



Specialized Engineering Services:

- **Consulting**
- **Special Equipment and “Turn-Key” Package Units, EPC & EPCM**
- **Applied Research & Development**
- **Maintenance and O&M**



December 2016

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Company Profile

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Company Profile

• Our Company

Hysytech S.r.l

Hysytech is an **engineering and process equipment construction company** established on 2003, in Turin, Italy. Main product is **engineering focused on innovation** providing total quality engineering solutions and services to our clients.

We supply specialized solutions on **chemical processing, traditional and renewable energy, power generation and environment treatment**.

Our **international experience** and technological background covers several fields: Engineering Prototyping, Pilot Plant and Industrial Facilities EPCM, **Process and Technologies Implementation**. Hysytech assist its clients during the whole **development of new facilities or products**, from the preliminary study to the implementation of the final technical and economic solution.

Head Office:

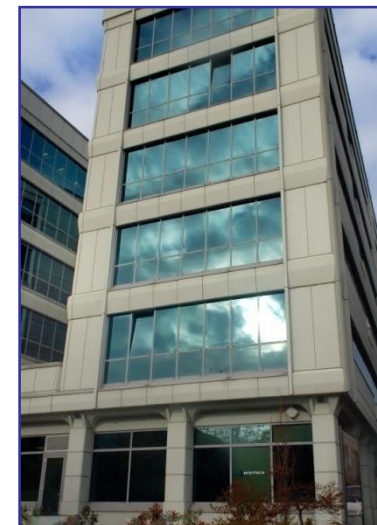
Strada del Drosso, 33/18
10135 Turin, ITALY

R&D Labs and Workshop:

C.so Unione Sovietica, 612/26
10135 Turin, ITALY

Special Labs at Politecnico di Torino:

C.so Duca degli Abruzzi, 24
10129 Turin, ITALY



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Company Profile

• Products and Services

Consulting

- Project Development and Project Management
- Economic and Technical Due Diligence
- Contract Negotiation Assistance
- Technical and Economic Feasibility Assessment of Facilities Configuration, Projects, Patents or competing alternatives.
- Business Plan Development and Support in order to obtain debt and/or capital from third parties.
- Technology Transfer Assistance (UE, North America and BRIC countries)
- Technical and Legal Risks Analysis
- Conceptual Development
- EPC & EPCM
- Permitting Process Support (EIA, IPPC, Seveso, others)
- Energy Auditing & Process Troubleshooting
- General Engineering Services

Special Equipments and “Turn-Key” Package Units, EPC & EPCM

- Pilot Plants
- Custom and Special Process Equipments
- Lab rigs/benches
- Special Package Units

Applied Research and Development

- EU R&D project partnership
- Government Agencies R&D projects
- Projects outsourced by private Third-parties
- Internally funded technology developments

Operation and Maintenance Services

- Programmed Facility Maintenance Service
- Emergency Maintenance Services

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Company Profile

Our Customers

Hysytech s.r.l provides specialized support on **Engineering, Project Management, Plan Execution and R&D** to national and international Small and Medium Enterprise (SME), Large Enterprise (LE) as well as Public Research Centers.

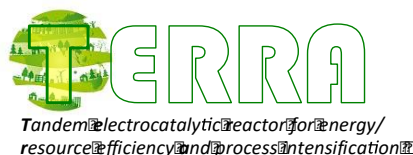


Ansaldo Energia S.p.A., Ansaldo Fuel Cells S.p.A., Ansaldo Ricerche S.p.A., Asja Ambiente Italia S.p.A., CNR, CRF Centro Ricerche FIAT s.c.r.l., **Danieli Centro Combustion S.p.A.**, Danieli and C. Officine Meccaniche S.p.A., **Edison S.p.A.**, **ENEA**, Environment Park S.p.A., Eurocoating S.p.A., Filters s.r.l., Garbo s.r.l., **INDESIT Company S.p.A.**, **Merloni Termosanitari S.p.A.**, Politecnico di Torino, **Rivoira Praxair Italia S.p.A.**, Saati Group S.p.A., SAPIO s.r.l., **SILFAB S.p.A.**, SOLIDPOWER S.p.A., Sotacarbo S.p.A., **Thales Alenia Space Italia S.p.A.**, Turbocare S.p.A., **Venezia Tecnologie S.p.A. (Gruppo ENI)**

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Company Profile

• Ongoing R&D Projects Participation



TERRA 2015-2019

Tandem Electrochemical Reactor for Energy/resource efficiency And process intensification



