Current Status and Development of the Spanish Market

Biogas and biomethane: market drivers, support schemes and outlook

Javier Rubio, Managing Director | AEBIG, Spanish Biogas Association

WHO IS PRESENTING THIS REPORT

AEBIG: who we are

The Spanish Biogas Association (AEBIG) is a non-profit founded in 2009 that brings together companies, institutions and professionals in the renewable gas sector, spanning the full value chain -developers, engineering firms, technology providers, equipment suppliers, energy companies and academic institutions- and is a founding member of the European Biogas Association (EBA).

2009	**EBA**	**5**	**120+**
Year AEBIG was founded	Founding member of the European Biogas Association	Member countries: Spain, France, Italy...	Members across the sector's value chain

What we represent: the biogas, biomethane and other renewable gases sector, the ecological and energy transition, and the circular economy -waste valorization, bioproducts, emissions reduction, nutrient recovery and rural development.

Source: AEBIG (aebig.org, 2026).

Agenda

1

Biogas and biomethane today

- Market status today
- Plants and infrastructure
- From waste to resource

2

Key market drivers

- Four sources of growth
- Production potential
- Potential by region
- Spain and Germany
- Buyers and guarantees of origin

3

Support schemes and incentives

- Regulatory framework
- Support schemes
- Electoral calendar

4

Outlook and key trends

- 2030 targets: the ambition gap
- Outlook and key trends
- Today's bottlenecks
- Social license and territory
- Conclusions

THE ESSENTIALS AT A GLANCE

Executive summary

163 TWh/yr
Technical potential of biomethane

20 TWh
PNIEC target (biogas) 2023-2030

+30
Biomethane plants operating (as of Sept 26)

245
Projects with technically viable grid connection

Spain has enormous untapped biomethane potential, backed by its large livestock sector and agri-food industry. **Deployment is advancing, but still well below that potential: the official PNIEC target for biogas is a fraction of what the sector considers achievable in biomethane.**

Accelerating growth

Grid injection grew 29% in 2024-2025, well above the pace of previous years.

Investment potential

Up to €40.5 billion if the full identified potential is deployed.

Rural jobs

Tens of thousands of jobs tied to depopulated rural areas.

BIOGAS AND BIOMETHANE IN SPAIN TODAY

Market status today

~270
Biogas plants active
(EBA, 2024)

4.1 TWh
Biogas generated
(EBA, 2024)

+30
Biomethane plants operating
(as of Sept 2026)

>410 GWh
Biomethane injected into the grid
(12 months to late 2025)

What feeds biomethane today



Municipal waste leads today. Agriculture, Spain's largest untapped source, is the next step.

