



Co-financed by the Connecting Europe  
Facility of the European Union

# Cold Ironing port of Genova Pra'

CEF Action n° 2014-IT-TM-0276-W  
INES - Implementing New Environmental  
Solutions in the Port of Genoa

*Davide Sciutto*

01<sup>st</sup> December 2021



Autorità di Sistema Portuale  
del Mar Ligure Occidentale





## ▣ Sustainable Development

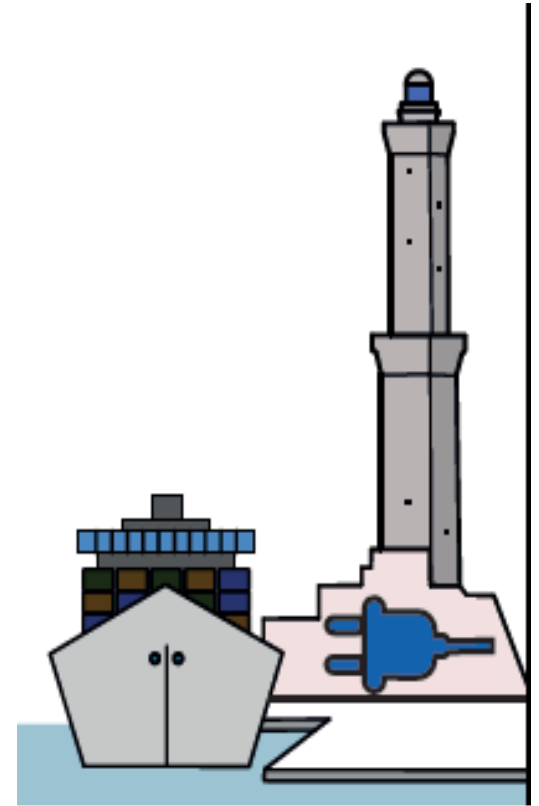
Development that meets the needs of the present without compromising the possibility to satisfy the needs of future generations

## ▣ Emissions

Reduction of the emissions in the atmosphere

## ▣ Acoustic pollution

Reduction of acoustic pollution





COLD IRONING READY FOR USE

*Container Terminal PSA Genova Pra'*





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## CONTAINER TERMINAL OF THE PORT OF GENOVA PRA' WORKS ENDED

European CEF funding  
4 docks - 2 ships - 8,300,000.00 euro  
2 frequency converters of 6 MW 6.6 kV 60 Hz

