



HEDNO

HEDNO's Innovation Overview

Nikos Stefanakis - Assistant Director

Research & Innovation Department

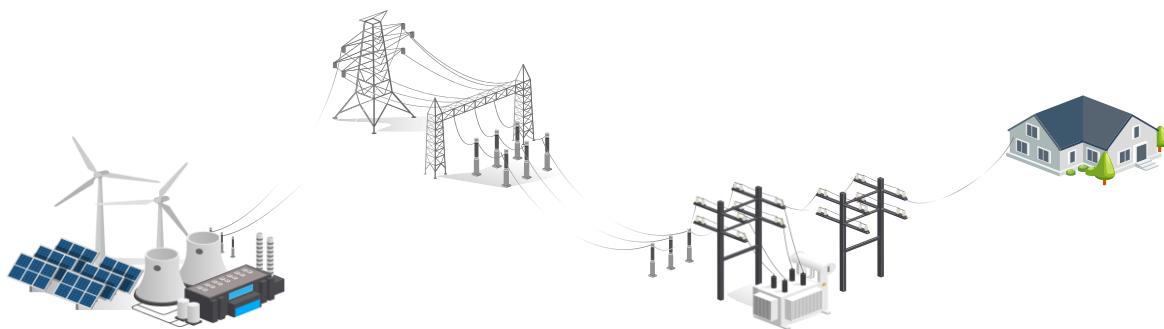
GD Network Development & Management



8 MAY
2025
COTSEN HALL
ATHENS

INNOVATION
IN **ENERGY**
CONFERENCE

The sole distribution system operator in Greece



As the **sole distribution system operator (DSO)** of **Greece**, HEDNO develops and manages the medium and low voltage network, distributing electricity from the high-voltage system to residential and commercial consumers in the interconnected system and non-interconnected Islands