Biomethane plants, 2024-2026

15 — **End of 2024**
End of 2024 per EBA

23 — **Start of 2026**
In operation

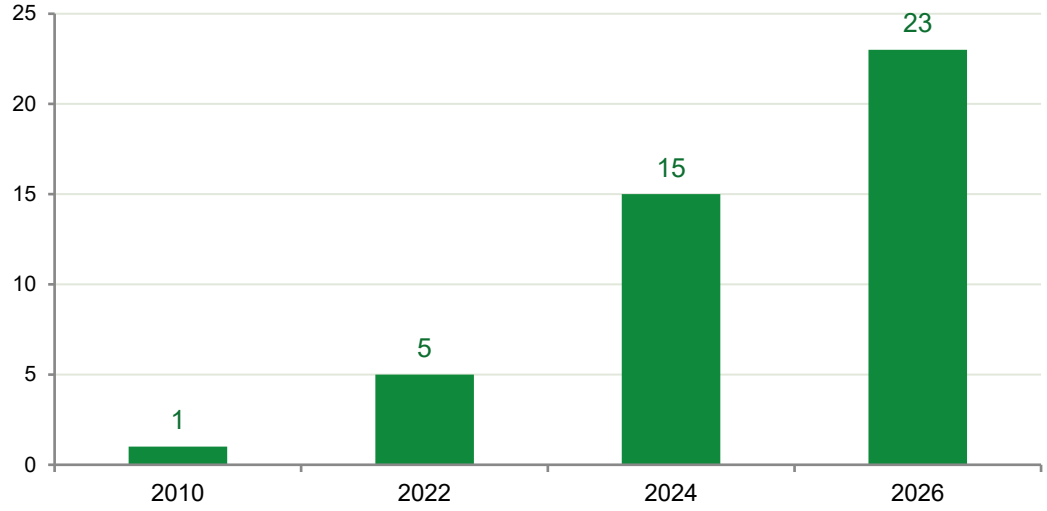
46 — **End of 2026**
Forecast

Source: EBA, 15th Statistical Report (via AEBIG, Dec 2025); Enagás GTS; Sedigas (May 2026); Energética 21 via RUSSPAIN (Oct 2026). Other = remainder to 100%.

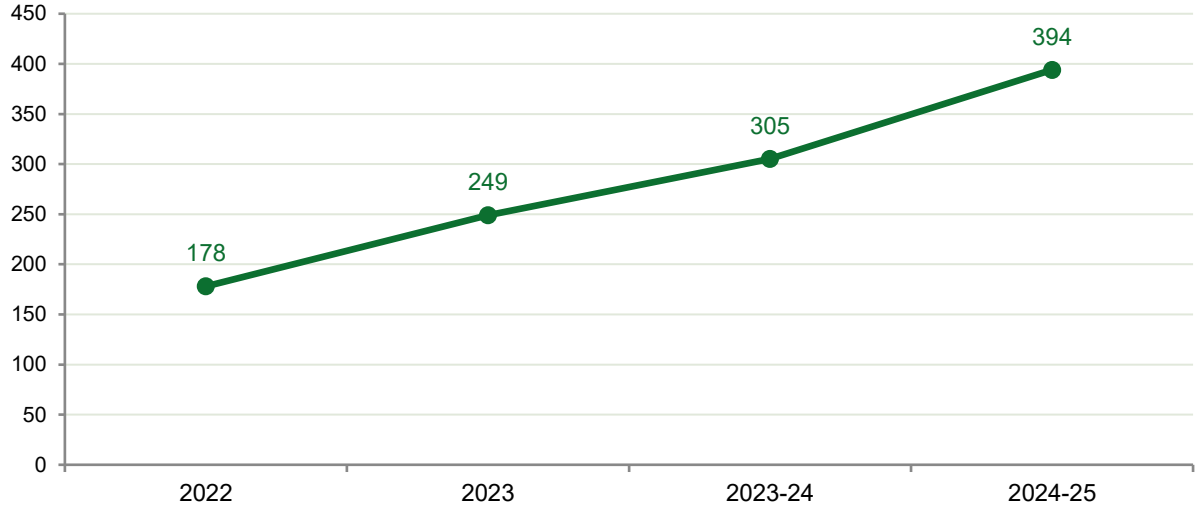
FROM 1 PLANT TO A PIPELINE OF HUNDREDS OF PROJECTS

Plants and infrastructure

Biomethane plants operating in Spain



GWh of biomethane injected into the grid



245
Projects with technically viable grid connection (Enagás)

+29%
Growth in grid injection 2024-25

Compatible
Biomethane uses the existing gas grid

Source: Sedigas; Enagás GTS; ENTSOG (2026).

FROM WASTE TO RESOURCE

We don't create a problem.
We put value on one that already exists.

+200 M

tonnes of livestock and agricultural waste that Spain generates every year

1

The waste is already there

Slurry, manure and crop residues are generated today, whether managed or not, with or without biogas.

2

Anaerobic digestion transforms it

A natural, controlled process extracts its energy and stabilizes its polluting load.

3

The result: energy + fertilizer

Renewable biomethane for the grid, and digestate that replaces imported mineral fertilizer.

Biomethane doesn't create a new environmental impact: it rigorously manages one that already occurs, preventing methane leaks and uncontrolled dumping.

Source: IDEA, MITECO, MAPA and regional governments (2025): 223 Mt/yr of livestock waste + 29 Mt/yr of agricultural residues.

