Transizione energetica e sostenibilità: il piano “Green” di INAF Bologna /

Energy transition and sustainability: the INAF Bologna ‘Green’ plan

Germano Bianchi (IRA), Francesco Cuttaia (OAS), Elisabetta Liuzzo (IRA), Filomena Schiavone (OAS)

28 Novemeber 2025 - IRA Seminar room - IV Floor

OUTLINE

- **INAF Green Working group**
  - Goals and perspectives
- **IRA Green activities**
  - with shared activities with OAS
- **OAS Green activities**
- **IRA/OAS mobility management**
  - Piano Spostamenti Casa Lavoro (PSCL)
- **The PSCL Survey**
  - Online compilation + Q&A



INAF GREEN OBJECTIVES

From Feb 2023, to promote:

- Sustainability
- Ecologic transition

How:

- reducing ***carbon footprint*** of the Institutes
- with efficiency, savings, and awareness initiatives
- to comply with legal obligations and guidelines

More info on the INAF Green website
https://green.inaf.it/

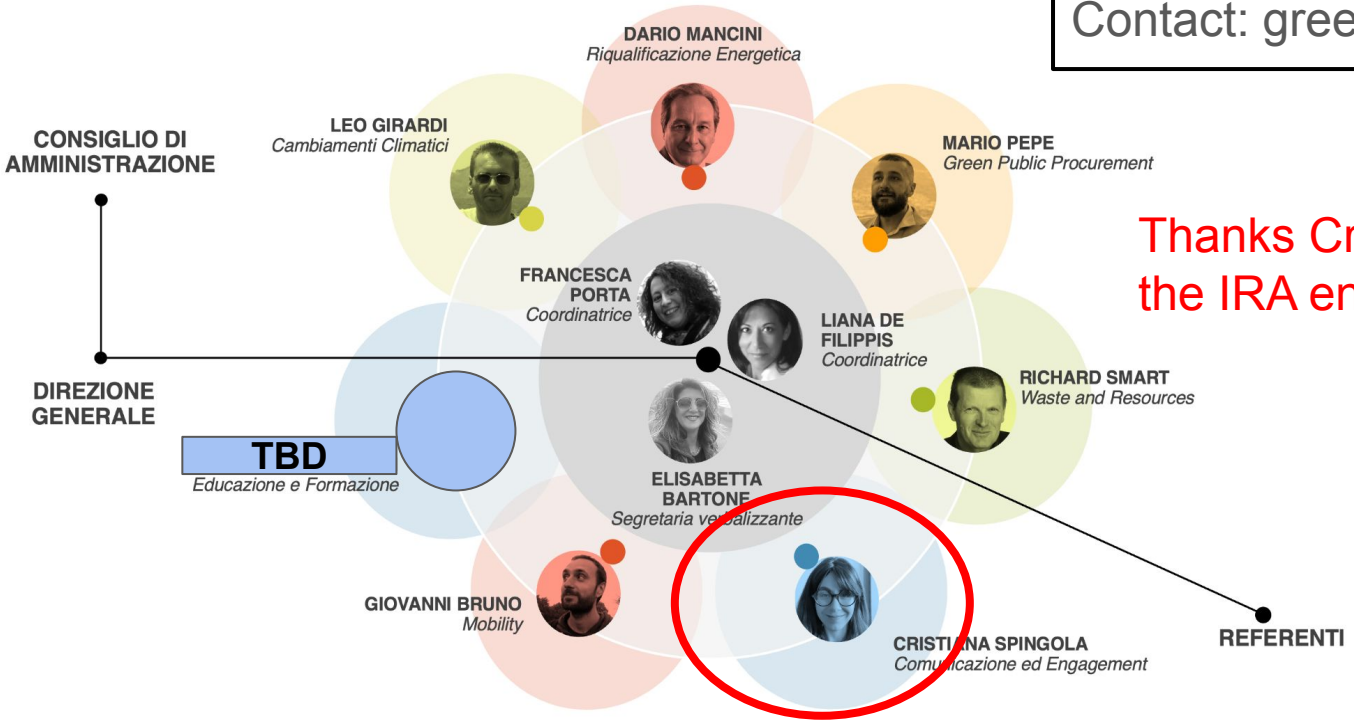


INAF GREEN STRUCTURE

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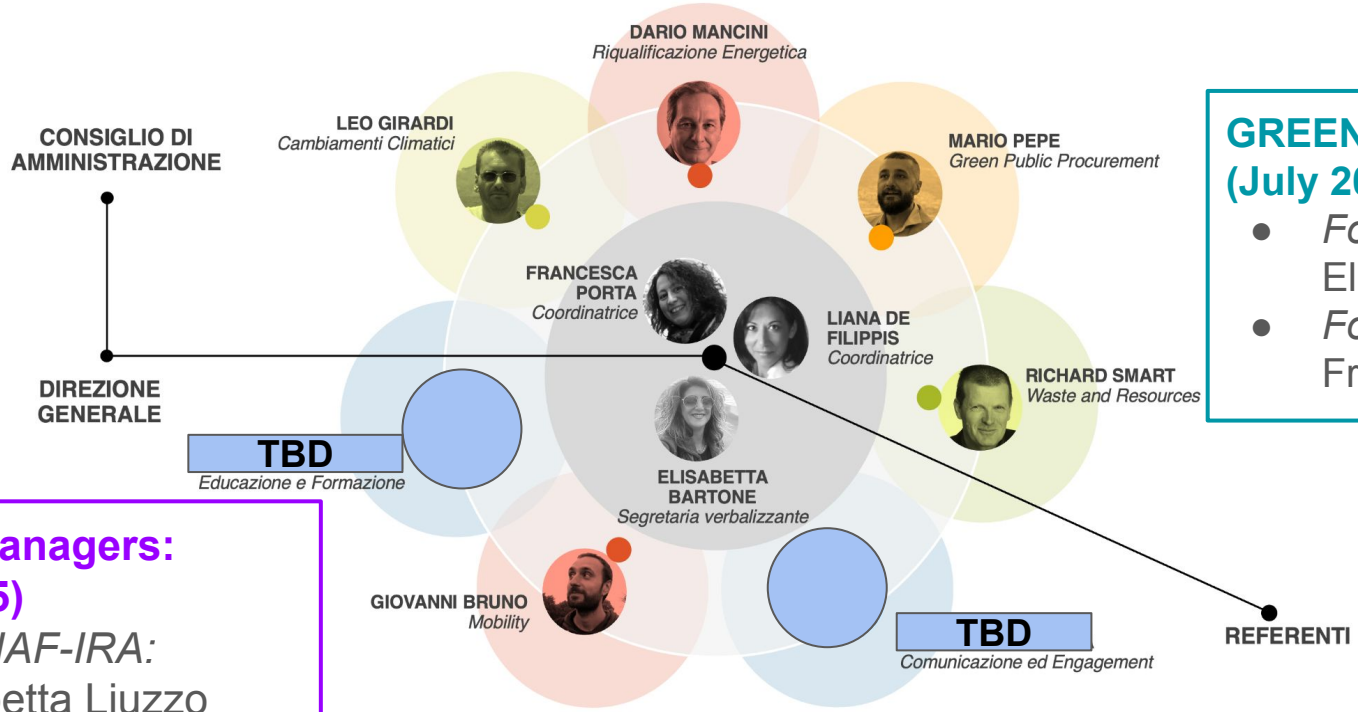
Contact: green@inaf.it



Thanks Cristiana for the IRA engagement !!

The areas were identified also with reference to the "***Agenda 2030 per lo Sviluppo Sostenibile***"

INAF GREEN STRUCTURE



GREEN Referents (July 2023):

