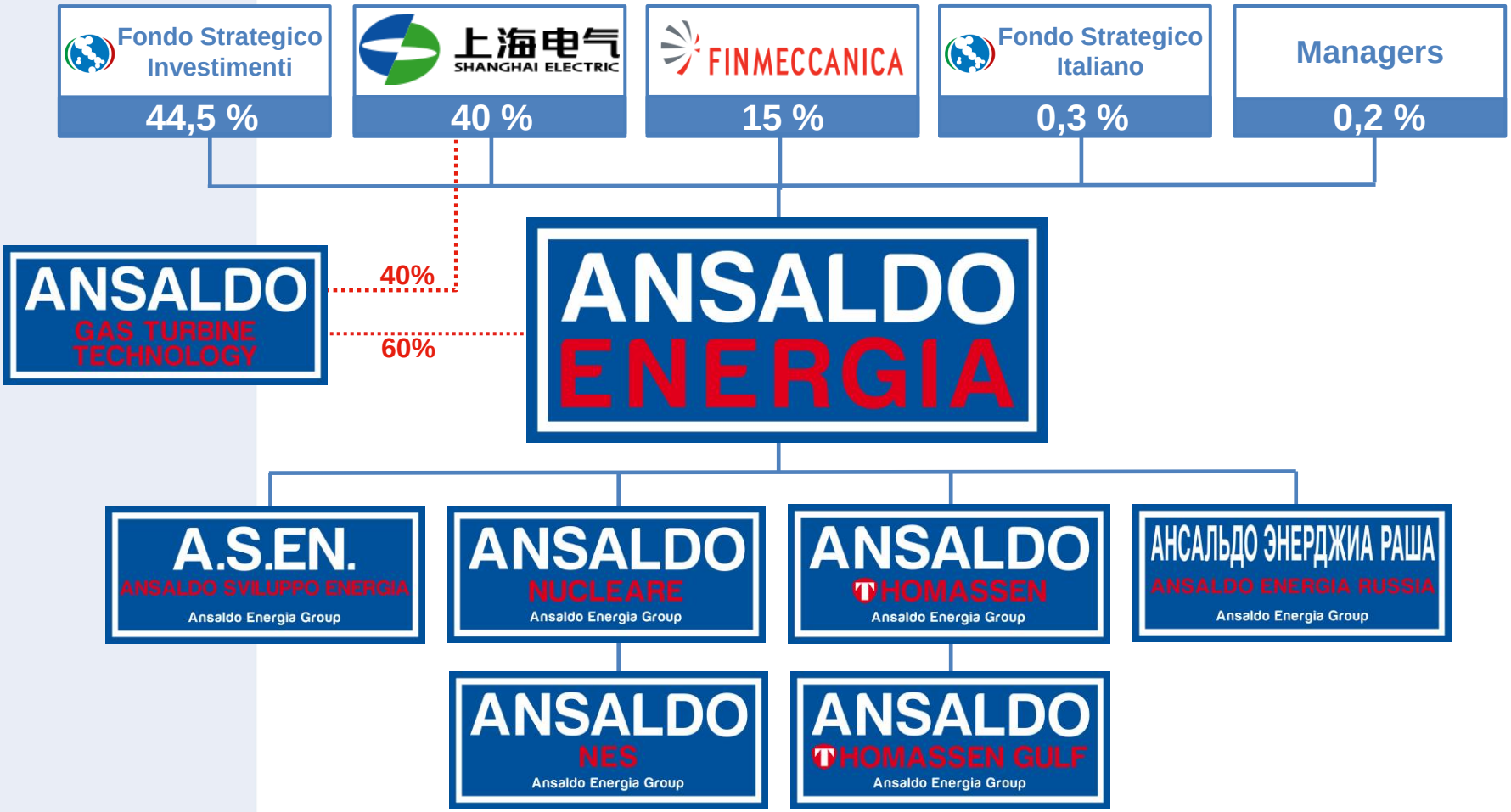
2015-05-12
City University London

European Turbine Network
Micro Gas Turbine meeting

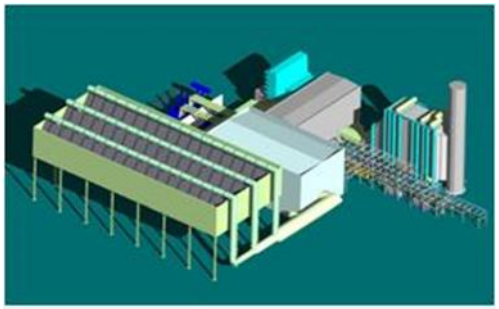
Ansaldo Energia
AE-T100
Micro Turbine

ANSALDO ENERGIA

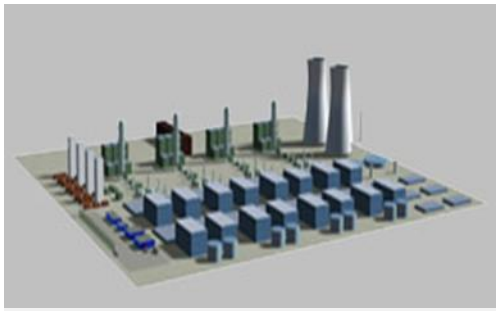
ANSALDO ENERGIA GROUP



COMPANY PRODUCTS AND SERVICES



Open and Combined Cycles Power Plants



Thermal Power Plants

Equipment: Gas Turbines, Steam Turbines and Turbogenerators

Service on AEN installed fleet (OEM)

Service on third party installed fleet (OSP™)

GAS TURBINE PORTFOLIO

	Model	Power [MW]	Class
	AE64.3A	75	F
	AE94.2 AE94.2K	185 170	E E
	AE94.3A	310	F
	AE-T100	0,1	

AE-T100 Evolution

Ansaldo Energia has entered into the micro turbine business with the acquisition of Turbec technology in late 2012.