Consumer

~7,7 million customers¹

100% share of population² with access to electricity



Economy

~23% EURbn of Greek GDP enabled through DSO-supplied electricity³

5.9 thousand FTEs directly employed⁴



Network

~250 thousand km of electrical lines⁴ with 245 HV/MV and 168k MV/LV substations⁶

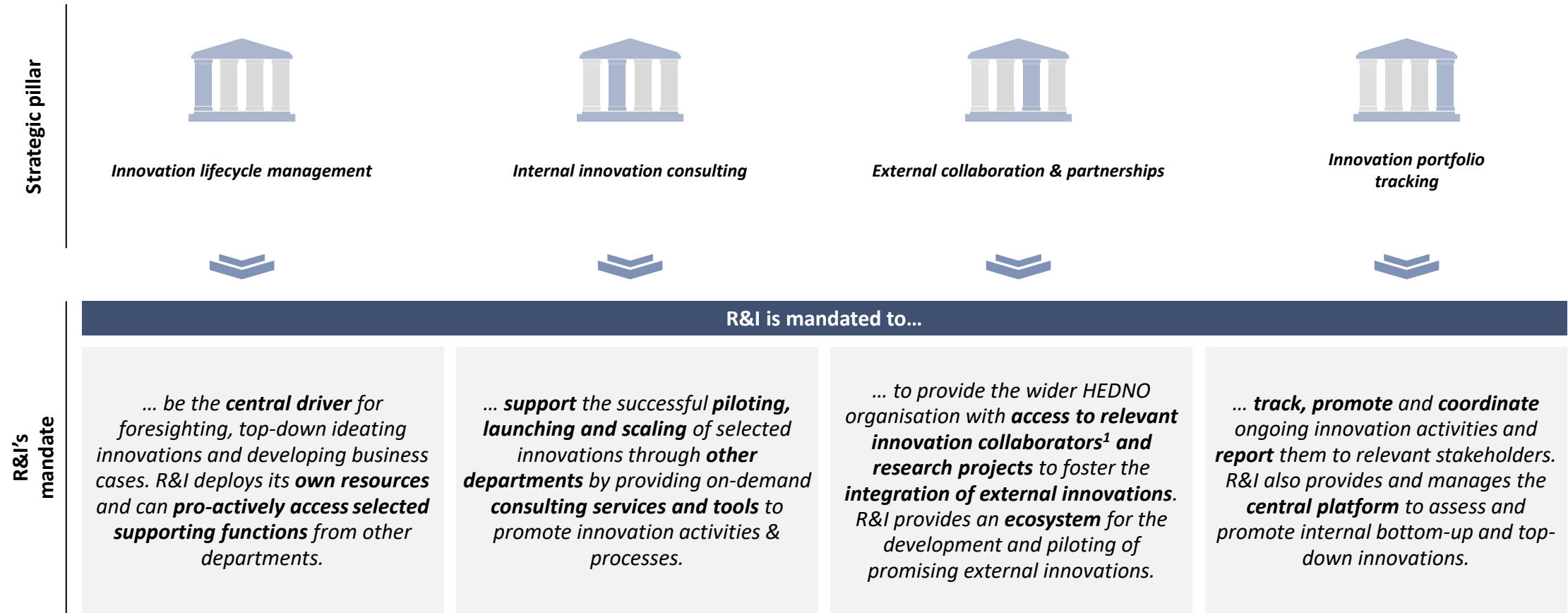
8.3 GW RES connected⁴

770 EUR million investments in 2024⁵

1. 7.729.116, number of active customers H1 2024 | 2. World Bank estimates for 2023, since 2016 estimates of ~100% | 3. According to NECP ~30% of industrial energy demand from electricity and 83% of electricity supplied to industry through distribution network | 4. Actuals 2024 | 5. Estimate 2024 | 6. H1 2024

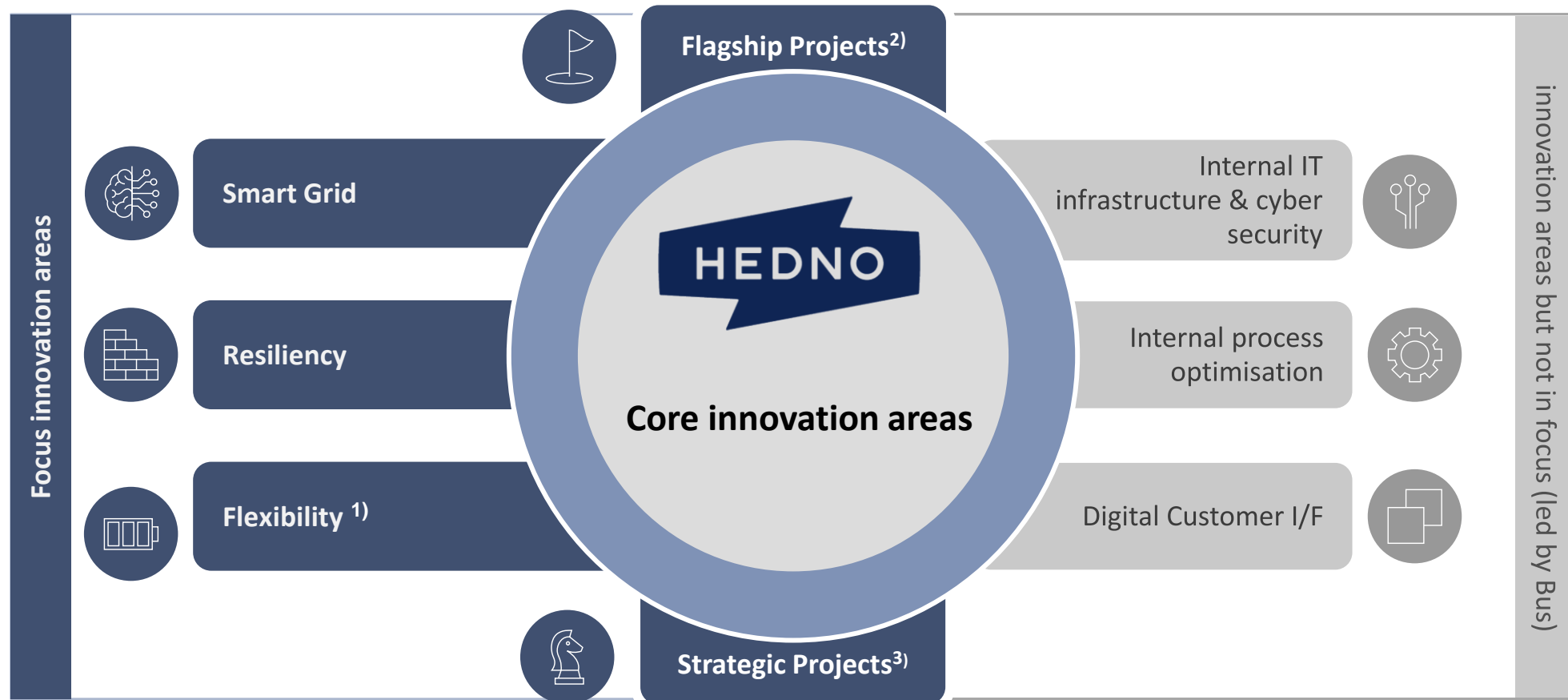
Source: HEDNO Strategy & Transformation department, World Bank, NECP, Press search

