

INDUSTRIAL BUSINESS UNIT

Circular Economy
Biogas Upgrade solutions by SIAD





PETROS PETROPOULOS GROUP 1922 - 2025

103 years of **Leadership** and **Innovation** in the Greek automotive related distribution & manufacturing business

PIONEERING HISTORY: 1922-2025



Started with bell casting factory

End of
19th
century



Establishment in Thessaloniki – Assembly of cars

1922



Biggest General Engine Overhaul Factory in North Greece

1930



Distributor of Perkins Diesel Engines

1953

1959

Pioneered manufacturing of Agricultural Tractors



1976

Pioneered Design & Manufacture of a 4X4, 2-ton, all Purpose Agricultural and Military Truck – The Polytrak



1992

Pioneered System of EVA measurement and Organization in Autonomous Business Units



1999

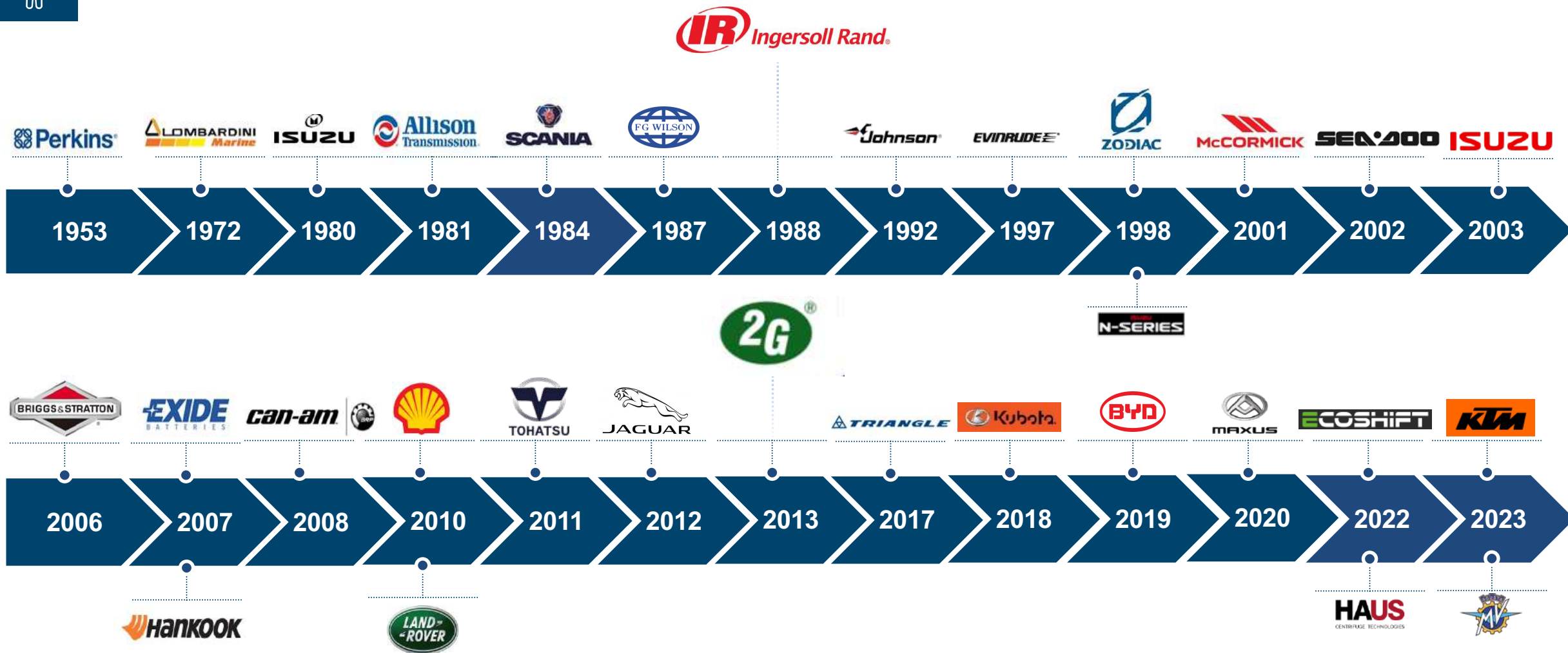
Listing in the Athens Stock Exchange





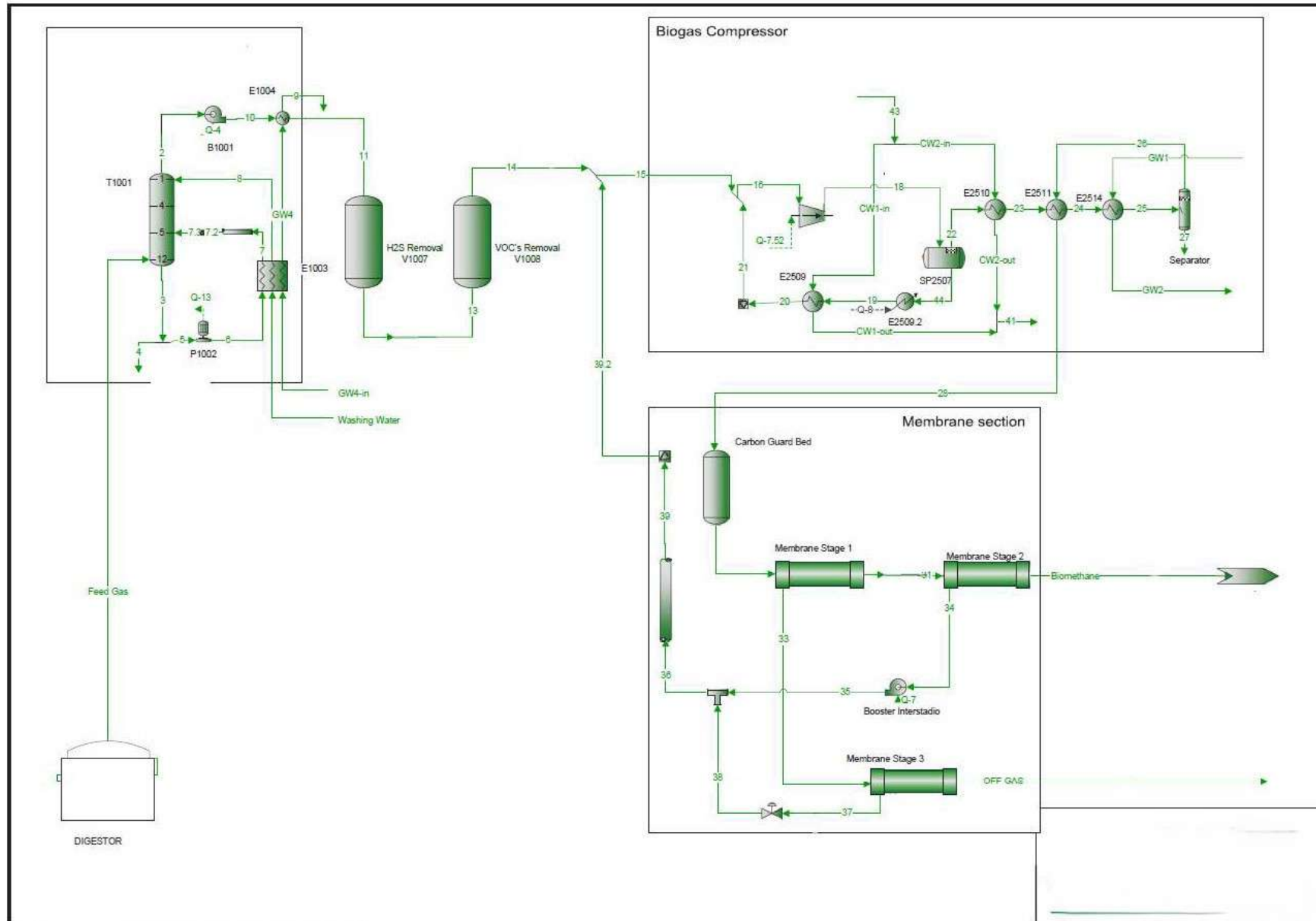
Strategic Alliances

World Class Brands



a Story of Long-Term Relationships

Plug and play biogas upgrading system



Biogas booster and gas pretreatment solutions



**Removal of NH₃ , H₂S
VOC, Siloxane**

Complete solution for Biogas compression

With 10000 units in operation, Adicomp - **an Ingersoll Rand brand** - have been recently recognized as a worldwide leading company for the development and production of gas compression solutions with a particular focus on packages dedicated to the RNG market:

- Gas compressors for feeding Upgrading Gas Technologies
- Gas Compressors for grid injection.




Tailored & fully customized solutions for every biomethane project

Adicomp compressors are **tailored & fully customized** according to biomethane project requirements with operating pressures up to 16 barg and VFD control for varying flow needs .



