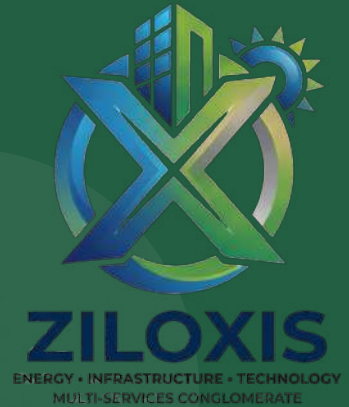


CBG KNOWLEDGE DECK

Understanding CBG

From technical concept to business opportunity



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What is CBG?

Understanding CBG and how it differs from CNG

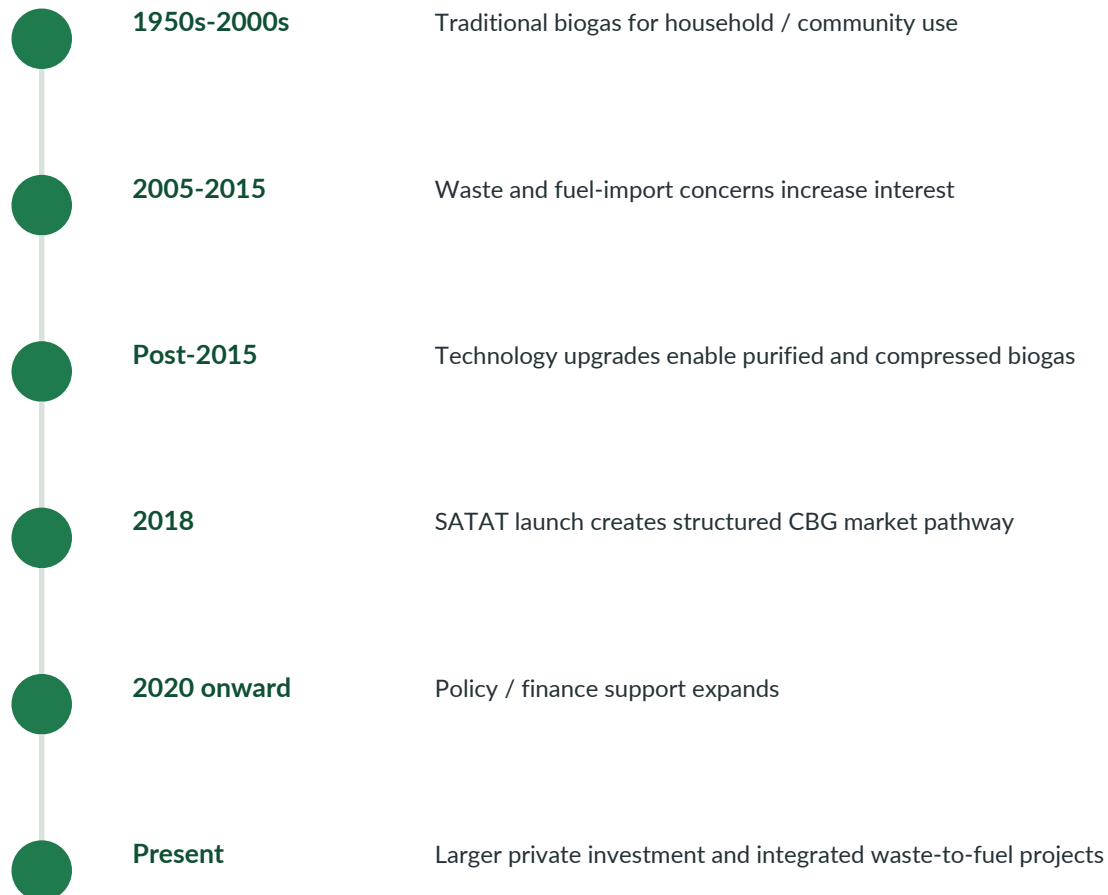
Parameter	CBG (typical target)	CNG (typical range)
Methane (CH4)	~90% minimum / as contract requires	Typically high methane content
CO2	Low after upgrading	Low
Oxygen / Nitrogen	Controlled	Controlled
H2S	ppm range	Very low
Moisture	Controlled	Controlled
Odorization	As required by downstream use	Common for distribution

