Strategy and role of multi-utilities to deliver territorial symbioses and circular economy

Enrico Pochettino, Head of Innovation

Iren Group

Networks	Power	Gas	Water	District Heating
Environment	Collection	Management		
Energy	Renewables and Storage	Thermoelectric and CHP		
Market	Commodity (Gas)	Commodity (power)	Iren Plus	
Smart solutions	Energy Efficiency	**E-mobility**	**Infrastructural services for local communities**	

>7 mln

Inhabitants in the 3 reference areas

- 1st national player in **district heating sector**
- 3rd national player in **water sector** (water sold)
- 3rd national player in **waste management sector** (tons treated)
- 25th among Italian industrial companies for revenues

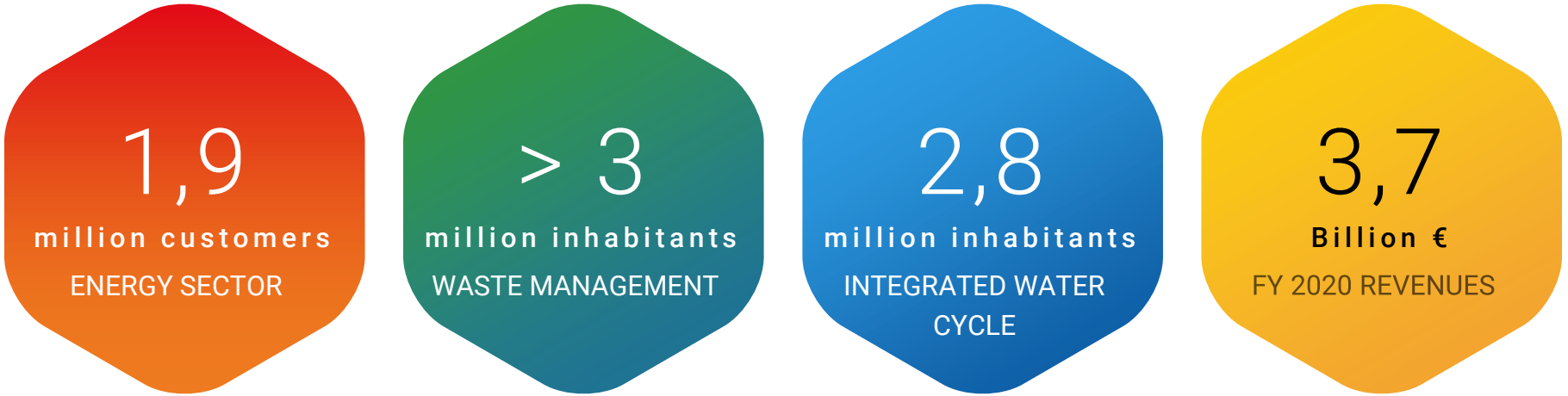
Some figures about IREN

1st national player in district heating sector

3rd national player in water sector (water sold)

3rd national player in waste management sector (tons treated)

25th among Italian industrial companies for revenues



9.000 employees

IREN's strategic plan in number

12,7 Bln €
in new investments 2021-30

Ecological Transition

- Progressive **decarbonisation** of businesses
- Strengthening leadership in the **circular economy**

Sustainable

80%

Territoriality

- Entry into **new territories**, also through acquisitions
- Becoming a **reference partner** for local stakeholders

Local

85%

Service Quality

- Excel in **network performance** and resilience
- Strengthen **customer satisfaction** in all business sectors

For improving service quality

50%

The ESG targets drive all business initiatives

34% Resilient cities
19% Water Resources
30% Decarbonization
17% Circular Economy

Environment

- **Decarbonisation** across activities
- Leadership in the **circular economy**
- **Sustainable** use of natural resources

- Carbon intensity halving
- 5x waste recovery
- Significant reduction of water losses

Social

- **Diversity** and inclusion
- Dissemination of **ESG best practices** and support for local communities

- More than 30% women in top corporate positions
- Supply chain involvement in ESG best practices

Governance

- ESG responsibility of senior management
- Maximum transparency and communication on ESG issues'