R&I is mandated to be the central driver and enabler of innovation at HEDNO, providing consulting services and fostering an external innovation ecosystem



1) In this capacity R&I also represents HEDNO on the Research Innovation Committee of E.DSO

Innovation scope for HEDNO comprises eight distinct focus areas



1) Includes Storage, V2G, Sector coupling

2) Flagship projects (Smart Metering, Innovation Hub, Smart Grid Master Plan, ROC Benchmarking)

3) Strategic Projects (E-mobility, multi-utility, fiber enabled smart network, new business)

HEDNO’s Innovation Hub

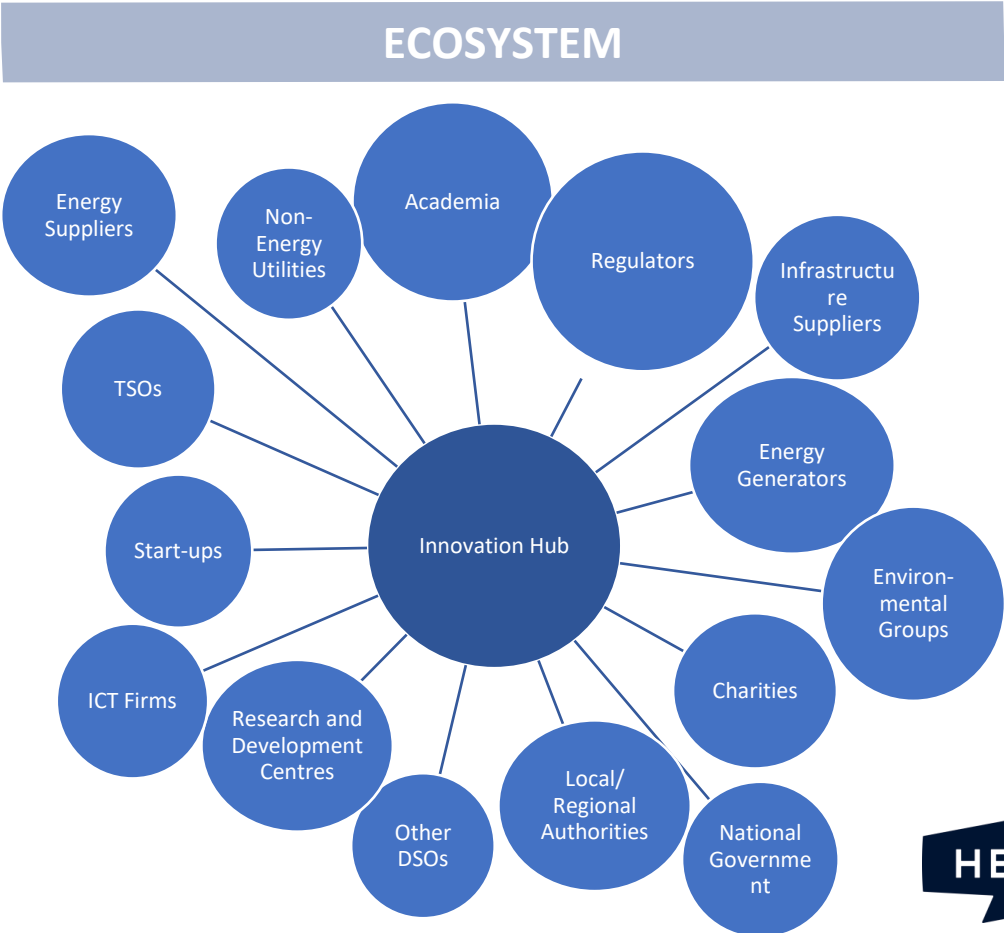
The **HEDNO’s Innovation Hub** aims to **interconnect the key stakeholders in electricity distribution** sector, but also more broadly, by implementing a series of **programmes and actions that will promote and accelerate innovation** and will result in significant **business and social benefits**.

