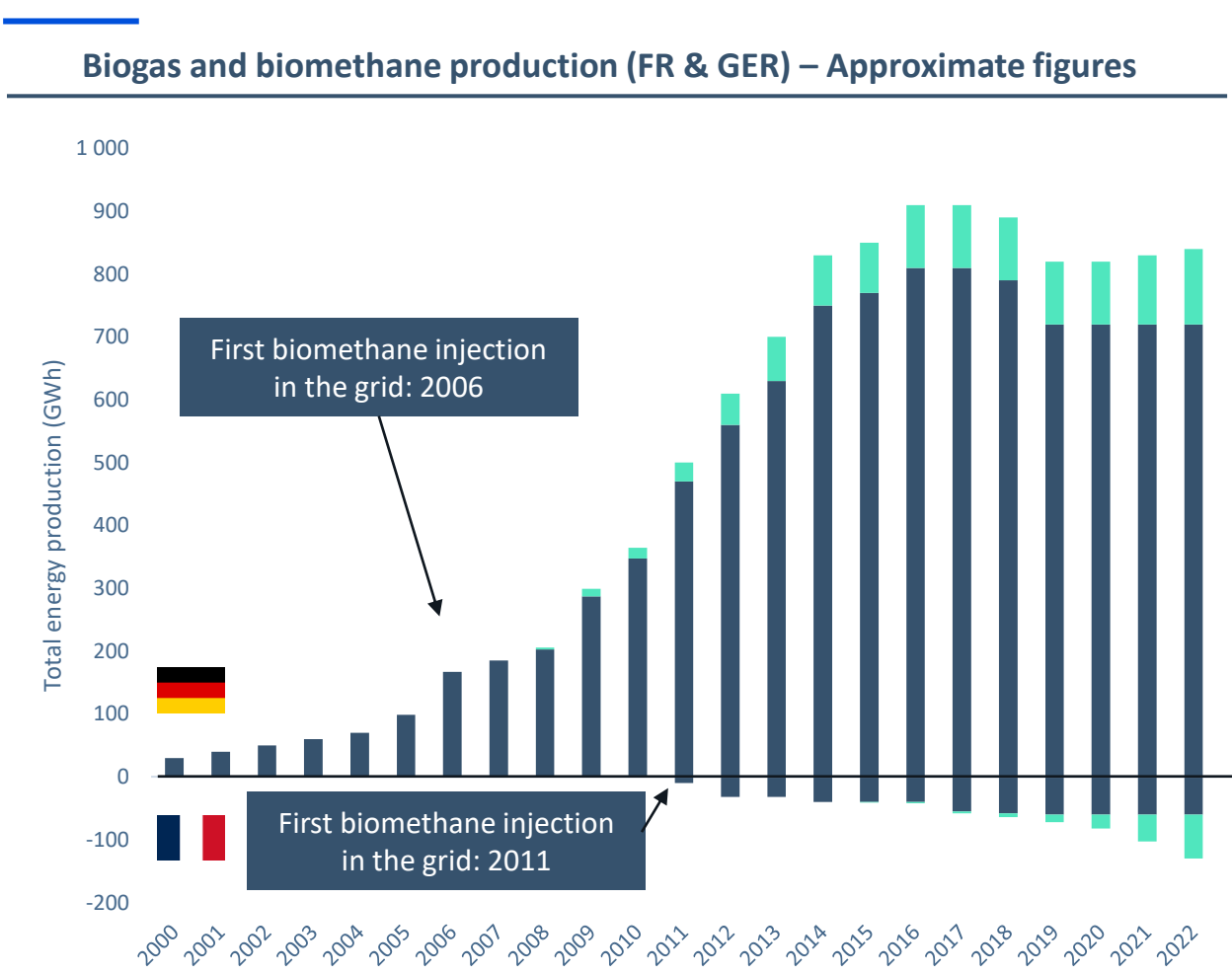
- **Heterogeneous country contexts** (feedstock, gas infrastructure, industrial and agricultural sectors..)
- **Political orientations** (*support mechanisms targeting specific unit size, types and end-uses*)

Illustration: 2030 AD potential in European countries



Source: EBA

# France and Germany are the perfect example of this heterogeneity



**Feedstock mix**

- Varied mix with a predominance of agricultural residues, landfill and sewage sludge
- Predominant use of dedicated crops with incentive switching to supporting other waste (manure..)