Biogas upgrade to Biomethane

 SIAD is an international group active for almost 100 years in the businesses of Industrial Gases, Engineering, LPG and Natural Gas. Present worldwide with manufacturing and trading companies.

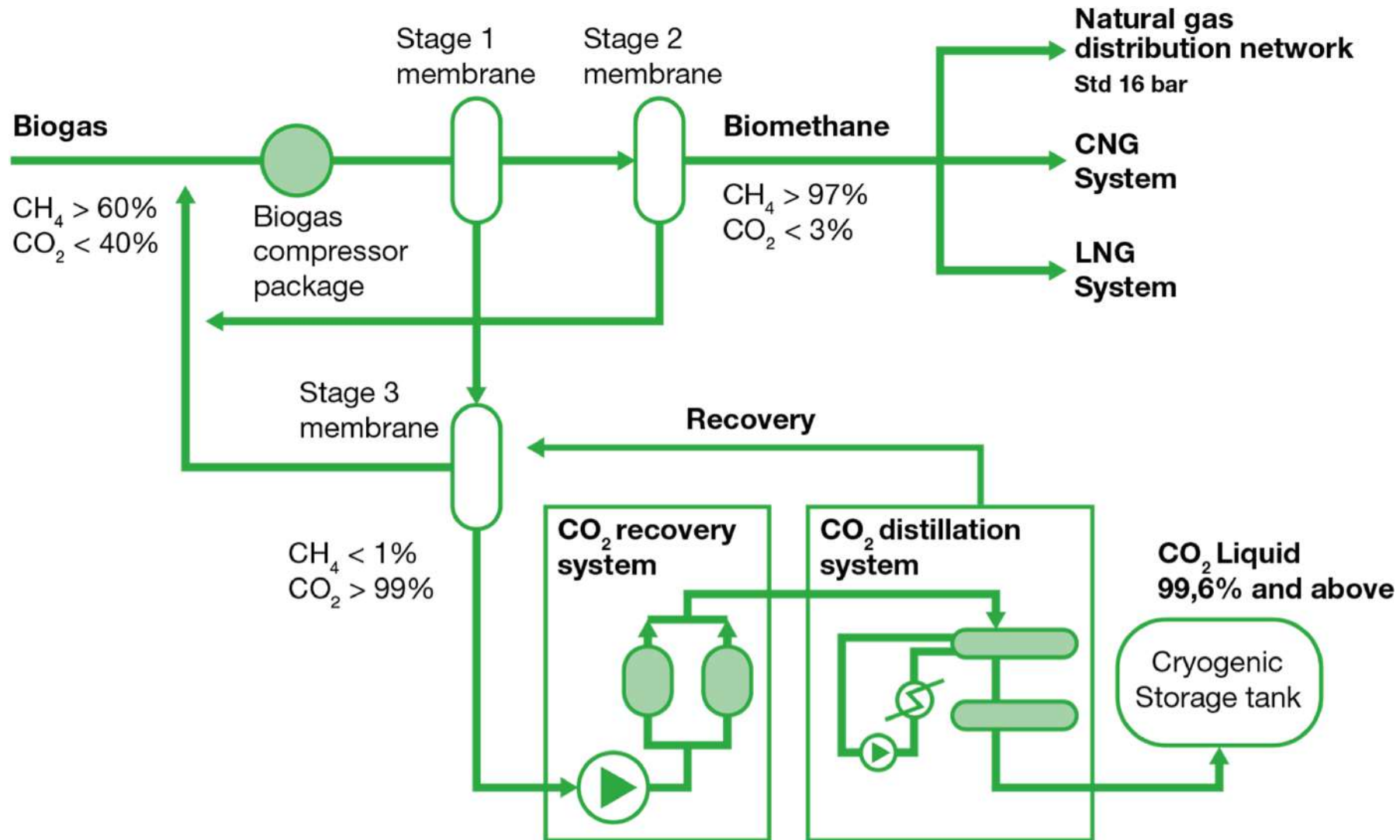
SIAD is able to clean biogas from any kind of source (Organical Waste - FORSU, agriculture byproduct, sewage sludge, paper mills, food products, breweries, distilleries etc)

The best technologies for the biogas treatment are:

- **Biogas upgrading systems with 3-stage HPSM Membrane:** ultra-high selectivity polymeric refinement membranes (HPSM) that allow the achievement of high refined gas flow rates and high yields without using chemical agents.
- **Biogas upgrading systems dedicated solvent:** enriched with specific additives suitable for the treatment of biogas, that also allow the removal of CO₂ without any special pre-treatment process.