- Strengthening variable remuneration components linked to ESG issues
- Strengthening ESG-based policies

Symbiosis with citizens and local communities

Iren Local Committees

Iren Local Committees are bodies, set up in 2014, to strengthen and make the dialogue with stakeholders systematic, thanks to participatory planning actions and moments of consultation, with the aim of:

gathering project proposal from local communities

citizens, associations, municipalities put forward ideas and proposals on sustainability issues. The Committees evaluate them, study their feasibility and implement them.

promoting

solutions to improve the environmental and social impact for the territory

improving

quality of the services provided by the Group

Local Committees structure

5 Local Committees: Genova, Parma, Piacenza, Reggio Emilia and Torino

15/18 REPRESENTATIVES OF CIVIL SOCIETY

- *Consumer, environmental, cultural, voluntary and third sector associations*
- *Employees and suppliers*
- *Trade associations*
- *Shareholders/Institutions*
- *Schools and Universities*
- *Social Cooperation*

5 MEMBERS

- *Iren Chairman*
- *Iren Vice-Chairman*
- *Province capital*
- *Province municipalities*
- *Universities*

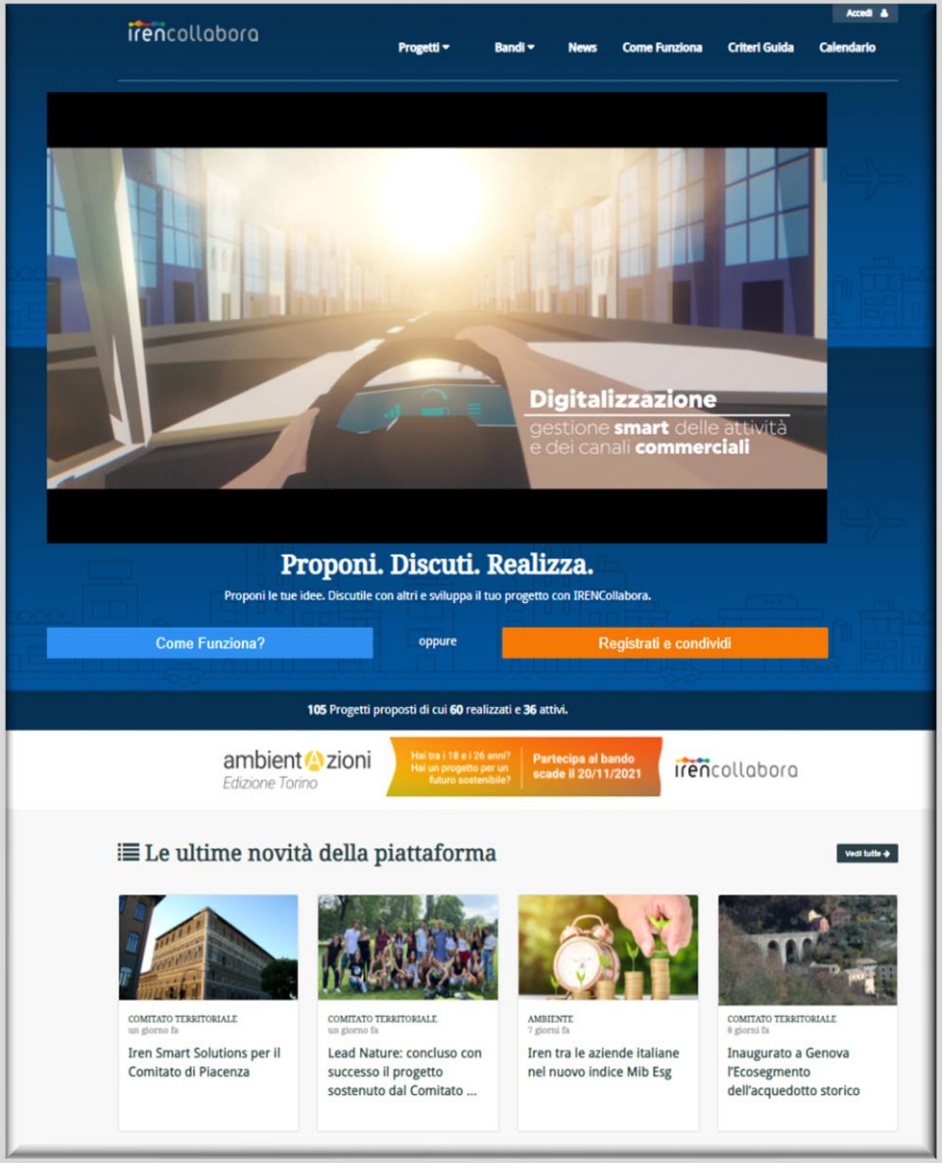
Participation is voluntary and free of charge.