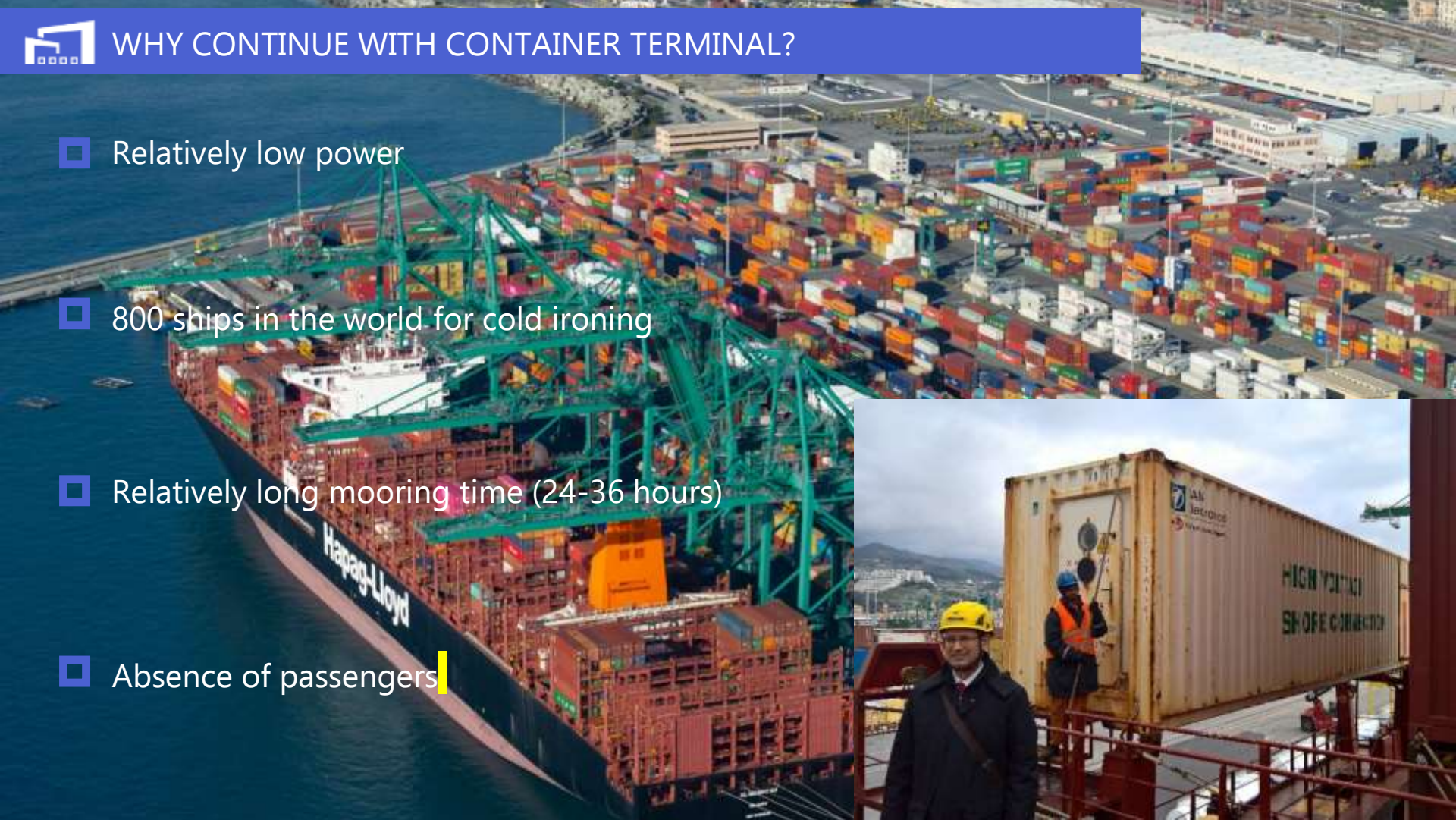






## WHY CONTINUE WITH CONTAINER TERMINAL?

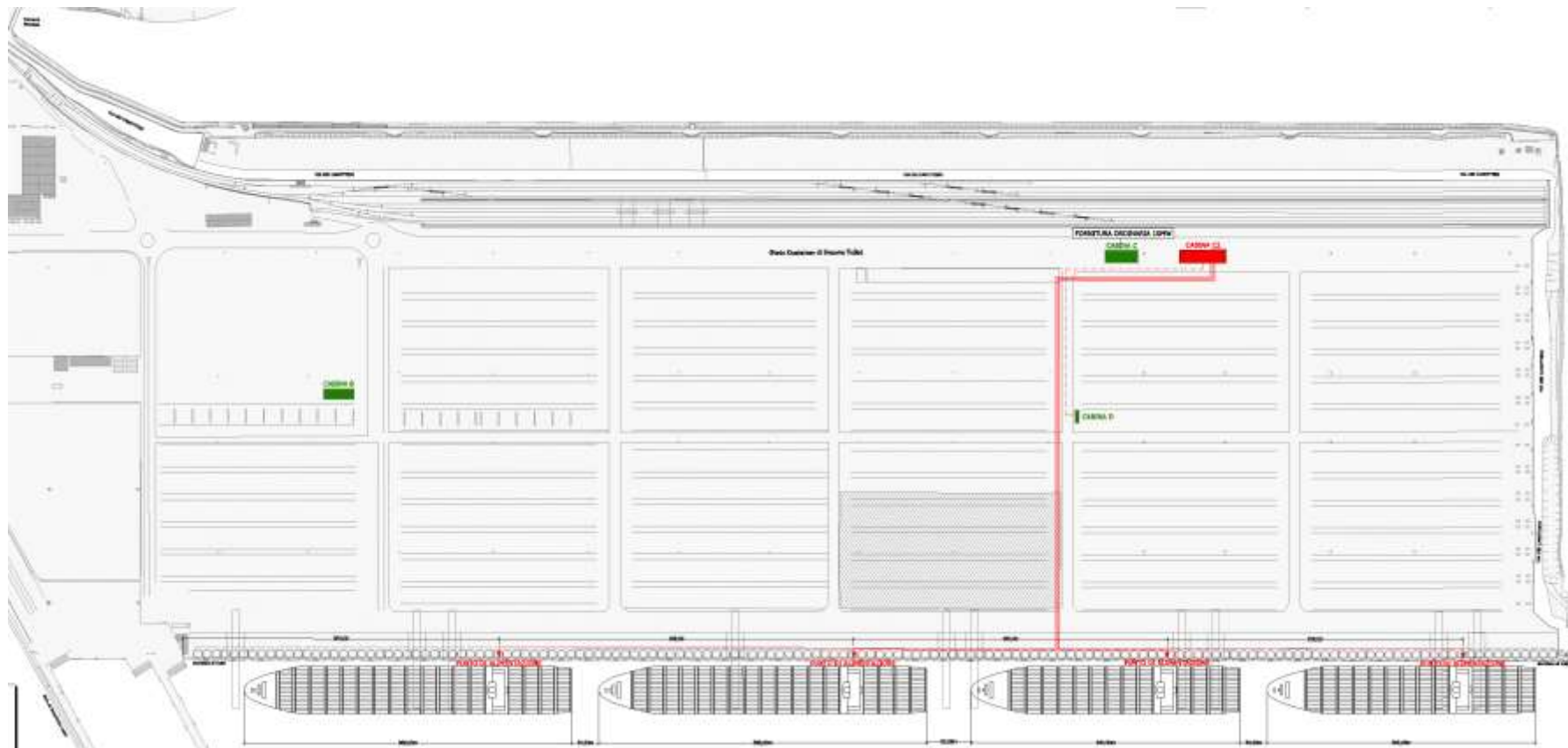
- Relatively low power
- 800 ships in the world for cold ironing
- Relatively long mooring time (24-36 hours)
- Absence of passengers





