



#WHERE THE MARKET MEETS

COLLABORATIVE APPROACHES TO METHANE MONITORING



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INSTITUTIONAL PARTNER



Gruppo Hera – about us

WHERE We come from

Founded in 2002 by the merger of 11 municipal companies in Emilia-Romagna, and the first corporation of its kind in Italy, Hera has embarked on a path of constant and balanced growth, incorporating other companies active in the same fields into the Group.

In 2020 Hera has been the first Italian multi-utility to be included in the Dow Jones Sustainability Index (DJSI).

WHAT We can do

Hera Group is a leader in waste, water and energy services and represents an unique entrepreneurial formula in Italy.

Within the panorama of public services in Italy, the Hera Group's leadership can easily be recognised in over **9,000 employees**, **5 million citizens served in over 300 municipalities** mainly located in Emilia-Romagna, Veneto, Friuli Venezia Giulia, Marche, Tuscany and Abruzzo.

WHO We are

Hera SpA is a **company** with over 200 public shareholders holding 49.32% of the share capital. The remaining is floating, and includes both private shareholders and institutional investors. It is now among the nation's largest multi-utilities and works mainly in the environment (**waste** management), **water** (aqueduct and purification) and **energy** (electricity and gas).



Search for gas dispersions with aerial technologies

The outcome of the trials with innovative "unconventional" tools carried out by Inrete Distribution Energy (Hera Group) to intercept methane gas leaks with aerial technologies (Earth Observation - EO)

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Supervision and coordination of energy policies and relations with standardization bodies

The current ways to work



Cars equipped with an aspiration system (in the bottom). The car follows the road and check if there are some gas leaks that come from the ground



Mobile Instruments with aspiration system in order to find gas leaks that come from overhead pipes



```
a.length;c++) {  
& b.push(a[c]);  
function h() {  
#User_logged".a(),  
place(/+(?=)/g,  
b = [, c = 0;c  
r(a[c], c-  
c-}
```



The main gas emission sources from the grid distribution

uncontrolled gas leaks



gas leaks generated from maintenance activities



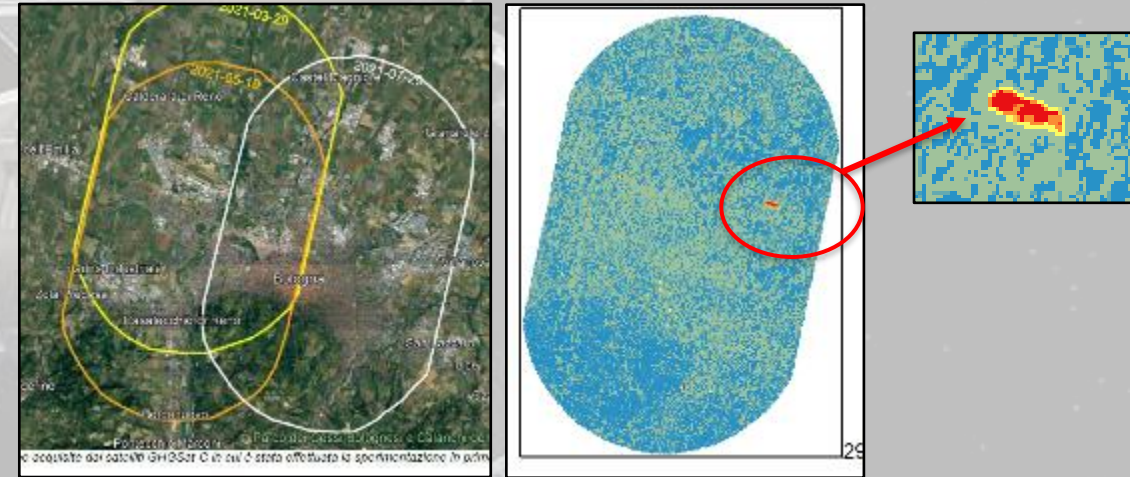
SATELLITES

The technology used



TEST TYPE 1:

>> Acquisition satellite images
>> research of eventually gas leaks in the zone signed by satellites as a potentially critical



- Acquisition timing: every 14 days
- High resolution
- Pixel: **50 x 50 meters**

TEST TYPE 2:

>> gas leaks and gas emission generated in order to understand the visibility from the satellites



method of measuring concentration



10 cm



OUTCOME OF THE EXPERIMENT



gas leaks
&
emissions generated from maintenance activities

NOT VISIBLE

> The concentrations of gas detected by satellite in this test are to be attributed to other sources (es: farms, biological Industry, etc.) or a match was not found in the field (we found gas pipelines without leaks or other situations where gas pipelines were not present)

> The typical gas leaks of the DSO (Distribution System Operator) are NOT visible with SATELLITE technology today available



Thanks for your attention

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