- *For INAF-IRA:* Elisabetta Liuzzo
- *For INAF-OAS:* Francesco Cuttaia

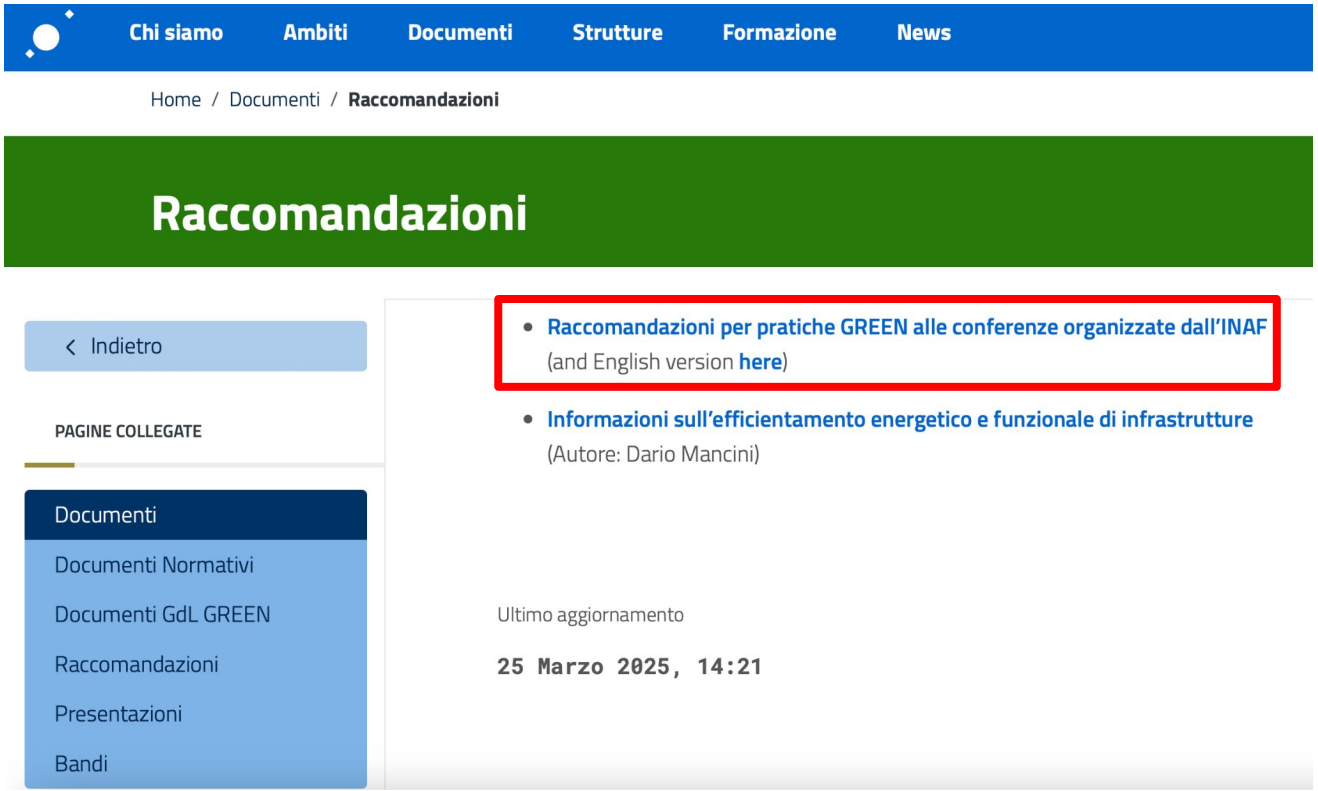
Mobility Managers: (Mars 2025)

- *For INAF-IRA:* Elisabetta Liuzzo
- *For INAF-OAS:* FIlomena Schiavone

Local Green team:

