

# «View from manufacturers ... CHP and waste heat recovery»

*Marco Baresi, Italcogen Vice President*

Brussels June 27<sup>th</sup>, 2013



**ENERGY EFFICIENCY**  
in Industrial Processes



Cogeneration plant manufacturers and  
distributors Association

Federata



**ANIMA**<sup>®</sup>



Federazione delle Associazioni Nazionali  
dell'Industria Meccanica Varia ed Affine

# About us

- **ANIMA** - Federation of the Italian Associations of Mechanical and Engineering Industry - is the industrial trade organization that represents the mechanical and engineering industries within the Italian Confederation of Industry (Confindustria) Within the ANIMA system, **ITALCOGEN** represents the Italian manufacturers and distributors of cogeneration plants, heat recovery and fuel cells at the national level

192.000 employees

44 Bn € turnover

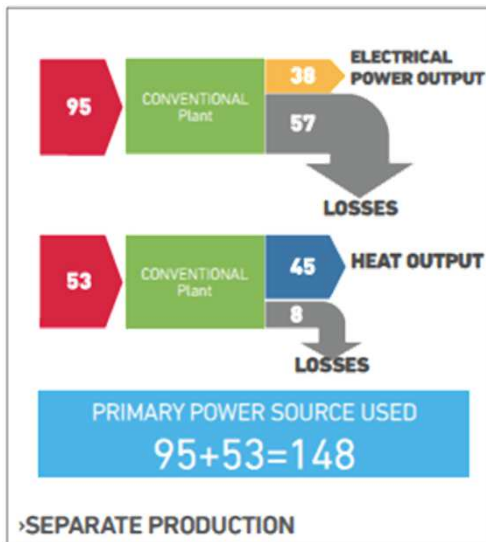
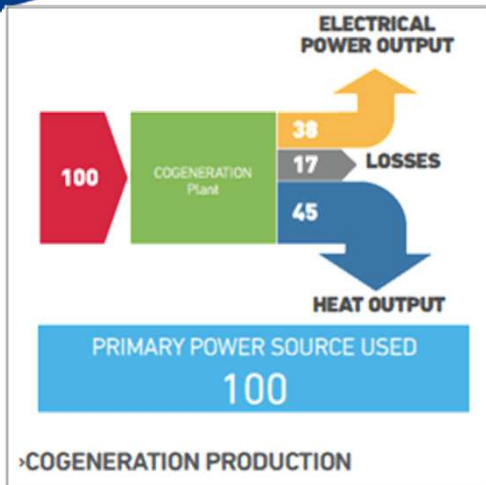
54% export/turnover

ITALCOGEN is member of COGEN Europe



# Combined Heat and Power (CHP)

## Industrial sectors



- food
  - beverage
  - dairy
  - chemical
  - pharmaceutical
  - plastics
  - ceramics and bricks
  - textile
  - wood
  - metallurgy
  - hospital services
  - environmental services
  - paper mills
  - tanneries
  - galvanic treatments
  - centralised community heating
  - oil&gas
- ... and more