CBG vs CNG - Business Context

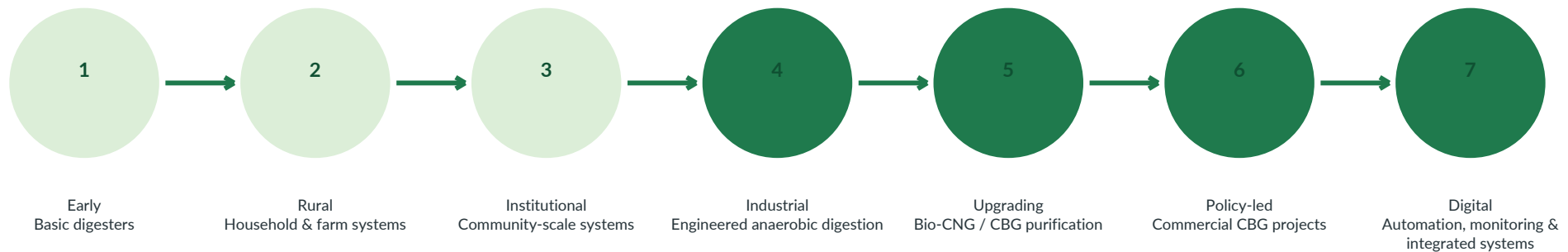
CBG	CNG
Made from organic waste / biomass	Derived from fossil natural gas
Renewable route	Non-renewable route
Supports waste-management and circular economy	Primarily fuel-supply value chain
Anaerobic digestion + upgrading	Extraction + gas processing
Feedstock cost can vary by geography and season	Gas price linked to conventional market dynamics

Why CBG is a Promising Business

Policy support, offtake pathways and rising clean-fuel demand



Technology Evolution of Biogas



Government Schemes - Source Summary

Figures are indicative from the supplied source material; verify current scheme notifications before use

Scheme / support	Type	Illustrative benefit / note
SATAT	Policy + market + finance	OMC offtake route and priority-lending linkage
Waste-to-Energy / National Bioenergy	Central financial assistance	Source deck notes capital subsidy support for eligible CBG plant capacity
BioURJA	Subsidy disbursement	Mechanism for release of eligible subsidy
Agriculture Infrastructure Fund	Loan + interest support	Source deck notes interest-subsidy route for eligible loans
Biomass Aggregation Machinery	Machinery support	Support for eligible biomass collection / aggregation equipment
State support (example UP)	Capital / fiscal	May include production subsidy, exemptions, land or utility support

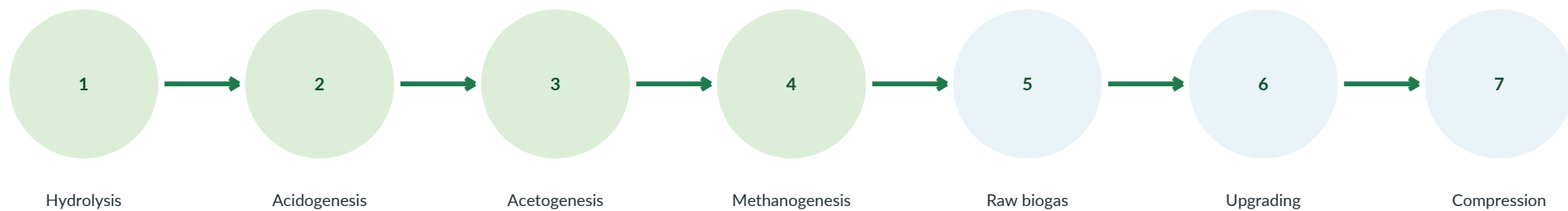
Illustrative CBG Sale Price Build-up

Example taken from the supplied presentation; actual commercial terms depend on current CNG price and contract

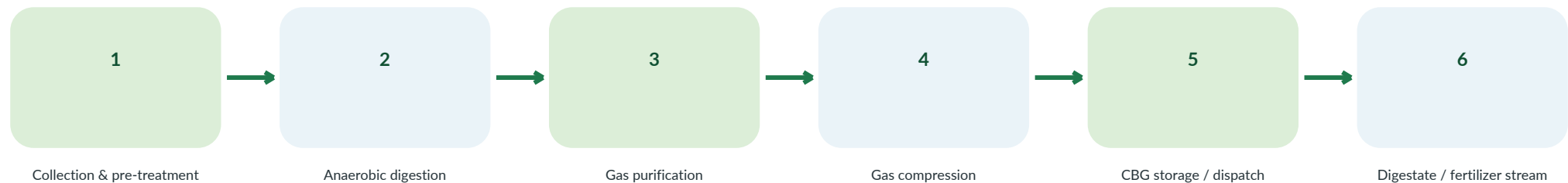
Particular	Rs/kg (illustrative)
CNG retail price	92
Less: taxes & VAT	5
Less: dealer + CGD margin	10
Less: transport & handling	5
Illustrative CBG purchase price	72

How Compressed Biogas is Produced

CBG is produced by upgrading raw biogas through membrane, molecular or chemical separation techniques. Biogas itself is produced from organic waste by anaerobic digestion.