Each committee has an annual budget to implement projects

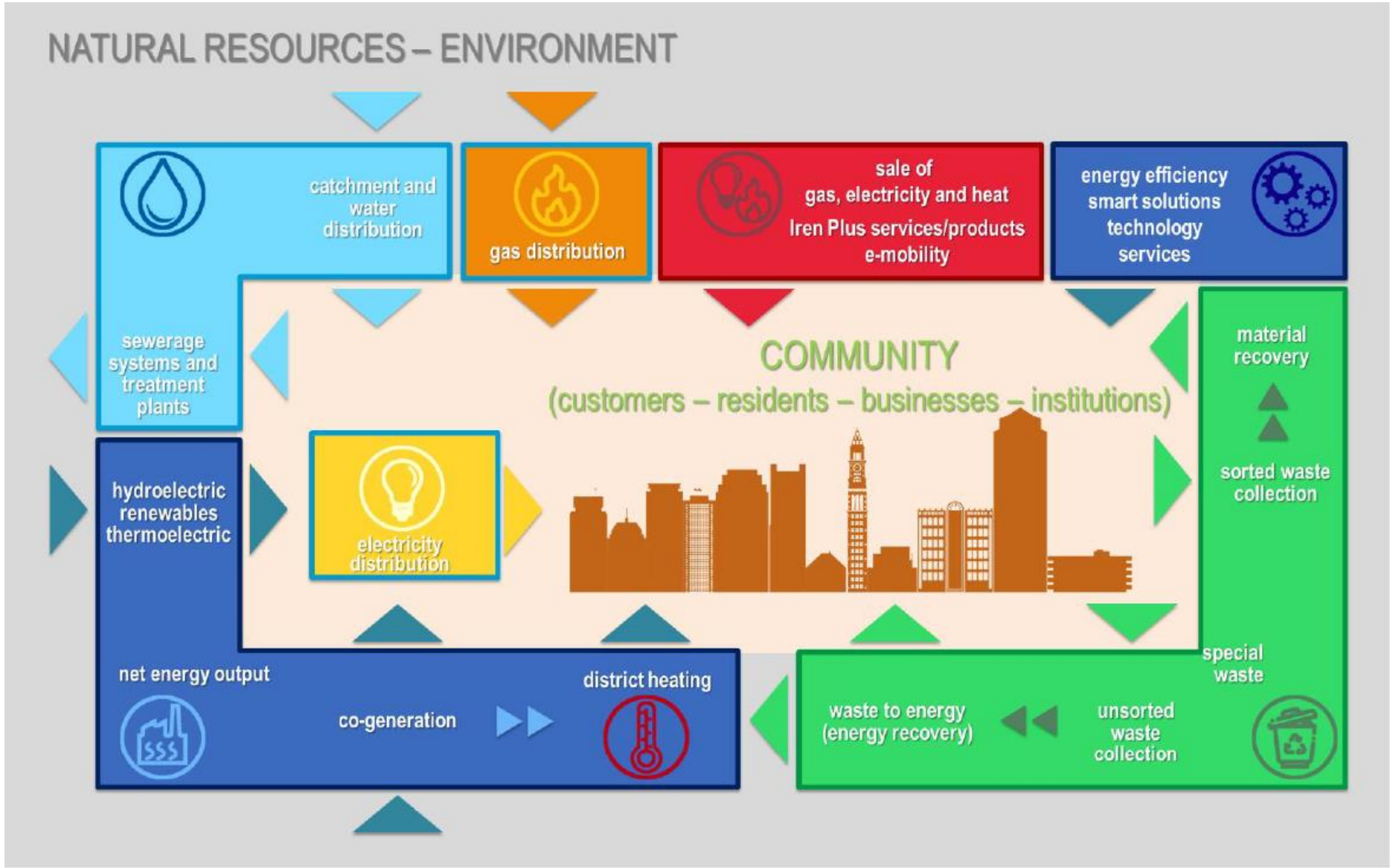
Citizens engagement

Irencollabora.it is the web platform in which citizens can publish project proposals addressed to the Local Committees

- encourages an **active involvement of stakeholders,** promoting problem analysis and projects deployment
- creates **new opportunities of collaboration** with citizens and civil society
- allows to adopt **innovative service strategies** and anticipate the needs of the territories



IREN «Multicircle Economy» concept



I.BLU: an example of Industrial Symbiosis in waste management

Using proprietary/patented processes and technologies **I.BLU** (IREN Group Company) develops new circular raw materials: **BLU-POLYMER** for industrial processes and **BLUAIR,** a revolutionary techno-polymer used in **metallurgical and steel processes**. I.BLU R&D department also has experimental projects in progress concerning the chemical recycling of mixed plastics.

I.BLU

Gruppo IREN

300K /TON YEAR

CURRENT PRODUCTION CAPACITY (plastic sorting + recycling)

500K /TON YEAR

TARGET FUTURE PRODUCTION CAPACITY (plastic sorting + recycling)

4

PRODUCTION PLANTS**

300

QUALIFIED TECHNICIANS

**San Giorgio di Nogaro (Udine), Reggio Emilia and Costa di Rovigo (Rovigo)

Blupolymer

BLUPOLYMER is a polyolefin granule mainly used to make:

- CONSTRUCTION AND INFRASTRUCTURE PRODUCTS, INSULATION SYSTEMS.