CELBICON 2016-2020

Cost-effective CO2 conversion into chemicals via combination of Capture, ELectionrochemical and BIOchemical CONVersion technologies



STOREandGO 2016-2020

Innovative large-scale energy STORagE technologies AND Power-to-Gas concepts after Optimisation



SYNERGY – SME Instrument 2016-2017

Plug&Play Gasification Plant for onsite conversion of otherwise unusable waste into renewable energy



BioRoburPlus 2017-2021

Advanced direct biogas fuel processor for robust and cost-effective decentralised hydrogen production

Participation to other Co-financed R&D programs

- **Polo Energie Rinnovabili e Biocombustibili (Partner)**
- **Polo Architettura Sostenibile e Idrogeno (Partner)**
- **Polo Energie Rinnovabili e Mini Hydro (Partner)**
- **Polo Chimica Sostenibile (Supplier)**
- **Voucher FinPiemonte (Assistance and Support Provider)**
- **Contratto d'Insediamento FinPiemonte e Invitalia (Assistance and Support Provider)**
- **Government Public Tenders (Bandi Ministeriali)**
- **Others**

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Accomplished Co-Financed R&D Projects Participation



BioRobur 2013 – 2015
"Biogas robust processing with combined catalytic reformer and trap"



ArtipHYction 2011 – 2015
Fully artificial photo-electrochemical device for low temperature hydrogen production – 1.6 m2 Demo Plant



Solhydromics 2009-2011
Nanodesigned electrochemical converter of solar energy into hydrogen hosting natural enzymes or their mimics



PENTOOOL 2004-2007 (Sixth Fr. Programme)
Design tool development for PEMFC



STEPS & STEPS2 2009-2015
Systems and technologies for space exploration – Regenerative Alkaline and PEM Energy storage

BIOMETHAIR 2013-2015
Sustainable Urban Mobility from waste thru Hydrogen and Biomethane



CardioSol 2013-2015
Valorization of CARBON DIOXIDE containing industrial streams via non-conventional catalytic systems and SOLARIZED processes



MICROCHP 2005-2008
Methane CHP unit development based on Steam Reformer Fuel Processor and PEMFC (5 kW)



CELCOYACHT 2005-2008
Gasoline APU development for marine yacht (15 kW)



EFESO 2009-2011
MicroCHP development for domestic appliances 1-2,5 kW

KYOTOLIFT 2011-2015
Reversible PEM Energy storage

MORGASS 2011 - 2013
Energy Exploitation of organic materials from agricultural and livestock activities to biomass gasification.

TRIBE 2011 – 2012
PaThway for the pROductIOn of novel BiofuEl aims to develop of an innovative diesel from non-food renewable biomass

BioL-B2 2014-2015
Liquified BioMethane solution for Gas Networks and Logistics

BiORG 2014-2015
Biot stimulants extraction from Compost and Organics waste

BISLA 2011-2013
Biomethane and Biofuels on islands and remote environment

Green-NG 2012-2014
Biomethane from Municipal Urban Waste Digestion – Demo Plant

IDEA 2013-2015
Innovative Diesel Engine application

METISOL 2011-2013
Solar-driven thermochemical cycles for Hydro-Methane production for Automotive application