FOUR SOURCES OF GROWTH

Key market drivers

Agriculture

+200 Mt/yr

of waste generated

Only 16% of biomethane comes from agriculture today: the largest untapped source.

Waste management

60%

of today's biomethane feedstock is municipal waste

Mandatory separate collection of bio-waste (Law 7/2022) strengthens supply.

Food processing

9%

of Spain's economy is agri-food

By-products from wine, olive oil, beer and sugar, plus industry that needs renewable heat.

Buyers and traders

0.5% to 6%

proposed biomethane quota, 2028-2035

Quotas, guarantees of origin and industrial buyers create the demand.

Municipal waste leads today; the largest untapped volumes sit in agriculture and food processing, while demand is being built by quotas, guarantees of origin and industrial buyers.

Source: EBA (via AEBIG, 2025); IDEA, MITECO, MAPA (2025); IVIE/Cajamar (2025); Law 7/2022 on waste; MITECO draft Royal Decree (May 2026).

WHERE THE FEEDSTOCK COMES FROM

Production potential

SPAIN'S PRIMARY SECTOR

A feedstock engine that is already in place

9%

of Spain's economy comes from agri-food (EU average: 6%)

#1

EU pig-meat producer, with 23.5% of EU output

2.6 M

jobs in agri-food, 11.5% of Spain's workforce

Where the biomethane feedstock comes from

Livestock

Manure and slurry from pig, cattle and poultry farms

Crop residues

Straw, prunings and other residues left after harvest

Agro-industry

By-products from wine, olive oil, beer and sugar

Wastewater and municipal waste

Sewage sludge and the organic fraction of municipal waste

Cover crops and forest biomass

The source that extends the total potential the most

TOTAL POTENTIAL

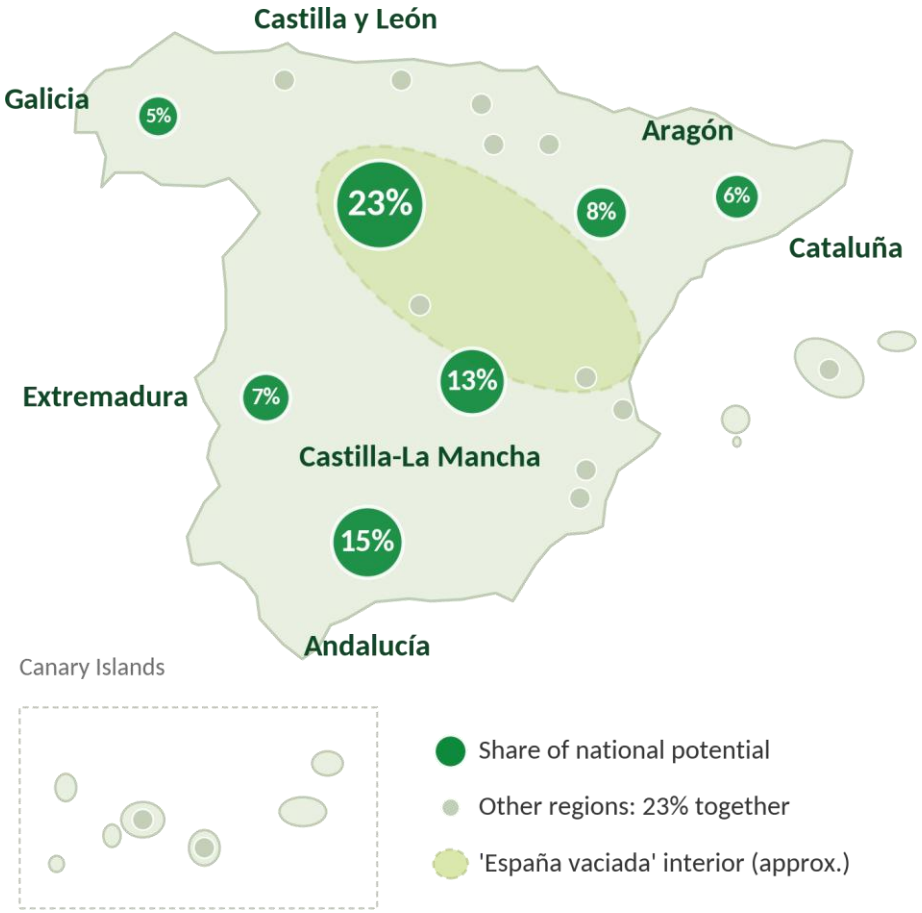
163 TWh/yr

of biomethane, about half of Spain's natural gas demand

Source: PwC, Biovic, Study on biomethane production capacity in Spain (2023); IVIE/Cajamar, Observatory of the Spanish Agri-food Sector (2025); Eurostat, Key figures on the European food chain (2025).