- AS A POLYMERIC ADDITIVE FOR HIGH PERFORMANCE ASPHALTS

BLUPOLYMER can be used to make materials and articles for industrial, logistics, and automotive purposes as well as outdoor urban furniture.

Blupolymer

CIRCULAR PAVING

BLUPOLYMER increases the strength and durability of asphalt, ensuring greater safety and, at the same time, lower maintenance costs and waste of resources. It can be used for motorways, urban and suburban roads, industrial areas, logistics centers and airports.

URBAN FURNITURES

BLUPOLYMER can be used in several urban applications:

- Waterproofing and insulation systems
- Grass car parks, truck stops
- Furniture for public and private outdoor spaces (flooring and building accessories, green and service areas)

BLUAIR

BLUAIR is a process optimizer engineered for **iron and steel production**. It can used in blast furnaces (BF) and electric arc furnaces (EAF) as **Secondary Reducing Agent** (SRA) in place of fossil carbon sources.
BLUAIR production and industrial applications are patented.

The use of **BLUAIR** represents an established and readily available opportunity to **decarbonise the steel industry**, while contributing to the Circular Economy.

In addition to **significantly reducing CO_2 emissions** and coal consumption, **BLUAIR** leads to increased industrial productivity and energy efficiency.
Many steelworks in Italy and Europe are currently replacing unsustainable fossil raw materials with **BLUAIR** in BF and EAF processes.