2013

AE-T100

1997

1° Prototype

2003

T100

Series III

1999

T100

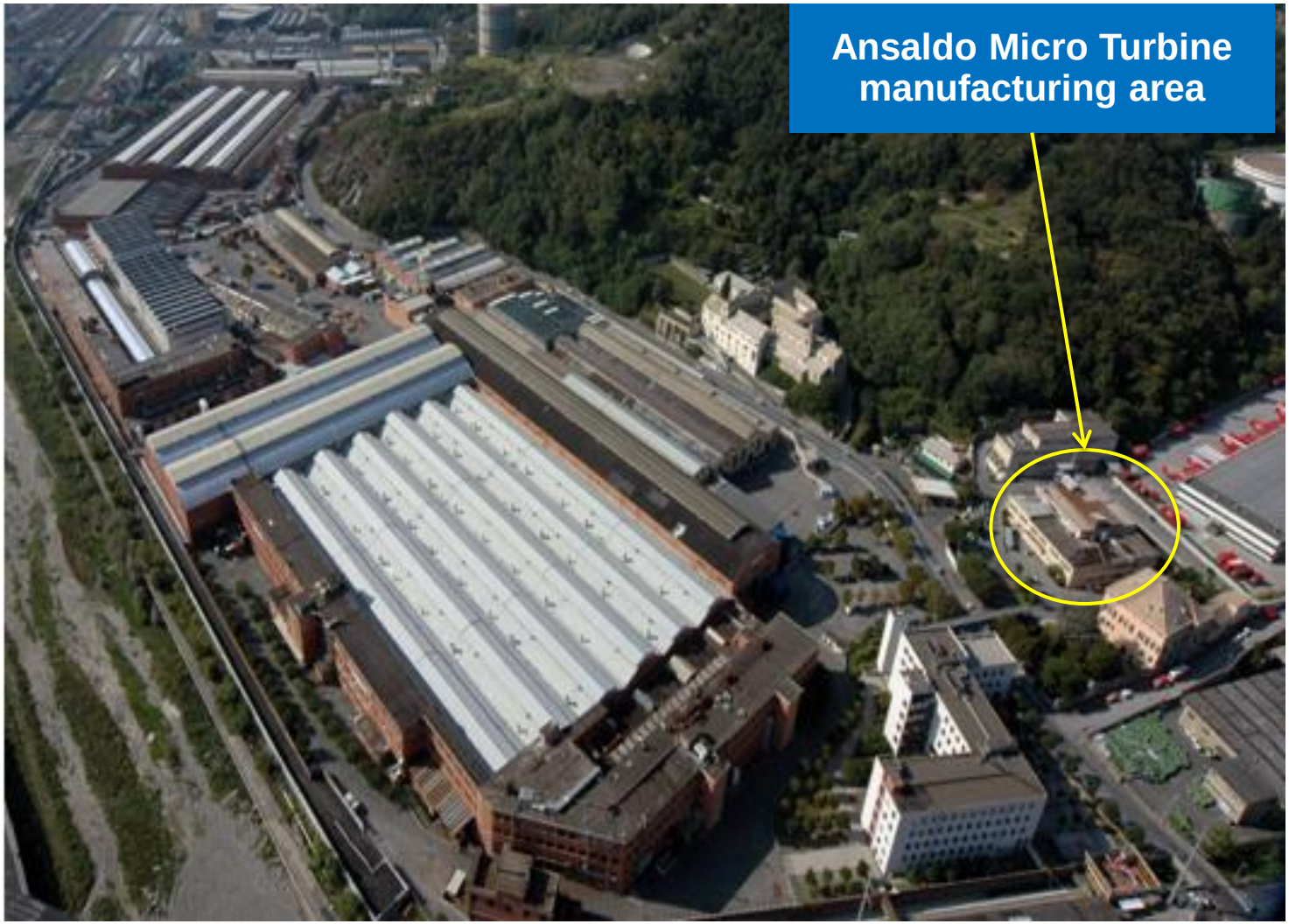
Series II

1998

T100

Series I

ANSALDO ENERGIA FACTORY



AE-T100 Micro Turbines

General	
Installation	Indoor / Outdoor
Size (WxHxL)	900 x1810 x 2770mm (P) 900 x 1810 x 3900mm (CHP)

Electrical data	
Frequency output	50 Hz (60 Hz on request)
Voltage output	400 V (AC), three phases

Fuel requirements	
Required pressure	20 mbar(g) ÷ 0.5 bar(g)
Required temperature	(0 ÷ 60) °C
Lower Heating Value (LHV)	(38 ÷ 50) MJ/kg*

(*): depending on fuel LHV

Performances	
Electrical output	(100 ± 3) kWel
Electrical Efficiency	(30 ± 2) %
Fuel consumption	333 kWth ≈ 34 Nm3/h*
Exhaust gas flow	0.80 kg/s
Exhaust gas temperature	270 °C
Sound Power	85,4 dB(A)

Emissions *(@ Full load and 15% O2)*	
NOx	< 15 ppm(v)
CO	< 15 ppm(v)

AE-T100 Micro Turbines - Advantages

- High total efficiency
- Short pay-back time
- Low ordinary maintenance
- Long useful life
- High reliability
- Low noise
- Low emissions
- Ready to be remotely controlled
- Compact design
- Flexible
- Different Fuels (NG, BIO, EFMGT)

Micro Turbines - Applications

ENERGY EFFICIENCY

- Commercial & Industrial
- Tri-generation

BIOGAS

- Landfill
- Sewage

EXTERNALLY FIRED

- Biomass
- Solar

Micro Turbines – Energy Efficiency Applications

The natural gas AE-T100 in CHP, CCHP (in combination with an *absorption chiller*), or Power Only mode, is our standard for a variety of applications:

- Hotels
- Leisure centres
- Apartament buildings
- Food industry
- Industrial laundries
- Swimming pools
- Hospitals and retirement houses
- Farms
- Wineries and Distilleries
- Painting plants.

The AE-T100 low maintenance requirements makes it extremely attractive and competitive against more conventional systems. It can be supplied for indoor or outdoor installations, both meeting noise and emissions regulations.

The AE-T100 is equipped with remote control and management.