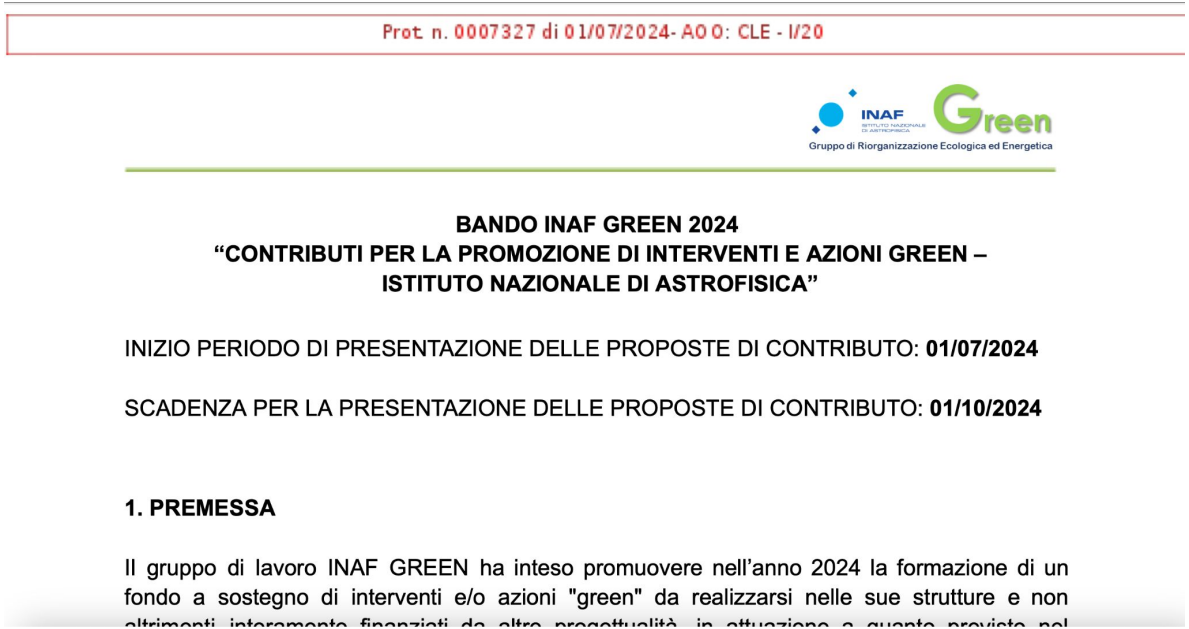
- *For IRA*, write to green-ira@inaf.it

RECOMMENDATIONS FOR INAF MEETINGS



- Travel with trains or public transport
- Catering mostly vegetarian
- Local food
- Plastic free
- Ecologic gadget
- City tour with bike

INAF GREEN CALL



Prot. n. 0007327 di 01/07/2024 - AOO: CLE - I/20

INAF Green
Gruppo di Riorganizzazione Ecologica ed Energetica

BANDO INAF GREEN 2024
"CONTRIBUTI PER LA PROMOZIONE DI INTERVENTI E AZIONI GREEN – ISTITUTO NAZIONALE DI ASTROFISICA"

INIZIO PERIODO DI PRESENTAZIONE DELLE PROPOSTE DI CONTRIBUTO: **01/07/2024**

SCADENZA PER LA PRESENTAZIONE DELLE PROPOSTE DI CONTRIBUTO: **01/10/2024**

1. PREMESSA

Il gruppo di lavoro INAF GREEN ha inteso promuovere nell'anno 2024 la formazione di un fondo a sostegno di interventi e/o azioni "green" da realizzarsi nelle sue strutture e non altrimenti interamente finanziati da altre progettualità in attuazione a quanto previsto nel

Every year, a call for **local green projects:**

- 200 keuro
- 40 keuro max / each
- 2 years length

- First in 2024, **next in the next month**
- measures to be implemented on **buildings and facilities**
- educational and **outreach** proposals, and/or the organization of courses or events
- **co-funding and shared activities** between Institutes are encouraged

IRA/OAS GREEN ACTIVITES

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Chi siamo | Ambiti | Documenti | Strutture | Formazione | News

< Indietro

PAGINE COLLEGATE

- Formazione
- Corsi
- Video e Webinars

Archivi

- Febbraio 2025
- Novembre 2024
- Luglio 2024
- Giugno 2024
- Marzo 2024
- Agosto 2023
- Luglio 2023

▶ Incontri formativi "Radioastronomia e sfide emergenti"

▼ Incontro con Nicola Armaroli "La decarbonizzazione dei Trasporti"

Mercoledì 9 aprile 2025 si è tenuto l'incontro dal titolo 'La decarbonizzazione dei trasporti' con il Dr. Nicola Armaroli (CNR-ISOF), membro dell'Accademia Nazionale delle Scienze e Direttore della rivista di scienza 'Sapere', oltre che noto esperto nel dibattito sulla transizione energetica. L'evento è stato organizzato da IRA ed OAS nell'ambito delle iniziative INAF- GREEN per promuovere una maggiore sostenibilità delle proprie Strutture. L'incontro si è svolto in modalità ibrida. Qui potete trovare sia le slides della presentazione che la registrazione dell'evento.