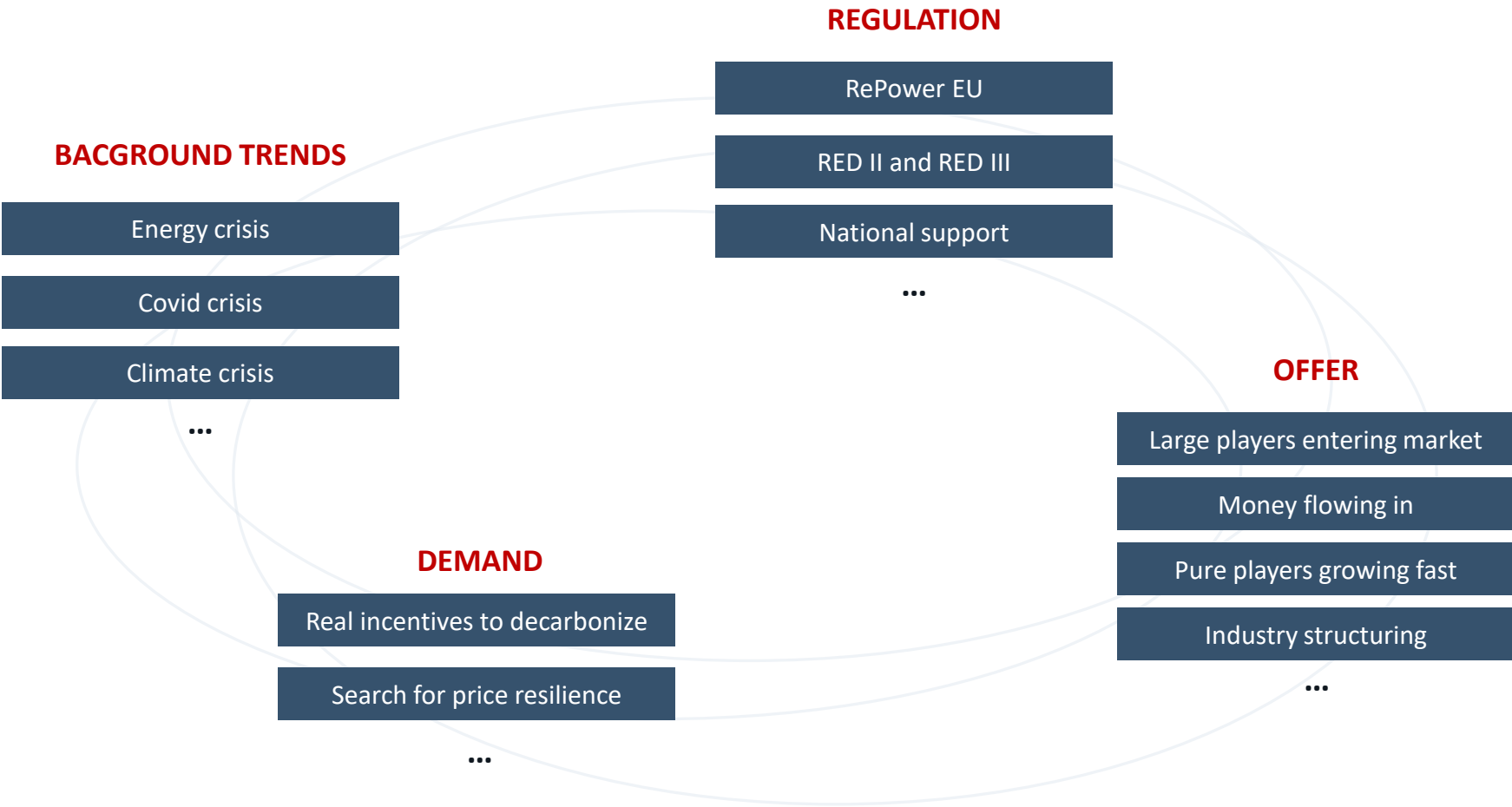
**Average unit size (biomethane)**

50 GWh (Germany) vs 17 GWh (France) with a multiplier of x3.

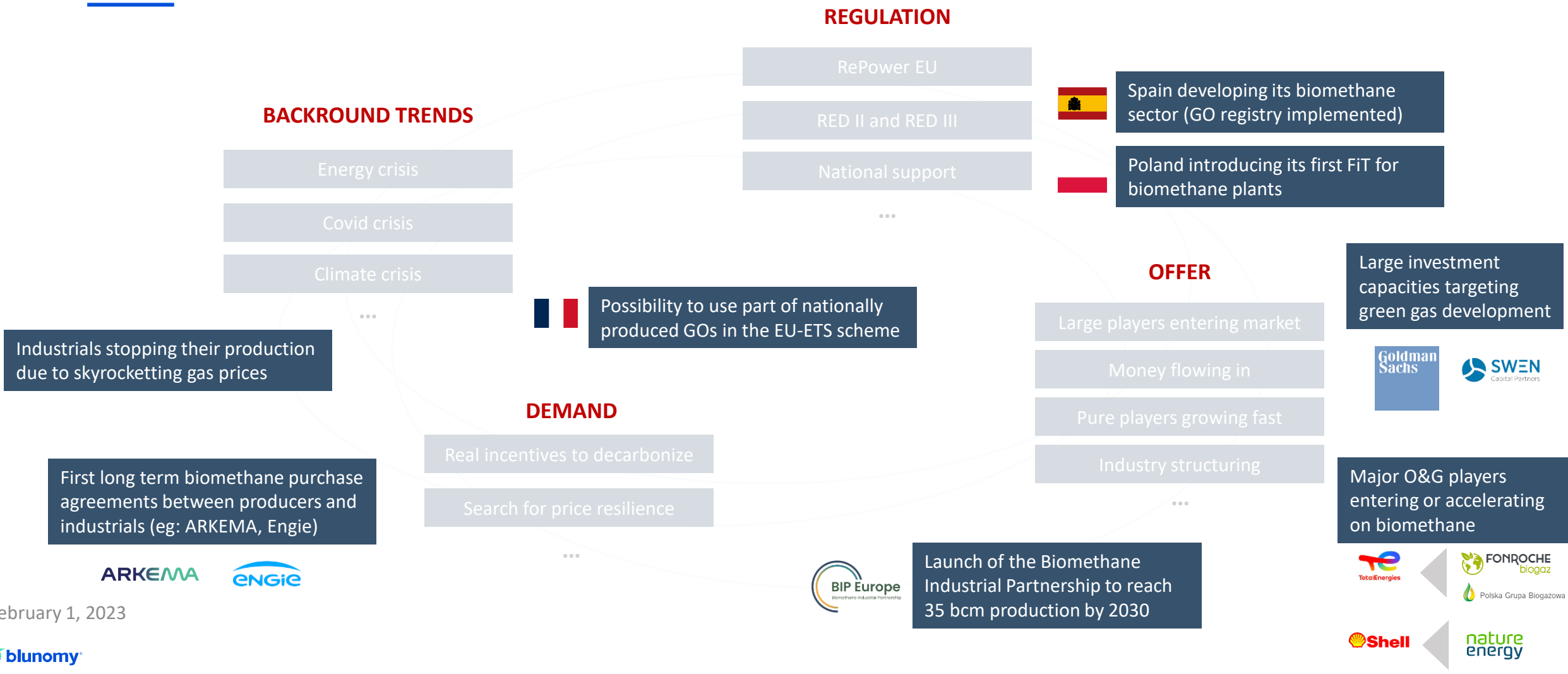
**Market design (biomethane)**

- Production-side support (FiT) with no incentives on demand-side
- Demand-side support through several mechanisms on transport, heat and elec. production

The recent climate, covid and energy crisis have highlighted the crucial role of local and low-carbon gas production and gave a boost to the development of the industry



# The recent climate, covid and energy crisis have highlighted the crucial role of local and low-carbon gas production and gave a boost to the development of the industry



February 1, 2023





Although many challenges remain to accelerate the uptake of the biomethane industry, the market offers many opportunities for players across the value chain

### Opportunities

### Challenges

Internalization and greater integration of currently heterogeneous national markets

Externalities valorization

Competition on feedstock

Growing appetite from end users

Evolving regulations

Better co-products valorization (BioCO<sub>2</sub>, digestate)

Positive regulation introduced in new countries

Gas infrastructure long-term role

New feedstock deposits (biowaste,...)

Energy efficiency

Know-how export to new geographies

Acceptability

Accelerate the development of other green gases to legitimate renewable gas in the transition



Although many challenges remain to accelerate the uptake of the biomethane industry, the market offers many opportunities for players across the value chain

### Opportunities

### Challenges

Internalization and greater integration of currently heterogeneous national markets

Externalities valorization

Competition on feedstock

Growing appetite from end users

Evolving regulations

Better co-products valorization (BioCO<sub>2</sub>, digestate)

Positive regulation introduced in new countries

Gas infrastructure long-term role

New feedstock deposits (biowaste,...)