Micro Turbines – Biogas Applications

The AE-T100 is very tolerant against variations of biogas composition and heating value. It has been installed in a wide range of applications and can be easily customized to meet customer's requirements:

- Landfill gas
- Anaerobic digestion (biomass or sewage) gas

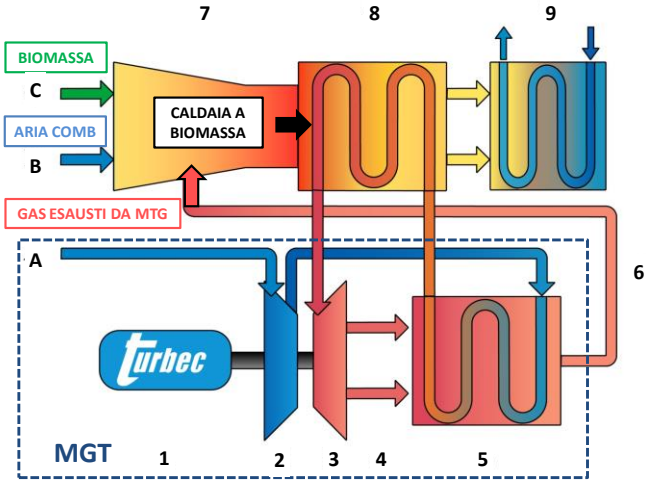
Biogas acceptable ranges:

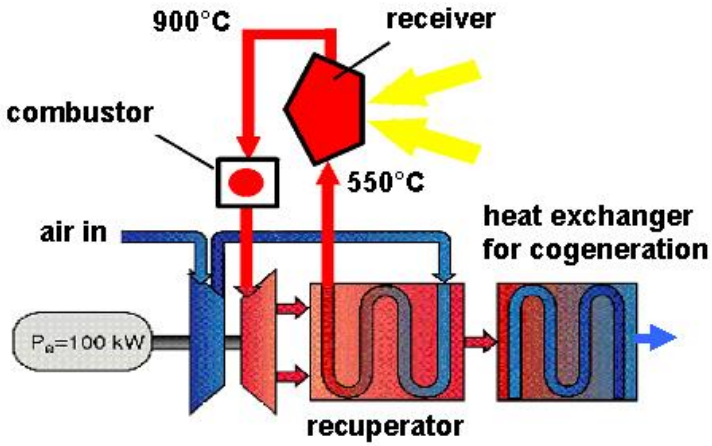
- CH4 (methane) > 40 %
- H2S (hydrogen sulphide) ≤ 1500 ppm = 2280 mg/Nm3
- Siloxane* ≤ 100 mg/Nm3

*Decamethylcyclopentalsiloxane

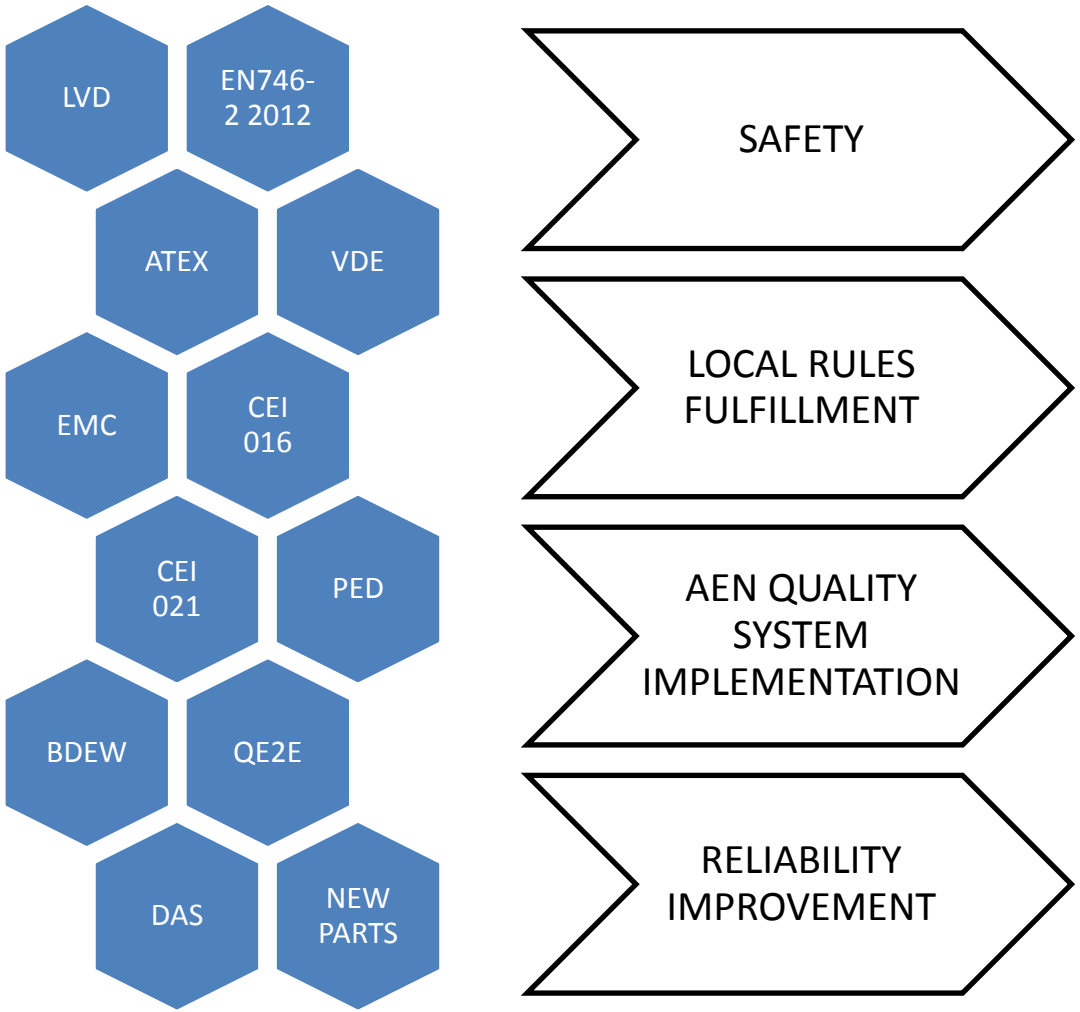
Micro Turbines – Externally fired Applications