Biogas upgrading with 3-stage HPSM membrane systems



Biomethane compression for grid injection or Virtual piping



CNG Compressor and filling stations



SIAD Smart LNG plants



«SMART LNG» plant type	Nm ³ /h	TPD	Kg/h
SMART LIN-LNG Liquefaction frigories from Liquid Nitrogen (LIN)	50 - 280	1 - 5	40 - 208
SMART DCE-LNG Direct compression, cooling, expansion and liquefaction of methane	280 - 840	5 - 15	210 - 625
SMART TB-LNG Turbo Brayton cycle with expander	840 - 33 600	15 - 600	415 - 25 000

SIAD CO₂ Recovery and Liquefaction plants

- CO₂ recovery and liquefaction plants are installed when the CO₂ content in the raw gas is higher than 80%. For lower CO₂ percentages, on the other hand, an additional extraction system upstream of the recovery/liquefaction plant is needed.
- SIAD CO₂ recovery plants meet all requirements of efficient carbon dioxide treatment: maximum purity with lowest O₂ content and maximum yield.



CO₂ Treatment and Recovery

CO₂ Treatment and Recovery Systems

CO₂ Production Systems

CO₂ Capture Systems

CO₂ Purification

CO₂ Liquefaction and Stripping Systems

CO₂ Evaporators

Gas Analysis Systems

SIAD biogas indicative upgrading references

YEAR	CUSTOMER	SITE	TYPE OF EQUIPMENT	CAPACITY	QTY
2025	SOC. AGRICOLA ASSORO BIOMETANO	ITALY	CO ₂ RECOVERY PLANT	1000 kg/h	1
2025	MOTTA ENERGIA SOC. AGRICOLA	ITALY	CO ₂ RECOVERY PLANT	2000 kg/h	1
2025	EPC CONTRACTOR ⁽¹⁾	SLOVAKIA	BIOGAS UPGRADING PLANT	650 Nm ³ /h	1
2025	EPC CONTRACTOR ⁽¹⁾	ITALY	BIOGAS UPGRADING PLANT	940 Nm ³ /h	1
2025	EPC CONTRACTOR ⁽¹⁾	ITALY	BIOGAS UPGRADING PLANT	940 Nm ³ /h	1
2025	EPC CONTRACTOR ⁽¹⁾	ITALY	BIOGAS UPGRADING PLANT	940 Nm ³ /h	1
2025	CLARKE X BANNALEC	FRANCE	BIOGAS UPGRADING PLANT	623 Nm ³ /h	1
2025	FRI-EL SERMIDE	ITALY	BIOGAS UPGRADING PLANT	435 Nm ³ /h	1
2025	CASCINA ORLANDO EMB SOC. AGRICOLA	ITALY	BIOGAS UPGRADING PLANT	870 Nm ³ /h	1
2025	CASCINA VALENTINO EMB SOC. AGRICOLA	ITALY	BIOGAS UPGRADING PLANT	435 Nm ³ /h	1
2025	CASCINA CASELLA EMB SOC. AGRICOLA	ITALY	BIOGAS UPGRADING PLANT	435 Nm ³ /h	1
2025	CASCINA BREDA EMB SOC. AGRICOLA	ITALY	BIOGAS UPGRADING PLANT	435 Nm ³ /h	1
2025	CLARKE X INJ LUDRES	FRANCE	BIOGAS UPGRADING PLANT	628 Nm ³ /h	1
2025	CLARKE X INJ GENNEVILLIERS	FRANCE	BIOGAS UPGRADING PLANT	474 Nm ³ /h	1
2025	SIAD	ITALY	CO ₂ RECOVERY PLANT	440 kg/h	1
2024	LANDRIANO BIOMETANO	ITALY	CO ₂ RECOVERY PLANT	775 kg/h	1
2024	LANDRIANO BIOMETANO	ITALY	BIOGAS UPGRADING PLANT	965 Nm ³ /h	1
2024	SIAD	ITALY	CO ₂ RECOVERY PLANT	733 kg/h	1
2024	SIAD	ITALY	CO ₂ RECOVERY PLANT	550 kg/h	1
2024	CLARKE X UNIERGIE	FRANCE	CO ₂ RECOVERY PLANT	975 kg/h	1
2024	SOC. AGRICOLA CERIOLO PRIMO	ITALY	BIOGAS UPGRADING PLANT	435 Nm ³ /h	1
2024	CLARKE X COOPERL	FRANCE	CO ₂ RECOVERY PLANT	840 kg/h	1
2024	PRODEVAL	FRANCE	CO ₂ RECOVERY PLANT	330 kg/h	1
2024	SMART BIOSERVICES	ITALY	BIOGAS UPGRADING PLANT	1000 Nm ³ /h	1
2024	CLARKE ENERGY x ELIVIA	FRANCE	CO ₂ RECOVERY PLANT	250 kg/h	1