COLD IRONING READY FOR USE

*Container Terminal PSA Genova Pra'*





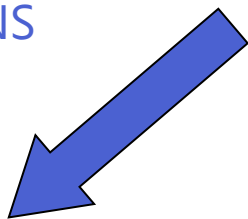
COLD IRONING READY FOR USE

*Container Terminal PSA Genova Pra'*

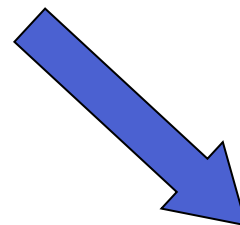
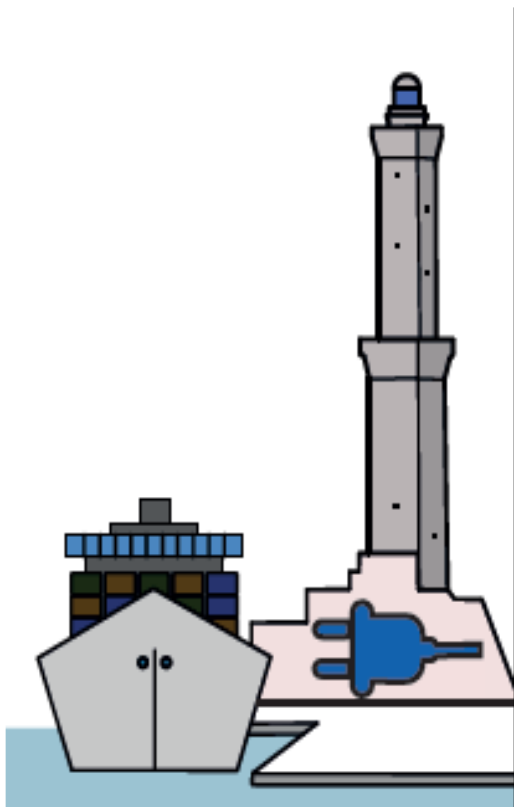
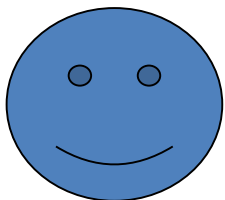




## EMISSIONS



Eliminated emissions



Transferred emissions







kWh SHIP COST		
LOW SULFUR FUEL COST	500	E/t
SPECIFIC CONSUMPTION	220	g/kWh
kWh SHIP COST	<b>0,11</b>	E/kWh
MAINTENANCE COST	20%	
kWh SHIP COST WITH MAINTENANCE	0,13	E/kWh
kWh SHORE COST		
AVERAGE PRICE FOR INDUSTRIAL USERS	<b>0,16</b>	E/kWh