VISION

To become the first integrated **ecosystem for innovation in the the electricity distribution sector** in Greece and internationally.

MISSION

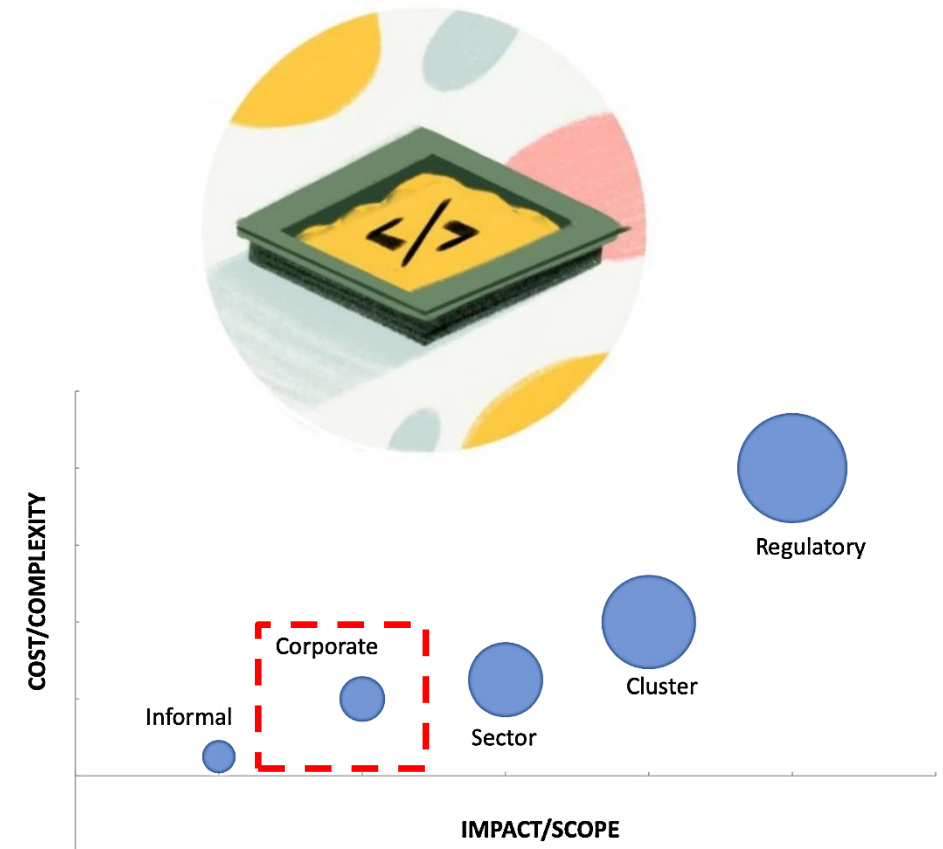
To connect the basic groups of stakeholders in the electricity distribution sector - and more broadly - in order to develop innovative ideas, technologies, and high added-value products/services that respond to the challenges of the new energy environment and sustainable development



Corporate Sandbox

HEDNO introduced the concept of the “corporate – led sandbox” that is becoming a case study

- ‘The regulatory sandbox allows innovators to trial new products, services and business models in a real-world environment without some of the usual rules applying.’ (Ofgem, 2018).
- In December 2022, HEDNO signed an MoU with Regulatory Authority for Energy, Waste & Water (RAEWW¹) to create the “Hellenic Electricity Sandbox – HELSA” aiming to develop solutions in critical problems (e.g., Electricity theft, electrification of ships). RAEWW’s VPs participation in the Sandbox Steering Committee est.
- HELSA is a “Corporate Sandbox”, but it is highly critical as HEDNO is a monopoly in the Greek energy market. As such it aims to pave the way for a future regulatory sandbox in cooperation with the RAEWW and other public authorities.
- Under the umbrella of HELSA, the 1st Sandbox action was implemented in 2023: HEDNO Datathon: AI for Power Theft Detection.



