



**ROSETTI MARINO**



# Hydrogen and Syngas Plants

for industrial users  
and clean energy  
applications



License



## *New Process*

Short Contact Time - Catalytic Partial Oxidation (SCT-CPO) is a new technology for producing hydrogen or synthesis gas.

The process (ENI license) is based on a high-speed catalytic reaction system with contact times of more than 1.000 times shorter than conventional processes, allowing for completely novel reactor design and engineering solutions. The technology represents a quantum-leap innovation and extends the possibilities of technical and economic optimization in industrial hydrogen and Syngas production.



Full-scale industrial demonstration  
of process energy recovery with integrated  
Reaction-Syngascooling (RSC System)

License



SCT-CPO Process module  
(street transportable)

## Competitive advantages

- **Small-size** reaction systems (two orders of magnitude compared to traditional reforming)
- **Simplified** plant complexity
- **Feedstock flexibility:** from natural gas, light hydrocarbons with the possibility of treating bio-derived organic fluids (without major equipment modifications)
- **Oxydant flexibility:** possibility of using air, enriched air and oxygen (to be evaluated case by case)
- **Operating flexibility:** simple and easy to operate, short start-up/shut-down
- **Design flexibility:** enhanced energy recovery with integrated steam production and quench systems available
- **No fluegas emissions: easy CO<sub>2</sub> recovery** from compressed process gas



- **Modular construction** with reduced plant footprint and short installation time.

SCT-CPO pilot plant for industrial hydrogen production (99.999%)



## *Potential applications*

- Debottlenecking of existing SMR (Steam Methane Reformers) in hydrogen consuming industries (refineries, chemical plants, ...)
- Modularized and skid mounted plants for small and medium industrial hydrogen consumers (metallurgy, food, glass, electronics, ...)
- Hydrogen and Syngas from fossil feedstocks for clean energy applications with CO<sub>2</sub> recovery (for EOR and CCS)
- “Green hydrogen” from renewable feedstocks (CO<sub>2</sub> neutral)



Skid-mounted SCT-CPO Unit  
(for medium-small hydrogen consumer)







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