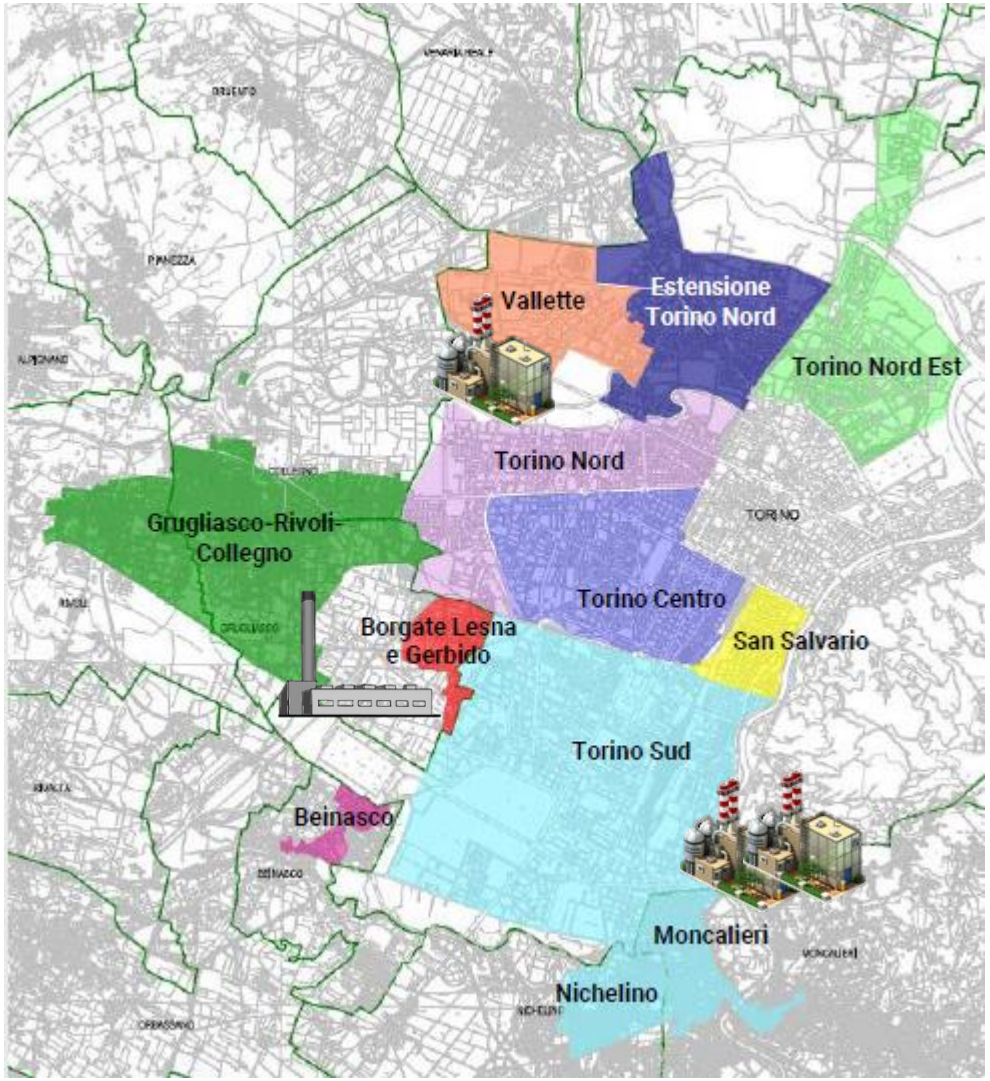
Mancasale WWTP: waste water reuse for agriculture

Mancasale (RE) WWTP represents the first plant in Emilia Romagna region equipped with an **advanced tertiary** treatment of waste water for **agriculture reuse.**

The project has been realized also thanks to the contributions of the European Union, through the Life project ReQpro.

The advanced tertiary treatment on the Mancasale WWTP includes a rapid filtration on sand (16 units) coupled with a **disinfection process** that combines the dosage of hydrogen peroxide (H_2O_2) with UV radiation and is able to remove the most persistent pollutants (mineral oils and surfactants) and significantly reduce the bacterial load (Salmonella and E. Coli).

Heat recovery: Turin district heating network



Some figures about the Turin district heating network:

- **71,35** million m³ heated volumes
- **700** km of double pipelines
- **7.584** substations connected to the network
- **1.860** MWth e **1.160** MWe installed power

Heat recovery from **CHP power plants** + **Waste-to-Energy plant** (thermal generation 2020: 2.278 GWh)

Largest district heating network in Italy

Thanks for your attention

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