150 pers. in presence
+
140 pers. online

IRA GREEN ACTIVITES

- **Won** (first place) **the first Green call** issued by INAF;

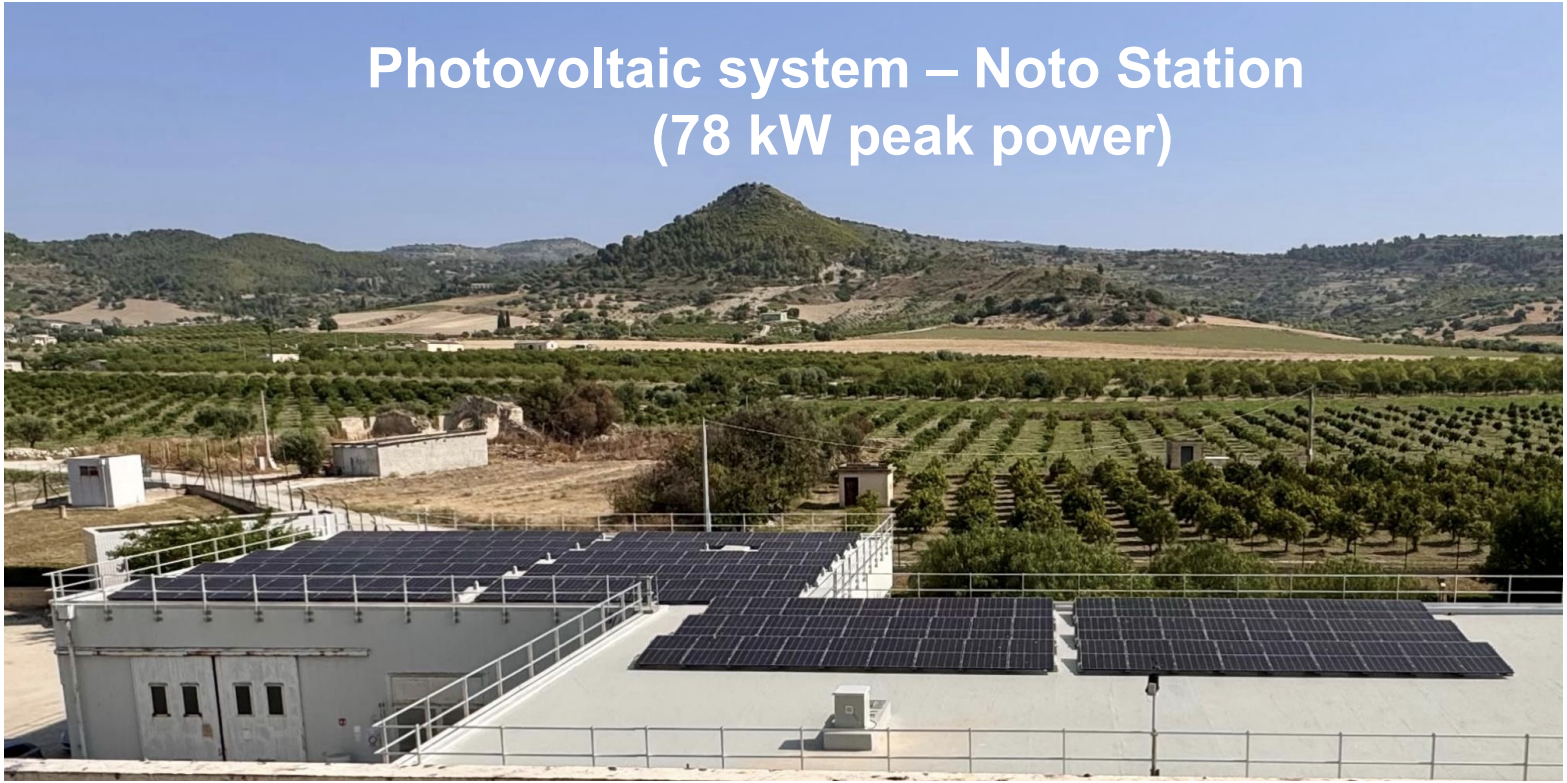
- Completed (and already operational) the photovoltaic system with storage batteries at the Noto Radio Astronomy Station (PNRR NG-CROCE funds). **This is the first INAF facility powered by FER (Fonte Energetica Rinnovabile);**