Petros Petropoulos compressed air references in Greece and overseas - energy sector



Petros Petropoulos cogeneration and gas treatment references



Service / Spare parts / Support

Plant Erection and Start-up

- Mechanical / Electrical Supervisor
- Commissioning Engineer
- On site Training

Maintenance & Spare Parts

- Spare parts fast delivery
- Active Carbon Replacement
- CO₂ plants service level agreement

Engineering & Continuous Improvement

- Performance optimization
- Equipment up-grade
- Gas analysis

Industrial Business Unit offers a full range of integrated service solutions, including digital services, extended network of trained technicians, total care contracts and a 24/7 proactive helpdesk.

To ensure continuous operation and maintain the high efficiency of its Biogas upgrading Plants, we offer convenient and handy services, utilizing skilled technicians.

- Maintenance interventions
- Spare Parts supply
- Service Level Agreements
- Remote assistance
- Training courses.



Service / Spare parts / Support



 Κινητές Μονάδες Υποστήριξης



ΠΙΣΤΟΠΟΙΗΤΙΚΟ

Για το Σύστημα Διαχείρισης σύμφωνα με το Πρότυπο EN ISO 9001 : 2015

Τεκμηριώθηκε και βεβαιώνεται μέσω των Διαδικασιών της TÜV AUSTRIA, ότι η



ΠΕΤΡΟΣ ΠΕΤΡΟΠΟΥΛΟΣ Α.Ε.Β.Ε.
Ιερά Οδός 96-102
104 47 ΑΘΗΝΑ, ΕΛΛΑΔΑ

Εφαρμόζει ένα Σύστημα Διαχείρισης για την Ποιότητα σε συμφωνία με το παραπάνω Πρότυπο για το ακόλουθο Πεδίο Εφαρμογής:

- ΕΜΠΟΡΙΑ, ΕΓΚΑΤΑΣΤΑΣΗ & ΥΠΟΣΤΗΡΙΞΗ ΜΕΤΑ ΤΗΝ ΠΩΛΗΣΗ ΕΞΟΠΛΙΣΜΟΥ ΠΕΠΙΣΜΕΝΟΥ ΑΕΡΑ & ΑΕΡΙΩΝ.
- ΕΜΠΟΡΙΑ, ΕΓΚΑΤΑΣΤΑΣΗ & ΥΠΟΣΤΗΡΙΞΗ ΜΕΤΑ ΤΗΝ ΠΩΛΗΣΗ ΣΥΣΤΗΜΑΤΩΝ ΣΥΜΠΑΡΑΓΩΓΗΣ ΗΛΕΚΤΡΙΚΗΣ ΕΝΕΡΓΕΙΑΣ ΚΑΙ ΘΕΡΜΟΤΗΤΑΣ ΥΨΗΛΗΣ ΑΠΟΔΟΣΗΣ.

Αριθ. Εγγραφής Πιστοποιητικού: 01012578 Ισχύει έως 2027-05-10
Αρχική πιστοποίηση: 2016-04-04


 Μαρία Αγαθού
 Διευθύντρια Πιστοποίησης Συστημάτων Διαχείρισης και Προϊόντων

Οργανισμός Πιστοποίησης: TÜV AUSTRIA Αθήνα, 2024-05-17

Η παρούσα Πιστοποίηση πραγματοποιήθηκε σύμφωνα με την Διαδικασία Επιθεώρησης και Πιστοποίησης της TÜV AUSTRIA και επιτηρείται σε τακτά χρονικά διαστήματα.

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An aerial photograph of an industrial site. In the center, there are three large, cylindrical storage tanks with green lower sections and white conical tops. To the right, a blue truck is parked next to a white tanker. In the foreground, there is a large, dark-colored industrial building with a corrugated metal roof. The facility is surrounded by green grass and some paved areas. A semi-transparent blue box with the text "THANK YOU" is overlaid on the right side of the image.

THANK YOU