**EU installed CHP  
in industry  
~ 50 GW**

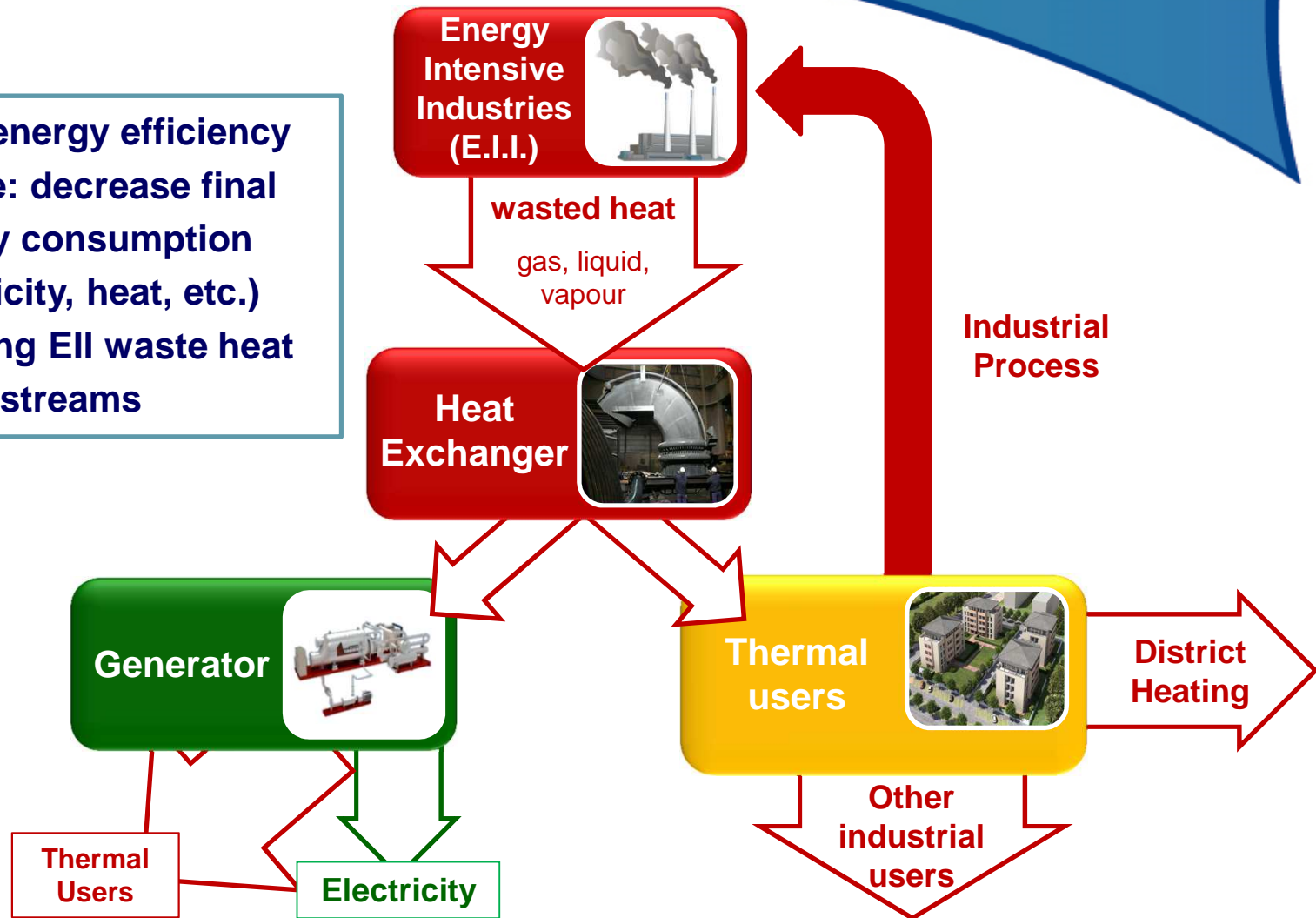


**estimated EU potential  
~ 100 GW  
technical/economic  
feasibility**

Data Source:  
COGEN Europe

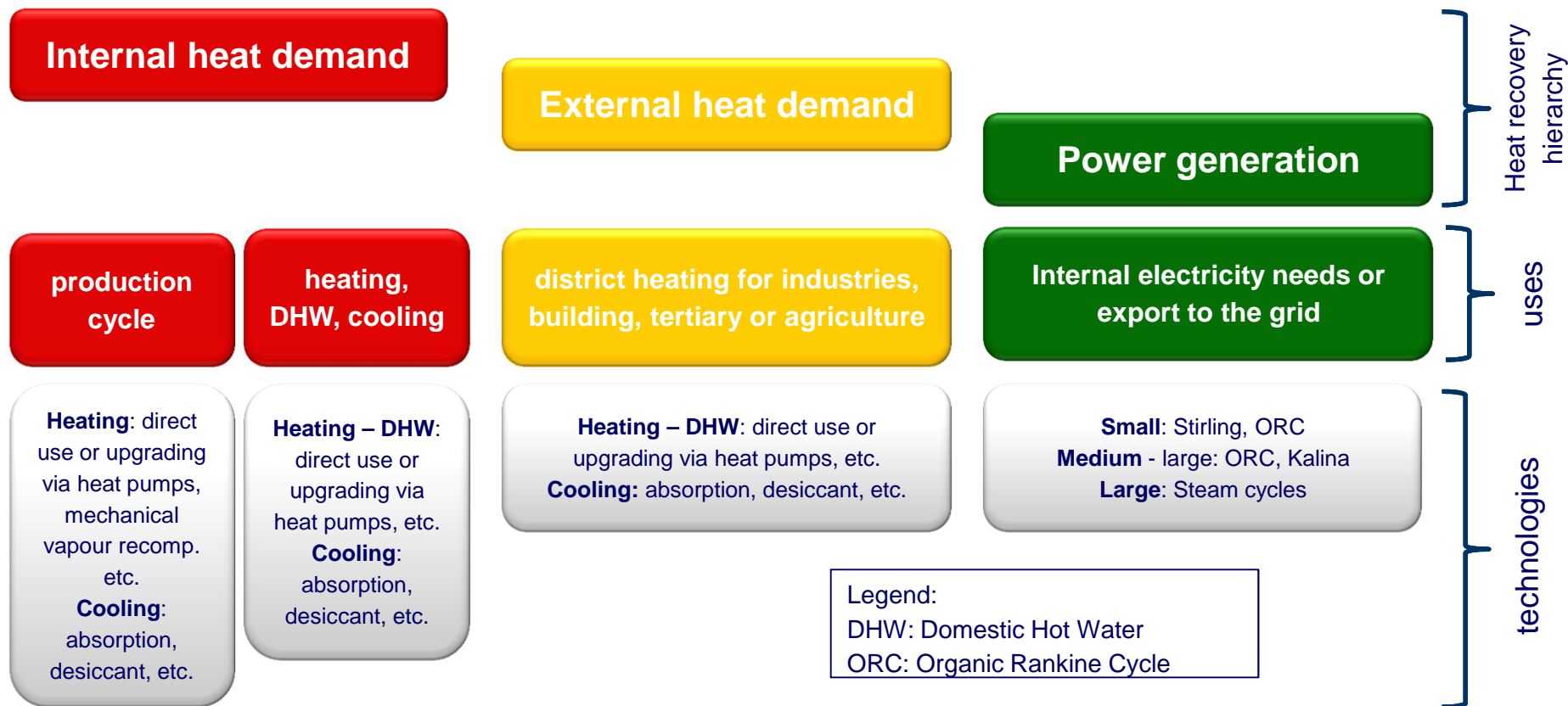
# Waste Heat Recovery (WHR)

A good energy efficiency practice: decrease final energy consumption (electricity, heat, etc.) recovering EII waste heat streams



# Waste Heat Recovery priority

## Wasted or dispersed heat



Source: LIFE+ - HREII Demo project [www.hreii.eu/demo](http://www.hreii.eu/demo).

# Italcogen and HREII – HREII DEMO Projects


**Project supported by LIFE EU Programme**

**H·REII**  
 Heat Recovery in Energy Intensive Industries
 

Progetto di sviluppo di politiche e azioni innovative per la riduzione delle emissioni di CO<sub>2</sub> mediante la valorizzazione degli effluenti di processo in Industrie Altamente Energivore

Policy and governance actions project to reduce CO<sub>2</sub> emissions by energy valorization of process effluents in Energy Intensive Industries


**TURBODEN**  
Coordinatore del progetto e partner tecnologico  
Project coordinator and technology partner  
[www.turboden.it](http://www.turboden.it)


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[www.hreii.eu](http://www.hreii.eu)



**Project supported by LIFE EU Programme**


**H·REII**  
 Heat Recovery in Energy Intensive Industries
 


Progetto per la realizzazione di un sistema di recupero calore integrato con un impianto di depurazione fumi e per lo sviluppo di politiche e azioni innovative per la riduzione delle emissioni di CO<sub>2</sub> mediante la valorizzazione degli effluenti di processo in Industrie Altamente Energivore.

Project to realize an integrated fumes depuration and heat recovery system and to develop policy and governance actions for reducing CO<sub>2</sub> emissions by valorization of process effluents in Energy Intensive Industries.