WHERE THE POTENTIAL IS

Potential by region



Strongest where rural Spain needs it most

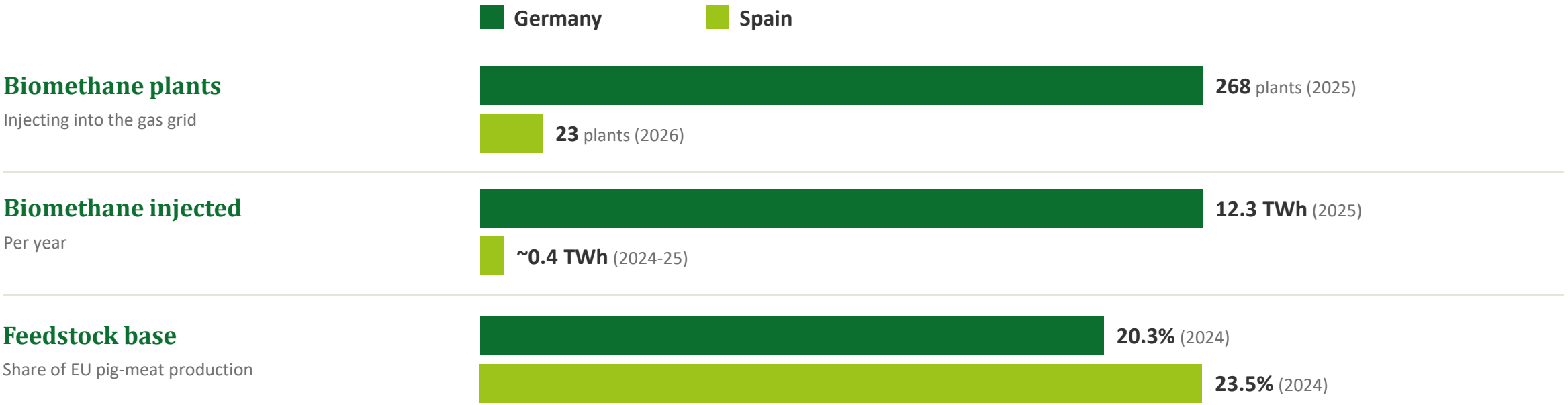
- Five regions hold about two-thirds of Spain's biomethane potential: Castilla y León, Andalucía, Castilla-La Mancha, Aragón and Extremadura.
- Much of it sits in the sparsely populated interior, “España vaciada”: nearly 4,000 municipalities, covering almost half of Spain's territory, have fewer than 12.5 inhabitants per km².
- Biomethane brings stable local jobs, new income for farmers and a productive use for waste right where it is generated.

Where the waste is, the opportunity is.

Source: Study on biomethane production capacity in Spain (2023), figures rounded; Government of Spain, La despoblación en cifras (2020). Map is schematic.

A PROVEN MODEL, A MARKET AT AN EARLY STAGE

Spain and Germany: room to grow



Germany injects about 30 times more biomethane than Spain today. With a comparable feedstock base, Spain has the room to catch up.

Source: dena, Biomethaneinspeisung Deutschland 2025; Fachverband Biogas via ZfK (2026); Sedigas, Enagás (2026); Eurostat, Key figures on the European food chain (2025).

WHERE THE GAS GOES

Biomethane buyers and guarantees of origin

1 Inject

Biomethane enters the existing gas grid.

2 Certify

Enagás issues guarantees of origin (GoO). Platform live since Jan 2023.