Energy efficiency

Know-how export to new geographies

Acceptability

Accelerate the development of other green gases to legitimate renewable gas in the transition

# Pushed by EU regulation, interactions between national markets are increasing but are still complex due to very heterogeneous market designs

National market designs vary significantly across Europe with clear distinction between:

- Production-side support (FiT, ...)
- Demand-side support (blending obligations...)

RED II paves the way to the development of national registries in EU countries as well as transborder exchanges of biomethane

Some countries are already trading biomethane

Markets are expected to move toward more demand-side systems and further integration

## Opportunities

- Alternative offtake options
- Drives industry uptake across Europe
- Reduces need for public support / funding

## Challenges

- Complex and non-liquid markets
- Lack of visibility on regulation and opportunities
- Less securing than FiT
- Can go against national objectives



Production-side support: N/A

Demand-side support: HIGH

Value of certificate/GO: HIGH

Transborder exchange: YES (several TWh)



Production-side support: HIGH

Demand-side support: LOW

Value of certificate/GO: LOW

Transborder exchange: NO

# Biomethane is attracting more and more attention from large gas consumers as it offers several advantages

Pushed by regulations, investors and grand public pressure, strategic considerations and rising energy prices, **industrial companies are speeding up on decarbonization**

**The investment in decarbonization solutions is complex** given the lack of visibility on regulation and energy market prices, competitiveness issues, ...

**In this context, biomethane stands as a very demanded solution** as it blends strong decarbonization potential with other advantages.

## Opportunities

- Strong decarbonization potential
- No O&M or process change required
- More and more recognition in markets (eg: ETS)
- Long term visibility on costs
- OPEX intensive solution

## Challenges

- Heterogeneous and changing market designs
- Structuring market, non-liquid
- Competitiveness risk vs. natural gas price

### Illustration:



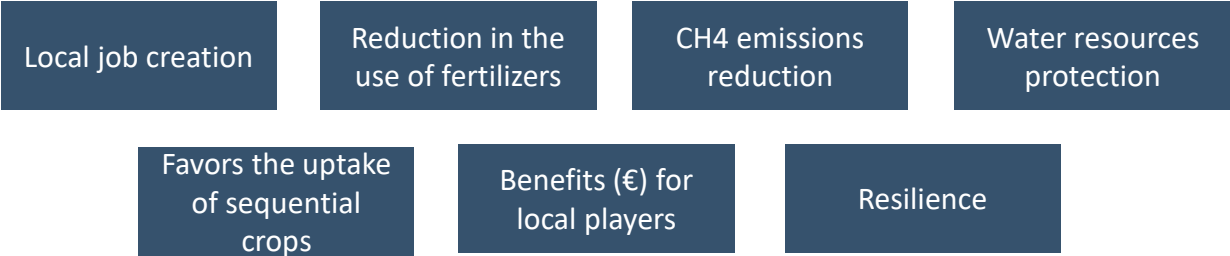
*World leading chemical industry Arkema has signed a long-term contract for the supply of 300 GWh/y of biomethane with Engie.*

*The biomethane will be produced by 17 plants and supplied for a 10y period*

*The biomethane will contribute reducing the GHG footprint of ARKEMA's polymers production.*

# Biogas is about more than just producing renewable energy and other values are getting more and more recognized

Biogas projects come with a lot of diverse benefits that go far beyond the sole production of renewable energy:



Most of these impacts are not fully recognized but should be factored in by governments, investors and biomethane players

If the GHG impact can be monetized through existing mechanisms the other impacts can generally not translate in direct economical benefits yet

Better understanding the impacts of a project can also help players conceive more impactful projects

In some countries such as France, the topic has been on the agenda for several years...



... and a consensus is being built at the European level







## Contact details

### CONTACT PERSONS

---

#### EUROPE PRACTICE LEAD



**Timothé HUSSER**  
*Manager, Paris – 5y of exp.*

- [timothe.husser@enea-consulting.com](mailto:timothe.husser@enea-consulting.com)
- +33 6 28 97 75 23

#### GLOBAL PRACTICE LEAD



**Laurent BLAISONNEAU**  
*Partner, Paris – 15y of exp.*

- [laurent.blaisonneau@enea-consulting.com](mailto:laurent.blaisonneau@enea-consulting.com)
- +33 6 08 49 40 04

### BIOMETHANE MARKET MODEL

---

Blunomy has partnered with Compass Lexecon and is currently developing a **European biomethane market model** (*price and flows forecast*)



**Do not hesitate to reach out to discuss it!**

Paris

London

Singapore

Hong Kong

Melbourne

Sydney