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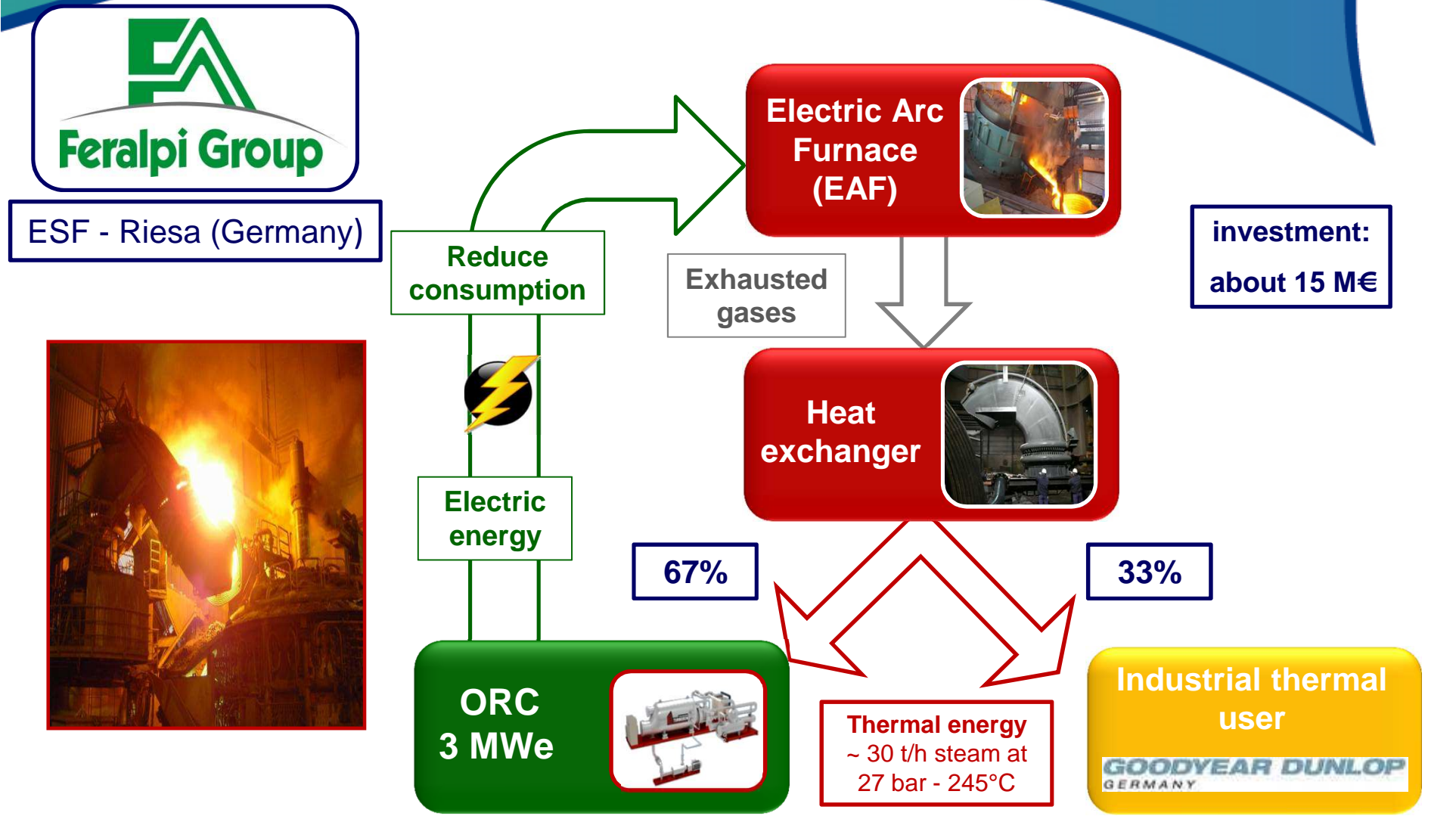


[www.hreii.eu/demo](http://www.hreii.eu/demo)