# OPERATING COSTS - AVERAGE BUNKER OIL PRICE





kWh SHIP COST		
LOW SULFUR FUEL COST	500	E/t
SPECIFIC CONSUMPTION	220	g/kWh
<b>kWh SHIP COST</b>	<b>0,11</b>	<b>E/kWh</b>
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kWh SHORE COST		
<b>AVERAGE PRICE FOR INDUSTRIAL USERS</b>	<b>0,16</b>	<b>E/kWh</b>
LAW PROPOSAL		
SHIP TO CUSTOMS VIA TERMINALIST	0,11	E/kWh
CUSTOMS TO TERMINALIST AFTER VERIFICATION	0,16	E/kWh
<b>VIRTUAL SALE COST</b>	<b>0,11</b>	<b>E/kWh</b>



# OPERATING COSTS



kWh Mv COST	
TAXES	20%
SYSTEM CHARGES	40%
ELECTRICITY	40%

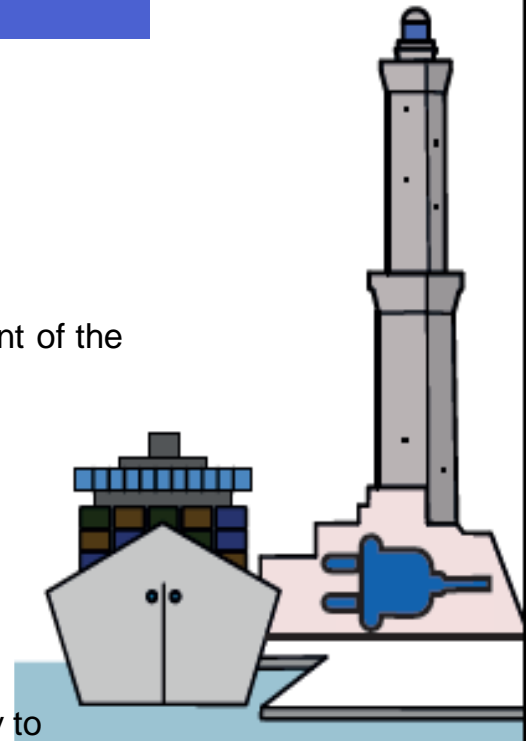
MOORING TIME	36	HOURS
POWER	1500	kW
ENERGY	54000	kWh
kWh Mv COST		
TAXES	20%	EUROS
SYSTEM CHARGES	40%	EUROS
ELECTRICITY	40%	EUROS





## EXEMPTIONS

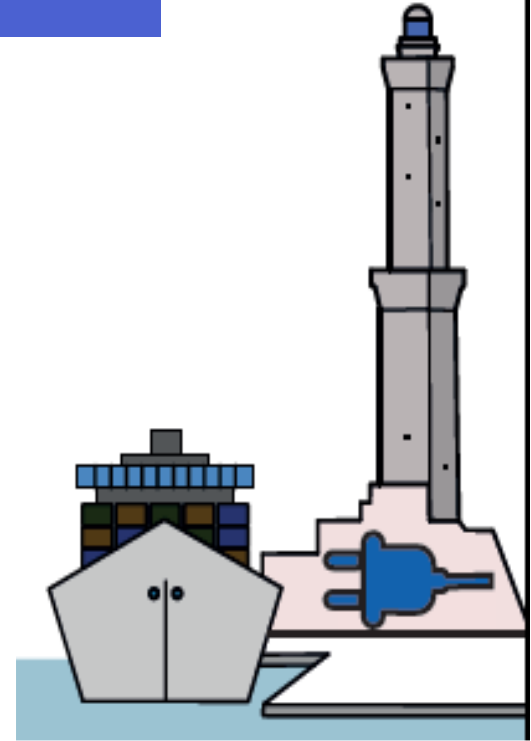
- ▣ Seminar on 2<sup>nd</sup> of July 2019  
(support from various associations)
- ▣ January 2020
- ▣ Excise Exemption (Subject to EC approval)  
Customs and Monopoly Agency new tax rates of 1 January 2020 and amendment of the Legislative Decree no. 504 of 26 October 1995, Annex I
- ▣ July 2020
- ▣ System charges exemption  
Law Decree no. 76 of 16 July 2020, art. 48 paragraph 7 bis
- ▣ Council Implementing decision (EU) 2021/2058 – 23th NOV 2021  
authorizing Italy to apply a reduced rate of taxation to electricity supplied directly to vessels, other than private pleasure craft, at berth in a port



<b>kWh SHIP COST</b>	<b>0,11</b>	<b>E/kWh</b>
kWh SHORE PRICE FOR INDUSTRIAL USER	0,16	E/kWh
<b>kWh EXEMPTIONS COST</b>	<b>0,09</b>	<b>E/kWh</b>