3 Trade

GoOs are transferable, also across borders through the AIB platform.

Who is building demand

Utilities and retailers

Utility operates 3 biomethane plants and has signed partnerships for at least 40 new ones.

Industry

Industrial JV plans 4 to 6 plants in Andalusia, about 60 GWh/yr each, to replace natural gas at its energy parks and chemical plants.

Transport (bio-LNG)

signed Spain's first long-term liquid biomethane supply contract.

A European biomethane mechanism to match producers and buyers is due to hold its first round in autumn 2026.

Source: Enagás GTS (via El Economista, 2024); Naturgy (May 2025); Moeve (Jan 2026); Energías Renovables (2023); RUSSPAIN (Oct 2026).

PNIEC AND THE BIOGAS ROADMAP

Regulatory framework

Biomethane development in Spain rests on two instruments: the Biogas Roadmap (2022) and the PNIEC 2023-2030 (2024), which raised the initial biogas target of the PNIEC 2021-2030 (10.4 TWh) to 20 TWh.

Biogas Roadmap (MITECO, 2022)

1%
Minimum target for renewable gas in the grid by 2030

150 M€
Grants from Spain's Recovery Plan (PRTR)

PNIEC 2023-2030 (RD 986/2024)

20 TWh
Biogas target for 2030

50%
Reduction in energy dependence

Sector assessment

- The PNIEC 2023-2030 nearly doubles the PNIEC 2021-2030 target (from 10.4 to 20 TWh), a step forward, but still described by the sector as "not ambitious enough."
- The identified technical biomethane potential (163 TWh/yr) is 8 times larger than the official biogas target (20 TWh).
- The sector proposes an intermediate biogas target of 35 TWh for 2030.

Source: MITECO, Biogas Roadmap (2022) and Royal Decree 986/2024 (PNIEC 2023-2030); CNMC, report IPN/CNMC/025/26 (Jul. 2026); Study on biomethane production capacity in Spain (2023) for the technical potential.

WHAT SUPPORTS THE MARKET

Support schemes and incentives

Capital grants (PRTR)

€76.5 M

awarded to 81 biogas projects (188 MW), mobilizing €475 M of investment. Total envelope: €150 M.

Biomethane quota

0.5% to 6%

minimum share of biomethane in gas sales, 2028 to 2035. Draft Royal Decree; public consultation closed in June 2026.

Guarantees of origin

Tradable

Enagás-managed GoOs give biomethane a certified green value that can be sold on its own.

Grid connection

System-backed

Draft decree: reverse-flow equipment paid by the gas system; direct connection lines handed over to it.

Next: approve the quota decree, align tax treatment with renewable electricity, and match quota pace to real biomethane availability.

Source: IDAE (2023); MITECO draft Royal Decree via IndustriAmbiente (25 May 2026); Enagás GTS; CNMC, report IPN/CNMC/025/26 (Jul 2026).

A CLEAR ROAD AHEAD

Electoral calendar: a clear road ahead

5 Oct 2026

Parliament dissolved and general election called (Royal Decree 806/2026)

29 Nov 2026

General election. New Cortes constituted on 23 December

23 May 2027

Municipal elections (8,132 municipalities) and regional elections in 10 regions, including Castilla-La Mancha and Valencia

2028

First biomethane quota: 0.5% (proposed)

Why it matters for biogas, and why it is good news

1 A clear timetable

Election on 29 November, new Parliament in December and local and regional elections in May 2027: a defined calendar that investors can plan around.

2 A framework ready to approve

The draft biomethane decree (quota from 0.5% in 2028 to 6% in 2035) has already been through public consultation. The sector's priority is a swift approval by the incoming Government.