The AE-T100 operates as an EFMGT (Externally Fired Micro Gas Turbine) an open Brayton cycle.
EFMTG is typically applied to biomass combustion and Concentrated Solar power generation

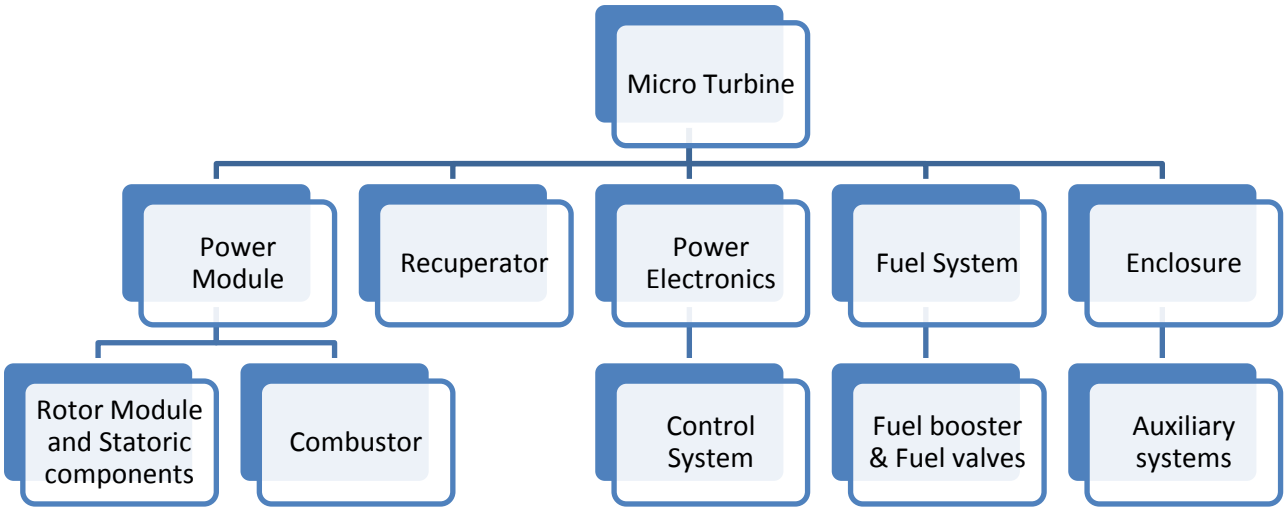




AE-T100 ACHIEVED DEVELOPMENTS



AE-T100 FUTURE DEVELOPMENTS



Thanks for your attention

…AE-T100 questions?

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Proud to be here

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