



CENTRE TECHNIQUE
NATIONAL DU **BIOGAZ**
ET DE LA **MÉTHANISATION**



Biogas Emissions : French current regulation

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Club Biogaz

French AD inter-branch association

Represent our members

- ~260 moral persons (from 90 in 2009)
- Elected steering committee, with members from the 12 Colleges (grouping activities)

- Authorities value our input**
 - 20 years of dialogue
 - ... and actions to promote developing biogas production and use sectors

Founding Member:



ATEE is subsidized by ADEME



Develop a sector

- AD as a tool of ecological and farming transition**
 - Circular local energy
 - Regulatory evolutions
 - Labellisation and good practices
 - Innovation and technology
 - Environmental excellence



- Themes**
 - Training
 - Financing
 - BPA
 - Safety and risks
 - CO2 use
 - ...

Inform & Exchange

- Website
- Technical and regulatory support
- Working Groups

- Services for members**
 - Information e-mailing
 - Technological and regulatory watch
 - Answers to members questions

- Events**
 - Technical webinars
 - Journées Recherche Innovation



French sector overview: figures

- Varied technologies, today mature
- 3850 jobs in 2019
- More than 500 companies : building, operation, services...

Output	CHP	Biomethane
Units on 30/06/23	1046	591
<i>Capacity</i>	585 MW (elec)	10529 GWh/y
Production Q1-Q2 2023 (GWh)	1100	4250
Capacity variation // 2022	+2%	+13%
Current projects	126 (2022)	860
<i>Capacity</i>	72 MW (elec)	15,2 TWh/y



Outline

- ICPE rules
- Work in progress (TF Methane Leaks)

ICPE : Context

- ICPE = classified installations to protect the environment
- Category 2781 covers anaerobic digestion units treating non-hazardous waste
- Lays out rules for general management of AD plants, varying slightly according to size (30 -100 t/d as thresholds), and relationships with public authority (DREAL) including declarations and controls
- Health, Safety and Environment goals
- Latest version published in July 2021, with delays set until 07/23 to enforce on existing plants

ICPE rules regarding methane emissions (rubrique 2781 – 2021)

Article	When?	What?	Fixed method?	Affected equipments
Article 3.7.3 – « <i>Launching Phase</i> »	When launching the unit	Leak tightness report	none	<i>Listed in the article (digesters, relief valves, biogas pipes) + must cover control of pressure / depression valves consigned.</i>
Article 6.4. a	In normal running conditions	Biogas rejection is forbidden.		
Article 3.7.2.- « <i>AD process supervision</i> »	Maintenance program includes half-yearly control or monthly if solid state AD with digester opening (major non-conformity if not updated >18 months)	Maintenance program includes formalized control of equipments at risk of gaseous leakage	none	<i>Minimal list of equipments submitted to tests defined in the article</i>
Article 3.6.2. – « <i>Periodic Check-up of equipments leak tightness</i> »				
Article 2.14	During exploitation in biomethane plants	Maximal ratio CH ₄ /bioCH ₄ released in the air, done by yearly evaluation	No specific calculation method, no measurement required	<i>Offgas release</i>

Offgas release ratios

Unit size	2023-2024	2025 onward
< 50 Nm ³ /h	2%	1%
> 50 Nm ³ /h	1%	0,5%

- Allows for several options to prevent release:
 - Purifying offgas to use CO₂ and recycle CH₄ in the upgrading system
 - Oxidising offgas
- But no measurement nor calculation method imposed.

Digestate storage: how is mandatory covering applied?

- Authorities insist on covering against the rain :
 - prevents dilution and nutrient losses
 - Reduces ammonia volatilization in the air
- Does not ensure residual biogas capture and use as considered in RED II
 - Uncertainties regarding what is best for each unit (high costs)
 - Exemption if ground lagoon and residence time in digester > 80 days

Task Force Biogas fugitive emissions (started June 2023)

Led by A. L'Hostis (ATEE CTBM) and M. Brissaud (CH4Process)



Motivations

- Methane loss = turnover loss
- Climatic impact
- Reputation risk for the whole sector
- Currently discussed EU rules : O&G targeted but could evolve to cover renewable gases

Goals

- Make yearly external campaigns an habit
- Improve leak detection practices after maintenance
- Avoid too stringent future regulations

Outputs proposed

1. Harmonized methodology for leak tightness campaign
2. Conception recommendations to reduce methane emissions
3. References for emission factors depending on leak location

Members

- Leakage tests providers
- IR cameras providers
- Researchers
- AD plants handlers (farmers and energy or waste firms)



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THANK YOU FOR YOUR ATTENTION!