- Photovoltaic system with storage batteries currently being installed at the Medicina Radio Astronomy Station (PNRR NG-CROCE funds);
- Relamping completed at the Medicina and Noto Stations (PNRR NG-CROCE funds);
- Replacement of diesel boilers with heat pump air-conditioning systems at the Medicina Station (PNRR STILES funds);
- Renovation of laboratories and restrooms at the Medicina Radio Astronomy Station (PNRR STILES funds).

IRA-GREEN: FIRST STEPS

- Replacement of fluorescent light fixtures with LED panels at the Bologna site;
- Installation of solar-control/low-emissivity films on the windows of the Bologna site and replacement of the existing Venetian blinds;
- Preliminary study to drastically reduce heat loss in the buildings at the Bologna site;
- Installation of shading systems at the Noto site;
- Preliminary study for the refurbishment of the Noto guesthouse, with environmentally sustainable solutions;
- Mineral water dispenser installed at the Medicina site;
- Informative seminars:
  - La decarbonizzazione dei trasporti (Nicola Armaroli);
  - Petrolio addio, il ruolo delle comunità energetiche nella transizione (Leonardo Setti);
  - Energia dal Sole per esplorare l'universo (Fabio Altieri);
  - Il nostro pianeta e l'uso sostenibile dello Spazio che lo circonda (Pierluigi Di Lizia).

PHOTOVOLTAIC PANELS @NOTO



The photovoltaic panels were installed on the roof of the main building of the Noto Radio Astronomy Station, following renovation of the building's roof covering.

STORAGE BATTERIES @ NOTO

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215 kWh storage batteries installed at the Noto Radio Astronomy Station.

A unique, next-generation system.

This new storage system, designed and built inside a thermostated rack, ensures high performance and maximum safety. Automatic fire-suppression mechanisms have been integrated into the system. The unit is maintained at controlled temperature and humidity levels to guarantee optimal performance and long-term durability of the batteries.