EU Funded R&I Projects Overview



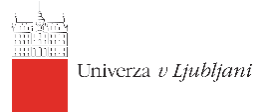
21 Research & Innovation Projects



57 Researchers



Collaborations with Universities, Research Institutes, Associations, Energy and Technology Corporations and SMEs



Cuerva*



Ongoing EU R&I Projects

<div>E-Mobility</div> <div>1. EV4EU</div> <div>Flexibility</div> <div>2. OPENTUNITY</div> <div>3. ENFLATE</div> <div>4. EVELIXIA</div> <div>5. ODEON</div> <div>6. HEDGE-IoT</div>	<div>Energy Storage</div> <div>7. SINNOGENES</div> <div>8. ASTERIX-CAESar</div> <div>9. CRAVE-H2</div> <div>Smart Grid</div> <div>10. R2D2</div> <div>11. CRETE VALLEY</div> <div>12. SYNERGIES</div> <div>13. TwinEU</div> <div>Data</div> <div>14. DATAMITE</div> <div>15. ACCOMPLISH</div>	<div>Cold Ironing</div> <div>16. CENTAVROS</div> <div>17. ALFION INFRA</div> <div>18. DECOMPRESS</div> <div>Cyber Security</div> <div>19. COCOON</div> <div>Training</div> <div>20. MOTIVATE XR</div> <div>Demand Response</div> <div>21. ECLIPSE</div>
--	---	---



Why focus on Cold – Ironing?