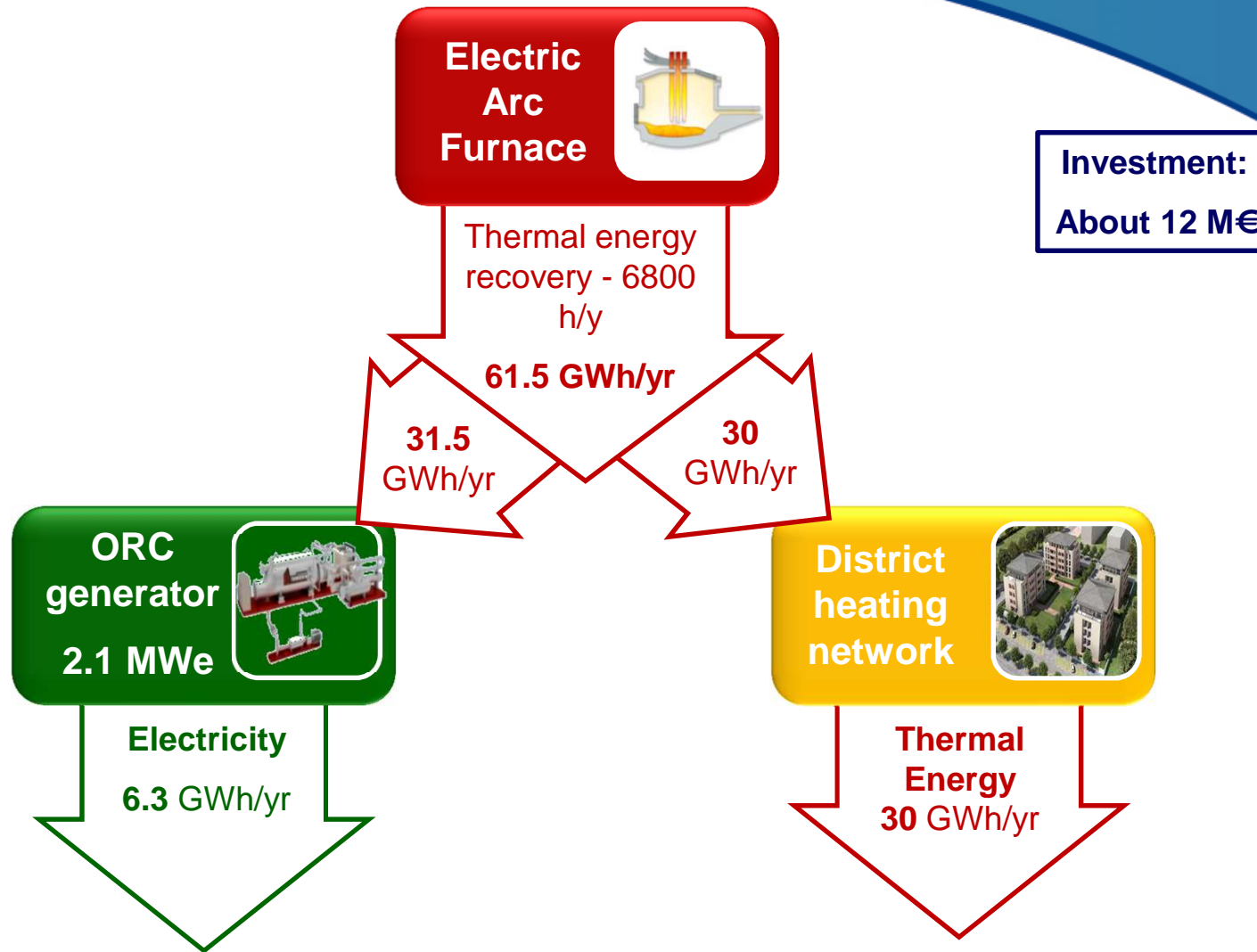
Italcogen - Italian Association of Manufacturers and Distributors of Cogeneration Plants



# Business Case: Heat recovery from steel industry



# Heat Recovery from steel industry coupled with DH





# ORC references in heat recovery



## Cement industry

### Holcim Romania

Heat source: exhaust gas @ 360°C (PH) and hot air @ 250 °C (CC)

ORC electric power: ~ 4 MWe

Started up: July 2012 (4,200 working hours)

Availability: >98%



## Glass industry

### AGC Glass Europe

Heat source: gas @ 500° C from glass production process

ORC electric power: 1.3 MWe

Started up: March 2012



## Steel industry

### NatSteel – TATA Group - Singapore

Heat source: exhaust gas from LFO combustion, @ 400 from Billet reheating furnace at steel rolling mill

Direct exchange between exhaust gas and working fluid

ORC electric power: 0.7 MWe

Started up: February 2013



# Why bother ?

## ***CHP and Waste Heat Recovery as best practices:***

- of **energy efficiency** for a sustainable industry
- increasing **industries competitiveness**
- promoting a new European **supply chain to export**
- helping in saving/creating **new jobs**

## ***... but investment payback time is limited by:***

- **investment cost**
- **electricity price** with preferential rates for **EII** in some countries
- **Incentives** for energy efficiency in industry only in few Member States
- lower **operating hours** due to economic downturn

## ***Recommended actions:***

- **funding and guarantees** to reduce barriers in project financing
- **preferential electricity price** for **EII** must promote investments for energy efficiency
- **stable regulatory framework** - long term vision
- **dissemination:** increase industrial players awareness of BAT (ORC, etc.)



**Thank you for the attention**  
**marco.baresi@turboden.it**  
**www.italcogen.it**