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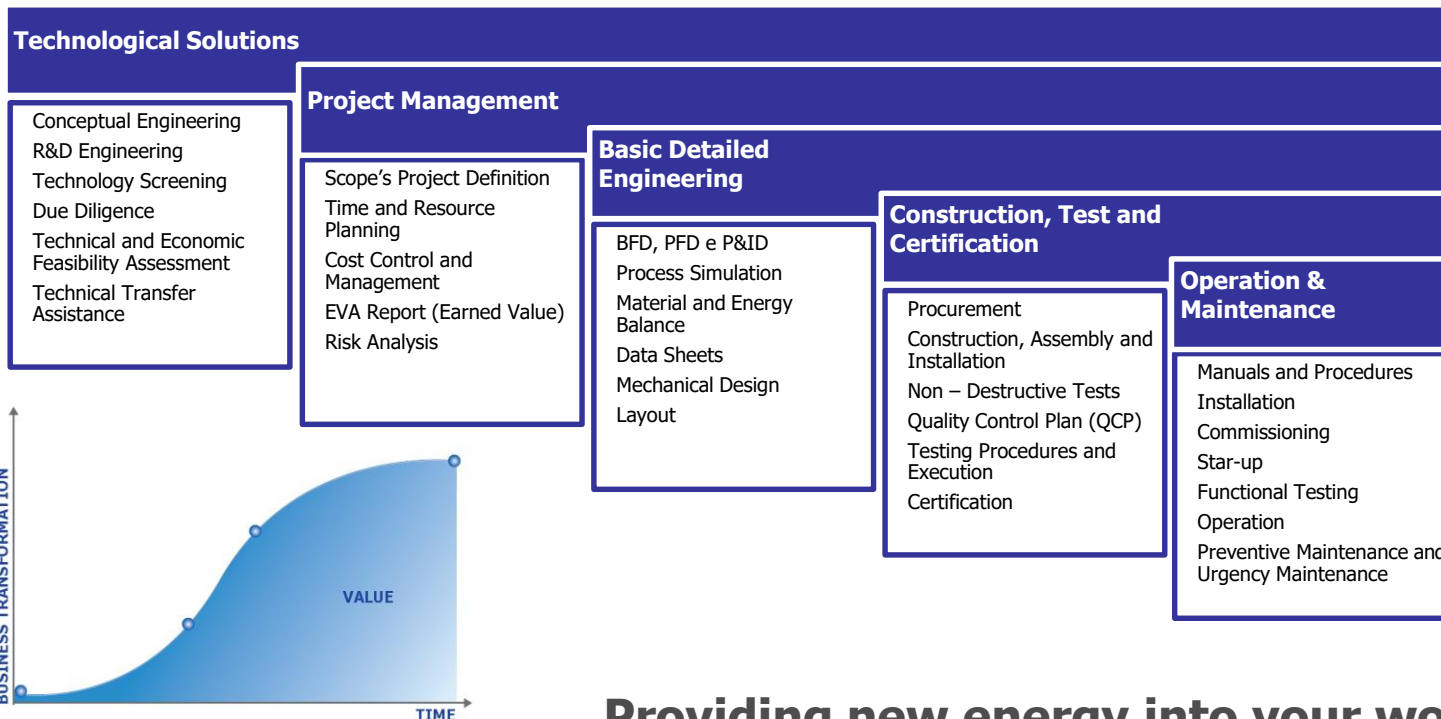
Company Profile

• Capabilities and Organization

Our Company has an horizontal and interdisciplinary structure.

Our strength lies on the capability of **developing non “off-the-shelf” solutions** for our customer’s demanding needs **without being tied to specific technologies or equipment, providing a complete services.**

We play a strategic role for companies on the manufacturing and services business by **bringing a dynamic working resource** to meet and develop the world’s newest technologies. We fully commit to assist you with our background, experience and capabilities through **your company’s sustainable grows.**



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Company Profile

• Key People and Experience

Each staff member own specific **professional skills built-up from direct experience on the field**, most of it developed inside transnational companies; which make us a polyvalent and flexible resource dedicated to offer **high quality services** in order to satisfy your most high requirements.



We are convinced that Hysytech can **bring you a remarkable advantage** on these activities, having **detailed knowledge and project experience on chemical and process plant**.

Our capabilities in numbers:

- More than 450 successfully completed projects
- More than 100.000 Engineering hours
- More than 30.000 hours on Project Management
- More than 35.000 hours on Construction Management
- More than 100 satisfied clients

We provide services:

- Mainly in Italy;
- Frequently in Europe (France, Spain, Germany, England, Holland, Belgium, Lithuania)
- But also in Extra-European (U.S., Canada, China, Taiwan, Iran, Saudi Arabia, Uruguay and Venezuela)

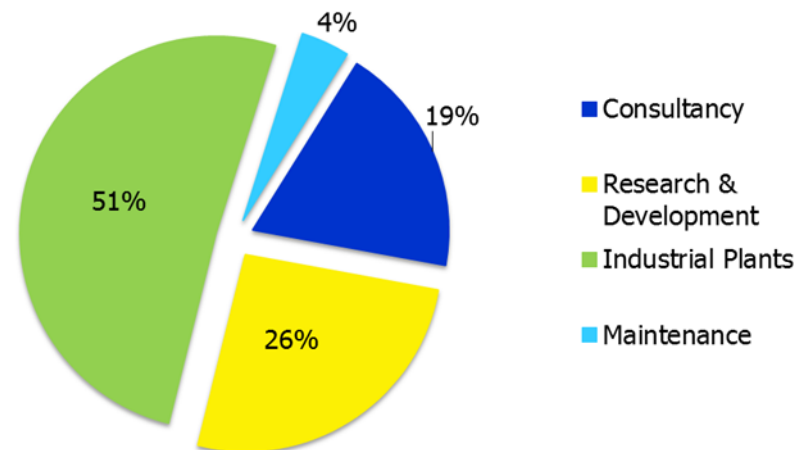
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Company Profile