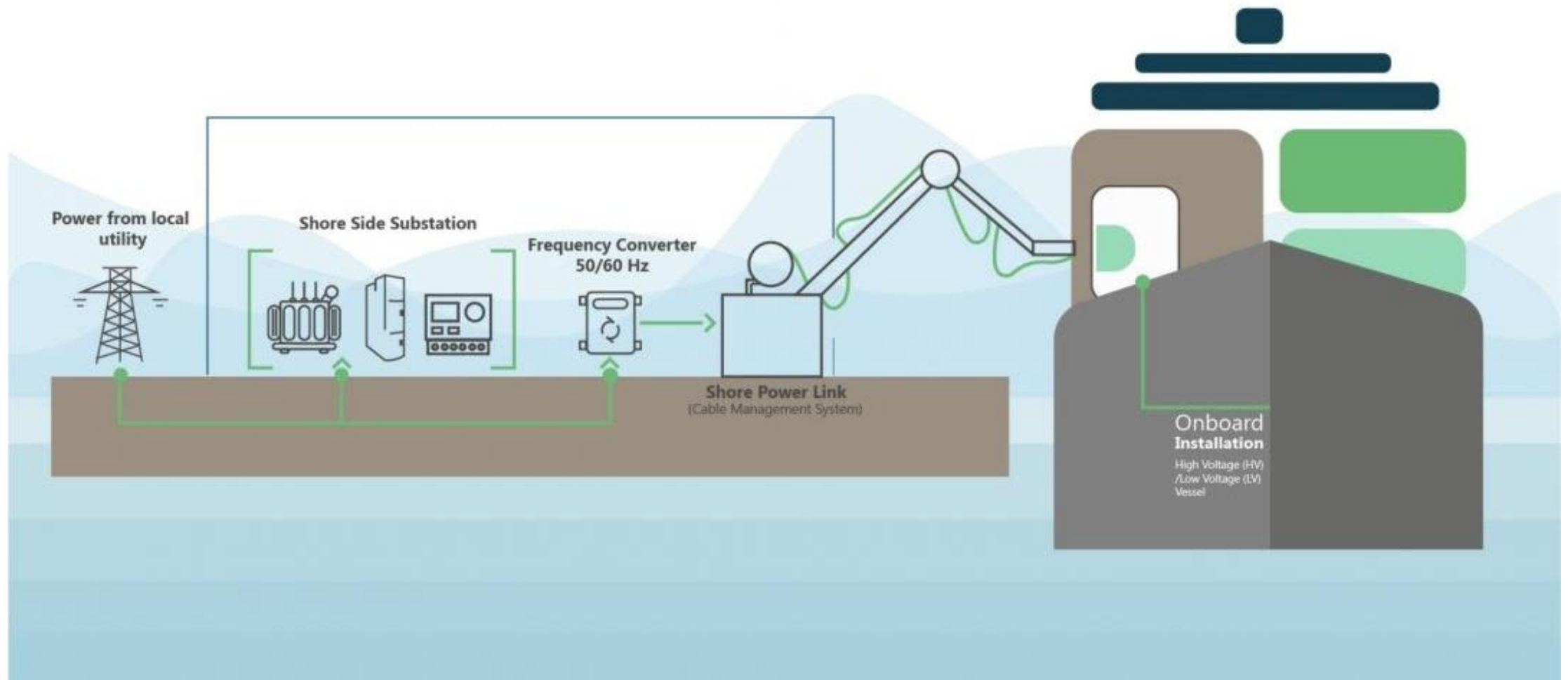


- EU REGULATION: In July 2023, EU adopted two new regulations within the “Fit for 55” package regarding CI
- FuelEU (2023/1805/EU): Container and passenger ships greater than or equal to 5,000 Gross Tonnage (GT) are obliged, by 2030, to connect to CI to cover their electricity needs during their stay at berth.
- Alternative Fuels Infrastructure Regulation (AFIR; 2023/1804/EU): EU’s TEN-T core and comprehensive ports are obliged to install at least one CI position by 2025 and 2030, respectively.

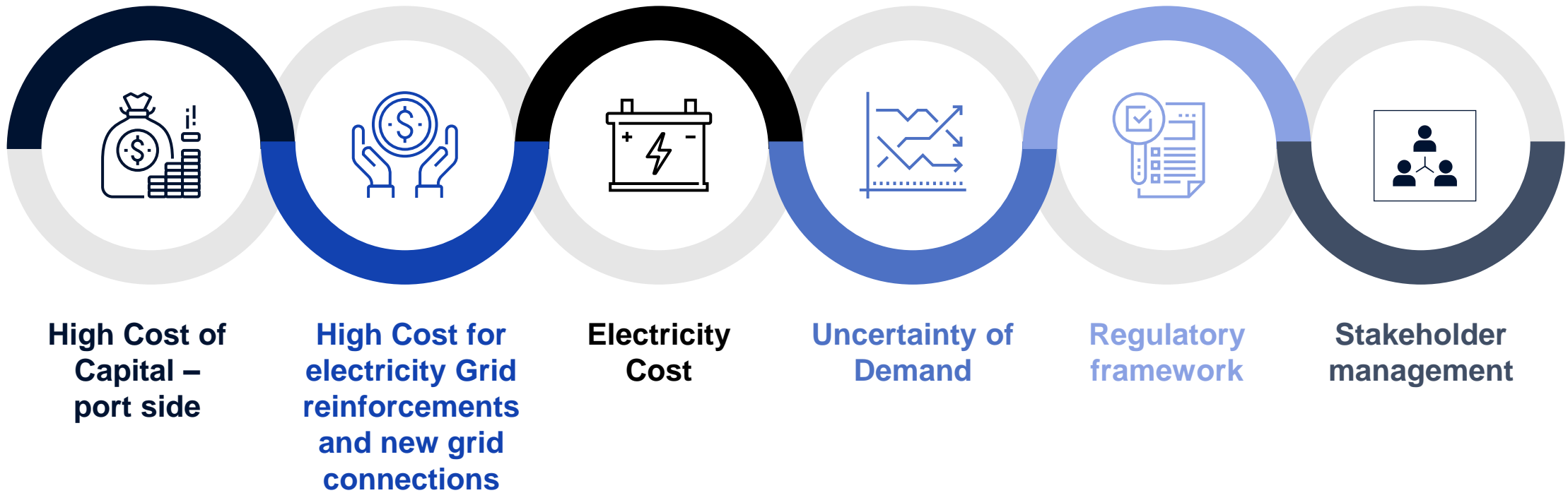


- Maritime emissions in EU reach about 130MtCO₂
- According to the International Maritime Organization (IMO), maritime emissions are expected to increase up to 50% by mid-century, if strict measures are not taken
- The maritime sector in Greece is responsible for 18% of the country's CO₂ emissions (~6.6 MtCO₂ or approximately 10% of total Greek greenhouse gas emissions)
- It is a significant source of local emissions (NO_x, SO_x, etc.) in several urban areas located near major ports.
- The electrification and decarbonization of ports and ships leads to multiple and important environmental and climate benefits.