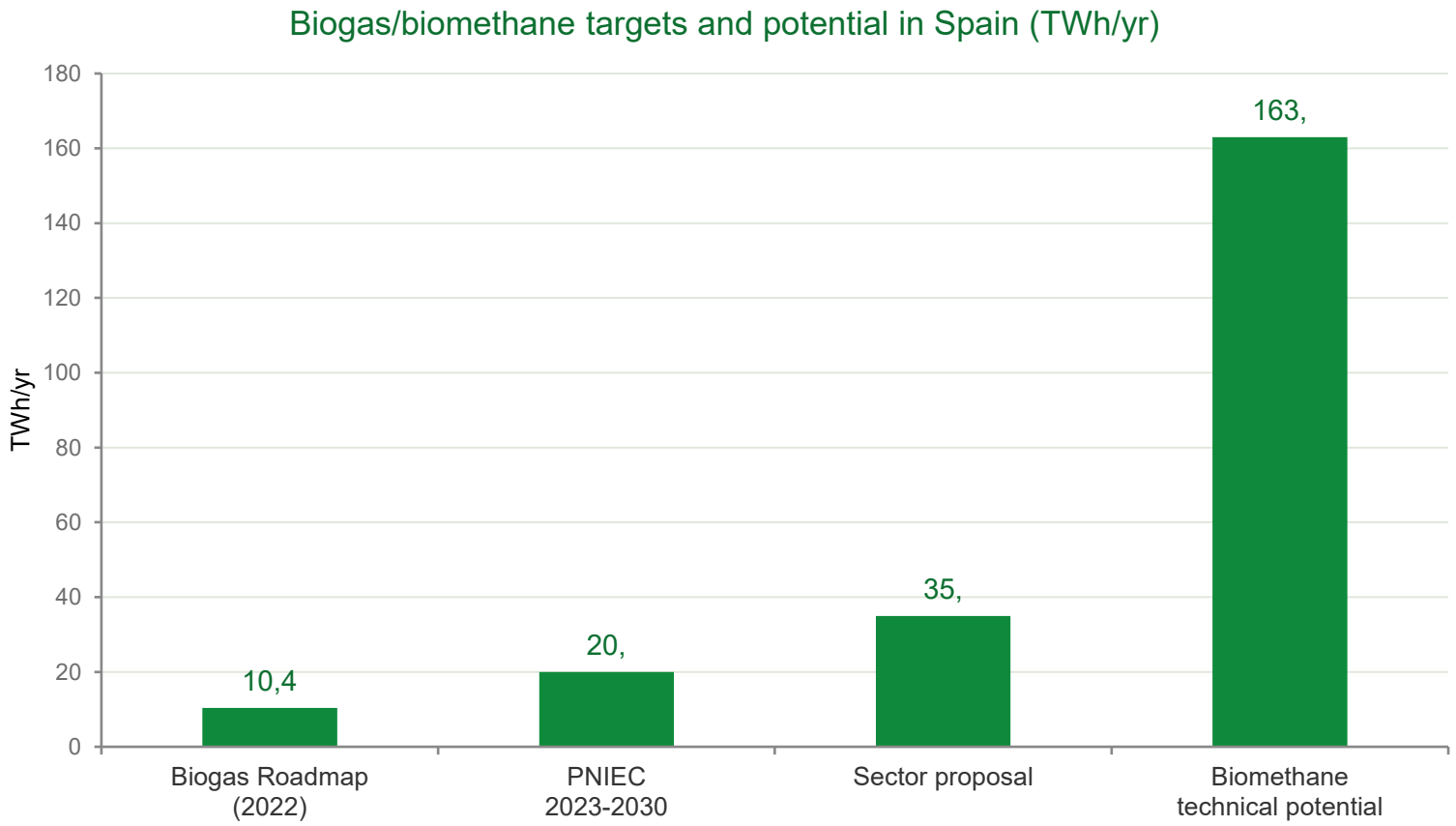
3 Permits are local and regional

Municipalities and regions grant the licenses. May 2027 renews local and regional governments in 10 regions: a chance to open dialogue early.

Source: La Moncloa (5 Oct 2026); politicaelectoral.com; El Pespunte and Wikipedia (May 2027 elections); MITECO draft Royal Decree (May 2026).

FOUR HORIZONS, ONE POTENTIAL

2030 targets: the ambition gap



Takeaway

- The official PNIEC target (biogas) is just over one-eighth of the identified technical biomethane potential.
- Even the sector's most ambitious proposal (35 TWh of biogas) would cover only one-fifth of the biomethane potential.
- The gap reflects regulatory and grid-connection barriers, not a limit on the available resource.