• Diversification and Financial Performance

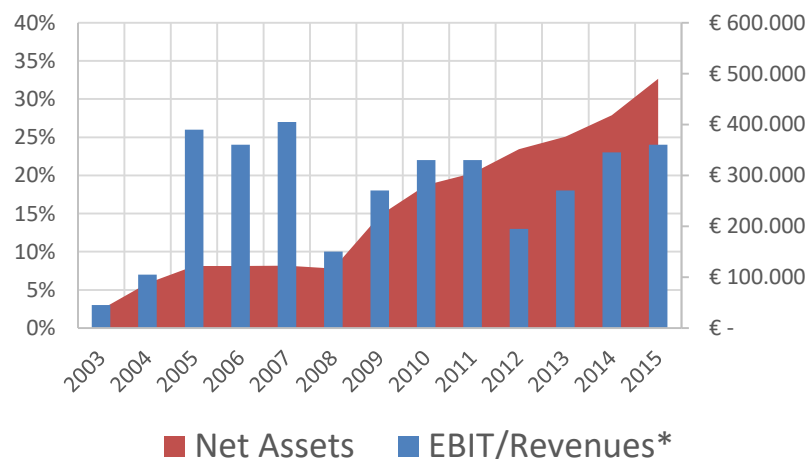
Hysytech's Revenues Share (2003-2015)

More than half of Hysytech's Turnover comes directly from industrial plant execution, **evidence of our experience from the field.**



Our company reinvests on in its **differentiation and specialization**

* Before internal R&D investments



.- Company Start (06/2003)

Seed Equity: EUR 40.500

Employees: 3

.- Company Performance (2015)

Equity value: ~ EUR 500.000

Employees: 20

IRR on Company's Equity >31%.

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Company Profile

• Technological Sustainability and Differentiation Values

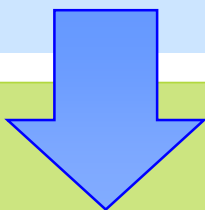
Services to our customers: non “off-the-shelf” products

Consultancy

**Special Equipment
and Turn-key
Package Unit
Design &
Construction**

Applied R&D

Maintenance



**Biogas
Purification to
Synthetic
Natural Gas
(SNG)**

**Industrial
Waste and
byproducts
Gasification**

**Hydrogen
Generation for
Micro CHP or
Distributed
Generation**

**Gaseous and
Liquid Fuel
Treatment for use
on conventional
Engines or
Turbines**

**Supercritical
Process for
Biodiesel
Production
from organic
waste**

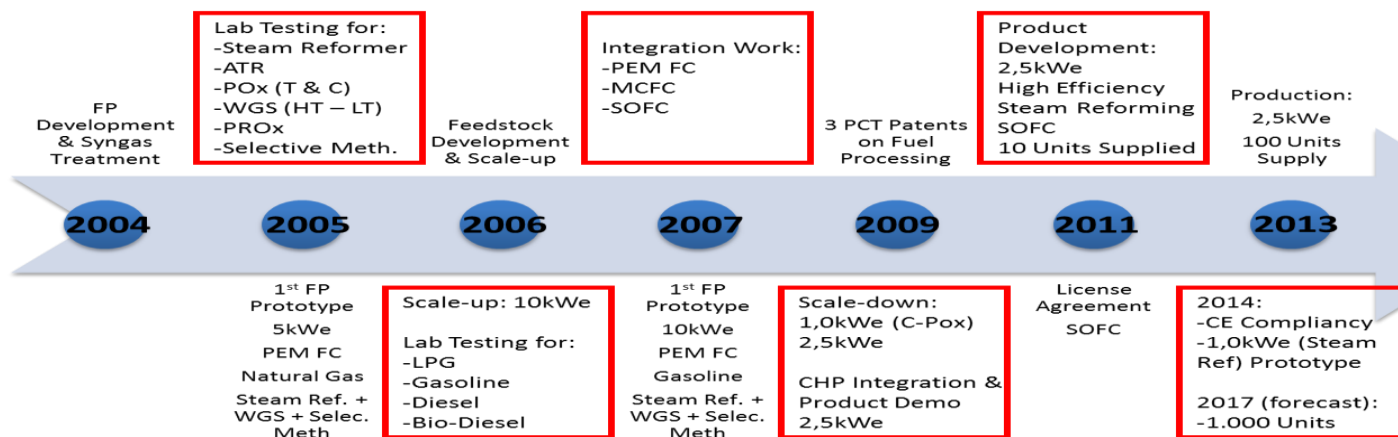
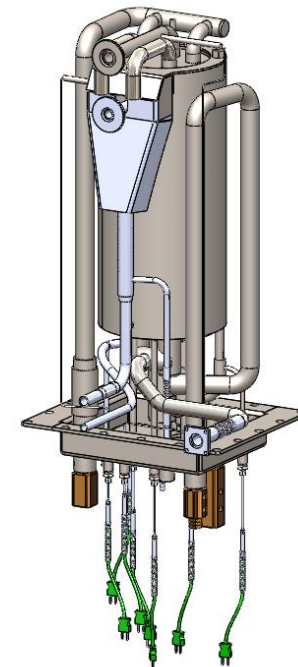
Internal Applied R&D projects: short and medium term opportunities