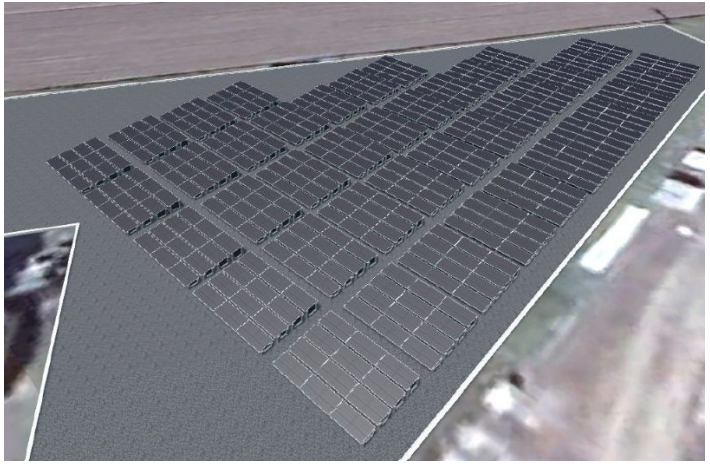


PHOTOVOLTAIC SYSTEM @ MEDICINA

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254 kW peak power



3D RENDERING
OF THE SYSTEM

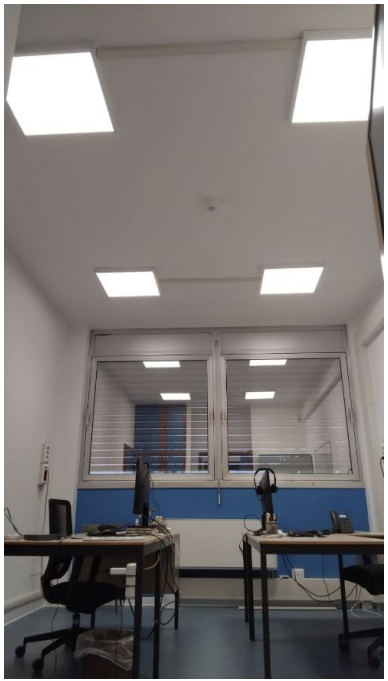
258 kWh STORAGE
BATTERIES PURCHASED

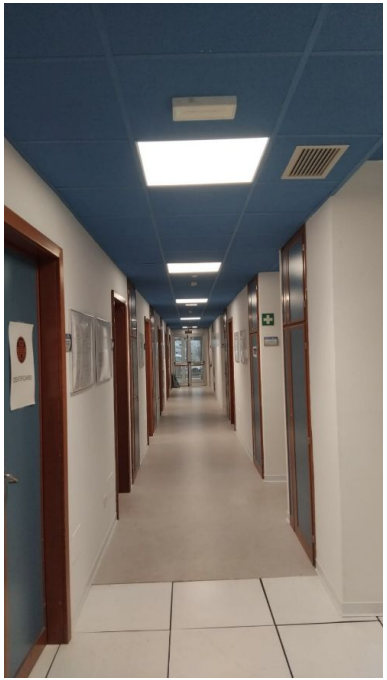




The photovoltaic panels will be installed on the ground behind the main building of the Medicina Radio Astronomy Station. Four underground diesel tanks previously located in that area have been excavated and disposed of.

RELAMPING @ MEDICINA + NOTO







Nearly 200 fluorescent light points have been replaced, or are in the process of being replaced, with LED panels equipped with presence and light sensors.

An energy consumption reduction of up to 68% is estimated

TANKS @ MEDICINA

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Soil remediation and disposal of diesel and kerosene tanks







LABORATORIES ET AL. @ MEDICINA







New laboratories, offices, and restrooms have been built, created from technical rooms that were no longer in use after the diesel boilers were replaced with heat pumps. The new rooms were constructed with thermally insulated walls and ceilings (8 cm insulation) and fitted with double-glazed windows with Argon gas.





OAS GREEN ACTIVITIES

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Francesco Cuttaia talk online

AREA TERRITORIALE DI RICERCA BOLOGNA MOBILITY

Area Navile Petition from 637 persons (Feb 25)

- In the next future, 4000 studs+profs @UniBo
- buses not sufficient in some hours
- Requests:
  - buses more frequent
  - re-opening of railway line FSM6



Our actions, in collaboration with CNR MM, UniBo MM:

- several interactions with Municipality
- seminar on the ‘Via della Conoscenza’ project with delegates from Bologna Municipality (July 25)
- we obtained from Oct 25 articulated buses for line 34 (to Bologna station)
- in 2026, conference on the present and future solutions for the Navile mobility

PIANO SPOSTAMENTI CASA LAVORO (PSCL)

Home-work travel Plan (DM 179/2021) **is mandatory** for:



- Companies and public administrations
- individual units > 100 people
- in a Municipality with > 50,000 persons
- to submit at the Municipality every December

Objectives

- reduction of private individual transport use and planning, programming, management, and promotion of optimal sustainable mobility solutions through the appointment of a Mobility Manager.

For OAS and IRA: > 100 persons for the Institutes @ Bologna.
PSCL 2025 is our first plan with the consulting of SEN Systemi Sas → ***Thanks to our Directors and Administrations for the support***

YOUR CONTRIBUTION IS ESSENTIAL !!

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Please fill the anonymous survey on the OAS/IRA mobility management.

The PSCL is mandatory for OAS and IRA in Bologna, but we encourage the Institutes in Loiano, Medicina, and Noto to complete the questionnaire as well.

For ALL OUR INSTITUTES, we are working to make your commute more sustainable.

NEW DEADLINE: 30/11



OAS and IRA PSCL SURVEY 2025