Source: MITECO; Study on biomethane production capacity in Spain (2023).

WHAT COMES NEXT

Outlook and key trends

End 2026

~46 plants and 4.6 TWh/yr of capacity (Sedigas forecast)

2027

11-14 TWh/yr of capacity, 3-5% of gas demand (Sedigas projection)

2028

First biomethane quota: 0.5% (proposed)

2030

Up to 22 TWh/yr if all planned projects proceed; PNIEC target 20 TWh

2035

Quota reaches 6% (proposed)

Three trends to watch

A real pipeline

~400 projects

planned, about €4 bn of investment; 245 have a technically viable grid connection (Enagás).

Capital is arriving

€42.5 M

ING-financed biomethane plant in León: 125 GWh/yr, operating from Q1 2027. Utilities are signing partnerships for 40+ plants.

Rural impact at scale

>60,000 jobs

permanent jobs and €40.5 bn of investment if the full identified potential is deployed.

Source: Sedigas via IndustriAmbiente (May 2026); RUSSPAIN (Sep-Oct 2026); Enagás (2026); PwC, Biovic (2023); MITECO, PNIEC 2023-2030.

WHAT SLOWS DEPLOYMENT, AND WHAT WE ARE DOING

Today's bottlenecks

Social license

THE CHALLENGE

Local acceptance depends on early dialogue, odor control, traceable digestate management and a visible local return.

WHAT AEBIG IS DOING

Training for members on social acceptance and a ten-decision checklist, from siting to public monitoring indicators.

Digestate use

THE CHALLENGE

Digestate is a valuable organic fertilizer, but it needs clear rules and an established market to replace mineral fertilizer at scale.

WHAT AEBIG IS DOING

Working with administrations and members to give digestate a clear rulebook and recognized value as a fertilizer.

Permitting

THE CHALLENGE

Authorization involves several administrations with limited resources, so procedures and grid access are still slow.

WHAT AEBIG IS DOING

Working with administrations to streamline and coordinate permitting and grid-connection procedures.

Unlock these three, and the 245 projects with a technically viable grid connection can move forward.

Source: AEBIG; Enagás (2026); AEBIG internal course on social acceptance (2026).

THE OTHER DEPLOYMENT CHALLENGE

Social license and territory

Biogas growth is not free of local tensions. As experience shows, local opposition appears when a project arrives without prior dialogue, without verifiable environmental guarantees, or without a visible return for the community.

Siting

Distances, access and compatibility with existing land uses

Design

Containment, odor control and risk prevention

Operation

Maintenance, traceability and early response to incidents

Relationship

Ongoing listening, verifiable commitments and local return

Communication does not make up for bad design. Trust is earned when commitments are kept.

What usually drives local opposition

- A project arriving with no prior information or dialogue with residents and local councils.
- Doubts about odor control, truck traffic and digestate management.
- The perception that the economic benefit doesn't stay in the municipality.
- A lack of public, verifiable indicators on how the plant actually operates.

Measures to make biogas and territory go hand in hand

- Information and dialogue from the design phase onward, not only during permitting.
- Verifiable commitments: odor control, traceable digestate management, emergency plans.
- Tangible local return: local jobs, social tariffs or community development funds.
- A stable listening channel and public indicators throughout the project's whole lifetime.

THE TAKEAWAYS

Conclusions

From waste to resource

Biomethane puts value on the +200 million tonnes of waste that Spain already generates every year.

Raise the ambition

The PNIEC's biogas target (20 TWh) is only a fraction of biomethane's technical potential (163 TWh).

Speed up the grid

Streamline permitting and gas grid connection for the 245 projects already viable.

Mobilize investment

Combine public funding (PRTR) with private investment to close the gap.

Care for the territory

Without social license, dialogue and local return, there is no possible deployment.

Measure the real impact

Recognize the value of biomethane and digestate in national emissions accounting.

From waste to resource: Spain's biomethane

aebig@aebig.org

+34 915 245 715

www.aebig.org