Cold Ironing Infrastructure








Cold Ironing Challenges








HEDNO as Facilitator of Cold-Ironing in Greece

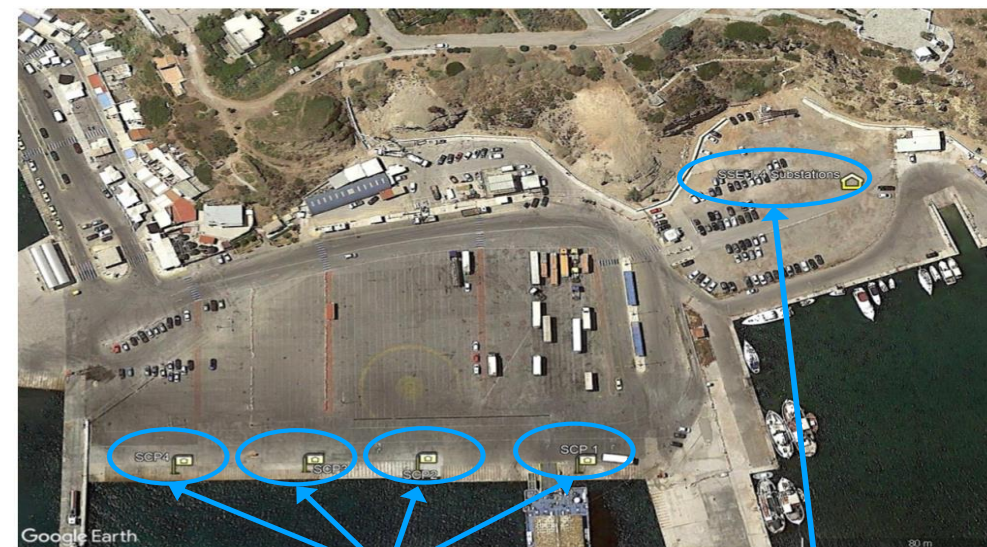
HEDNO participates in several port electrification projects, mainly through the EU mechanism "Connecting Europe Facility" (CEF), undertaking Front-End Engineering (CBA) and Cost Benefit Analysis (CBA) studies and constructing integrated "Cold Ironing" infrastructure.

Project	Port	Scope	Stage
ALFION	Igoumenitsa	Feed + CBA studies	Complete
CIPORT	Piraeus	Feed + CBA studies	Complete
CENTAVROS	Volos	Feed + CBA studies	Complete
ALFION INFRA	Igoumenitsa	Construction of 3 CI positions Feed + CBA studies for Cruise ships	Ongoing (12/2026)
GR-Eco Islands	Poros	Ministry initiative	Complete
DECOMPRESS	Rafina Lavrio Kavala Corfu	Construction of 4 CI positions (Rafina) Feed + CBA studies (Lavrio) Feed + CBA studies (Kavala) Feed + CBA studies (Corfu)	Started on 12/2024

i IGOUMENITSA PORT	
	Funding CEF 101122898
	Budget € 8,900,000
	Completion 12/2026
	Coordinator Igoumenitsa Port Authority (OLIG)
	Project <ul style="list-style-type: none"> • 3x positions for Shore-Side Electricity (2x3 MVA & 1X0,5MVA) • FEED study for cruise



i RAFINA PORT	
	Funding CEF 101175817
	Budget € 9,670,000
	Completion 12/2028
	Coordinator Lavrio Port Authority
	Project <ul style="list-style-type: none"> • 4x1,5MVA positions for Shore-Side Electricity • FEED studies for Lavrion, Kavala, Corfu



Οι 4 θέσεις OPS

Υ/Σ Που εξυπηρετεί τις θέσεις OPS

Research & Innovation Dpt.

Thank you!!!

HEDNO