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Fuel Processing Technology

• One Single Integrated Solution (... since 2004)

- Fuel Generation (High Efficiency Syngas);
- Fuel Compression (No Compressor needed);
- Heat Cogeneration (Self Steam Generation);
- Anode Off-gas Afterburning (Low Emissions);
- Start-Up and Quick Warm-Up (for HT FC)
- Reliability and Low Manufacturing Costs



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Biomethane: Experience in Italy

- First Plant in Italy, biogas from MSW (Sept. 2014)

 PINEROLESE
L'INNOVAZIONE È IL NOSTRO TERRITORIO

 **Waste**



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Biomethane: Experience in Italy

- First CNG refuelling (23/06/2015)


L'INNOVAZIONE È IL NOSTRO TERRITORIO



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Biomethane: Experience in Italy

- Second Plant in Italy, biogas from Manure (16/10/2015)



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BioFuel: Experience in Italy

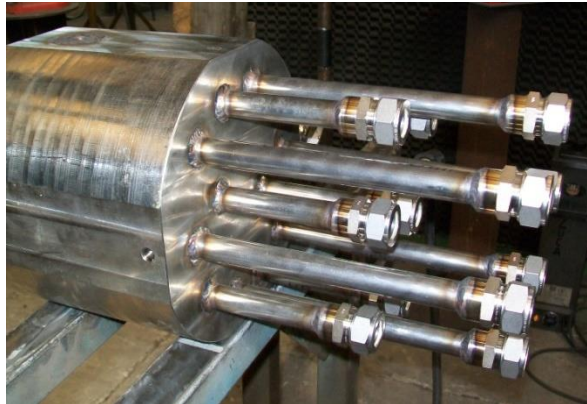
- Lab. test reactor: supercritical treatment of organic waste



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BioFuel: Experience in Italy

- Pilot test reactor: biodiesel production from organic waste



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Company Profile

• Main Facilities

The company has most of the facilities needed for the **design**, as well of those required for **construction**, **assembling** and **testing** of chemical plants from lab-scale up to full industrial size:

- Software and High Performance Computers for mechanical, thermal stress analysis (SolidWorks), process and CFD simulations;
- Electronic Lab and supplies for power and signals circuits, including Electronic Control Board development for custom control hardware and software;
- Standard and Micro-machining systems, welding, pressure testing and equipment certification;
- Analytical equipment for on-line fuel gas analysis via IR and electrochemical analyzer.
- Custom and fully-automatic Burner Rigs for development, testing and manufacturing quality control for prototypes.
- Chemical Lab for trials, testing and analytic chemistry controls;

Labs, testing facilities and manufacturing workshop are hosted in a dedicated industrial environment of 1.000 m².



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Company Profile

• Contact Info

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Explore the chances through our services to improve the sustainability of your business

Disclaimer

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In addition to statements which are forward looking by reason of context, including without limitation, statements referring to risk limitations, operational profitability, financial strength, performance targets, profitable growth opportunities, and risk adequate pricing, as well as the words "may, will, should, expects, plans, intends, anticipates, believes, estimates, predicts, or continue", "potential, future, or further", and similar expressions identify forward-looking statements.

By their nature, forward-looking statements involve a number of risks, uncertainties and assumptions which could cause actual results or events to differ materially from those expressed or implied by the forward-looking statements. These include, among other factors, changing business or other market conditions and the prospects for growth anticipated by the Hysytech management. These and other factors could adversely affect the outcome and financial effects of the plans and events described herein. Statements contained in this document regarding past trends or activities should not be taken as a given that such trends or activities will continue in the future. Hysytech does not undertake any obligation to update or revise any statements contained in this document, whether as a result of new information, future events or otherwise. In particular, you should not place undue reliance on forward-looking statements, which speak only as of the date of this document.

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