- Innovations in procedures for procurement awarding
- Project management of lesson learned on risk management
- Naval repairs, container terminal of Genova Pra'
- Economically advantageous offer in integrated procurement
  - 1) Reference and main company on the market
  - 2) Design company with experience in the sector





## ■ Mixed Contract

Qualification: works, soa; supply of services, technical capacity

Objective: company/converter supplier temporary association

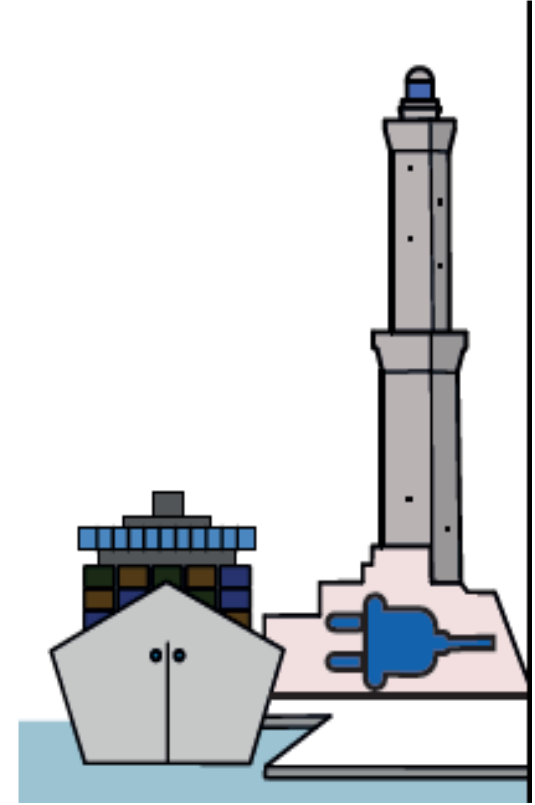
## ■ Ten-year converter maintenance

Life cycle

proprietary technology converter

objectives:

- economies of scale
- quality converter
- in case of failure, no costs for the terminalist
- Port Authority will not award contracts to a single company

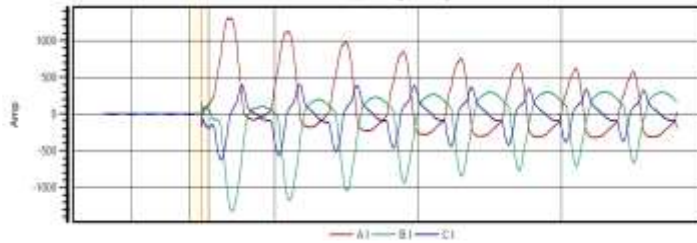




## Adaptive Relays



## Soft Magnetization



## Variable grounding



## Submarine Cable



## Multi-ship connection



## 132 kV substation



## Functional safety

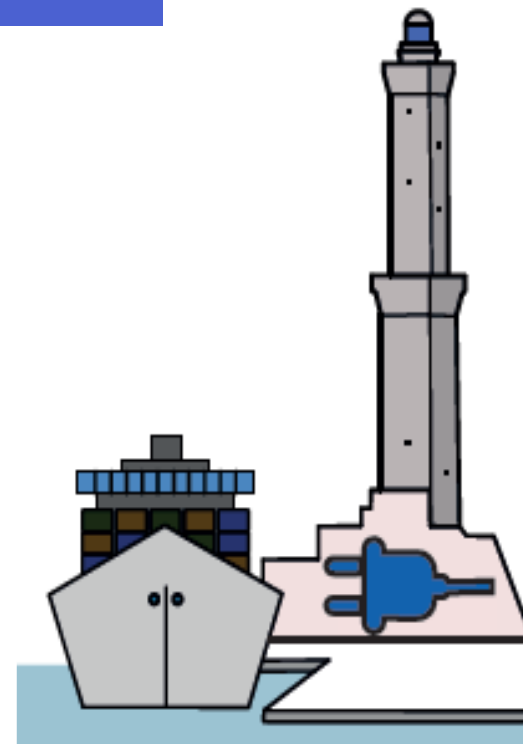






- The Ligurian region is an European and Mediterranean excellence in cold ironing (procurement final project)
- Share our experience with ministry and/or other port authorities
- **Proposal to the ministry of infrastructure**

**Establish a contracting authority in Italy for cold ironing projects with our support for the recovery fund**



THANKS FOR YOUR  
ATTENTION.

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