Compressed Biogas Generation Process



Bio-Reactor Technologies

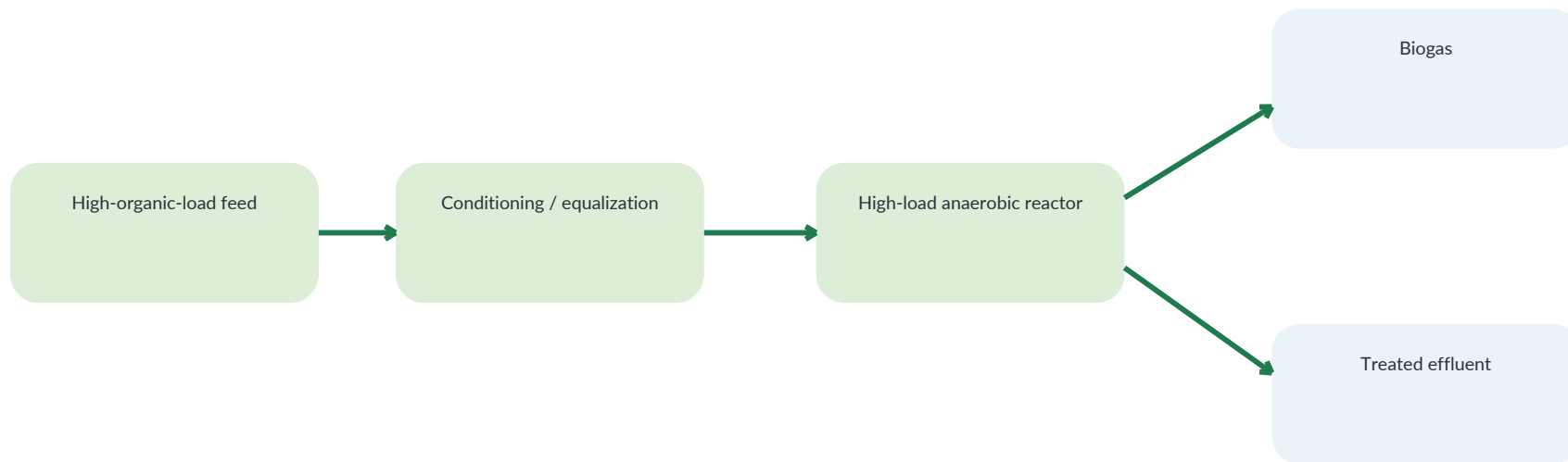
Continuous Stirred Tank Reactor (CSTR)

A mixed anaerobic digestion vessel used for liquid / slurry feedstocks. Key operating variables include organic loading rate, temperature, pH, retention time, mixing intensity and gas collection.

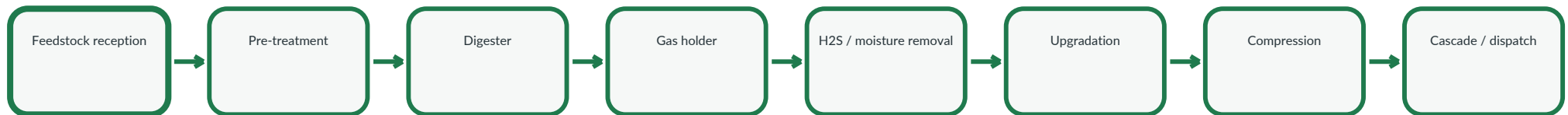
High-load Reactor Technology

High-load anaerobic systems are designed for feedstocks or wastewater with elevated organic load. Reactor selection depends on substrate characteristics, hydraulic profile, solids content and project economics.

High-load Reactor - Conceptual Flow



Single-Line Process Diagram - Conceptual



Side stream: digestate separation -> liquid / solid fertilizer handling

Plant Model - Functional Zones

Raw material storage

Pre-treatment

Digesters

Utility / control rooms

Gas upgrading

Compression & storage

Types of Feedstock for Biogas Production

Agricultural waste

Food waste

Animal manure

Energy crops

Sewage sludge

Organic / process waste

Biomass and Its Yield - Source Table

Biomass	Avg. biogas m3/ton	CBG kg/ton	Approx. tons for 2 TPD
Press mud	95	42.75	47
Spent wash	80	36	56
Bagasse	145	65.25	31
Agri residue (dry)	195	87.75	23
Agri residue (green fodder)	170	76.5	26
Poultry waste	120	54	37
Municipal solid waste	120	54	37
Food & vegetable waste	95	42.75	47
Paper pulp / sewage / starch waste	95	42.75	47
Napier grass	120	54	37

Discuss your CBG project with ZILOXIS

Feasibility, engineering coordination, EPC support, financing assistance and project execution.

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