



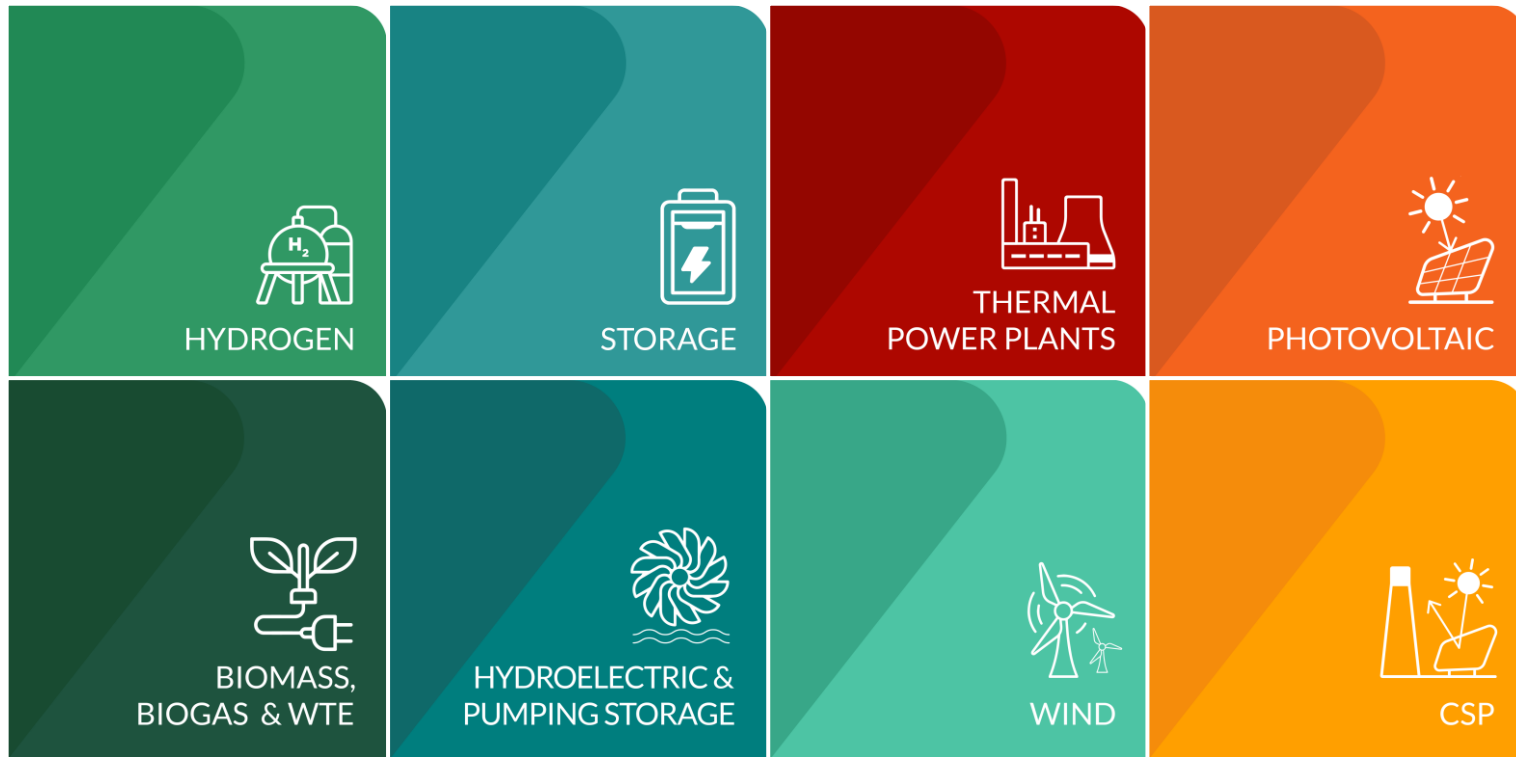
**POWERING TOGETHER A BETTER TOMORROW**

**ENGINEERING SERVICES FOR ENERGY**

**ESE Skills**

**[WWW.ESESRL.COM](http://WWW.ESESRL.COM)**

# Powering together a better tomorrow



- Decarbonization studies
- Due diligences
- Project management & EPCM

- Owner's Engineering, LTA, Tender services
- Engineering and Advanced engineering
- Economic, contractual and legal advisory

# Feasibility Studies

## CONVENTIONAL PLANTS

- Combined Cycles
- Open Cycles
- Engines
- Cogeneration Plants
- Thermal Plants

## RENEWABLES PLANTS

- Solar PV (ground, roof)
- Floating Solar PV
- Solar CSP
- Hydro and Mini-Hydro
- Biomass and WtE
- Wind (Onshore/Offshore)

## STORAGE PLANTS

- Electric storage
  - Batteries
- Mechanical storage
  - Fly-wheels
  - Pumping Storage
  - Energy Vault ©
- Thermal storage
  - Molten Salts
  - Energy Nest ©
  - Oil-magnetite
  - Brenmiller ©
- Hydrogen

## REFERENCES (Last 10 years)

*Melfi, 50MW+50MW, H2 production plant – Mayotte, 12MW, Biomass – Mauritius, 70MW, CSP – Solecaldo, 40 MW, CSP – Prospecton Cape Town, 4,5MW, PV (stream) – Sicily's Fresnel plants, 4MW, CSP – Molten salt thermal storage for refinery, 200 MWh – H2 Electrolysis plant, 80 MWe – RCS Plant, 2 MW, Cogen – Castelromano Plant, 10 MW, Cogen – Rotem, 60-120MW, CCPP Cogen – Angola, 560MW (different locations), Engines – Cuima, 30MW, biomass – Neshor, 200MW, Pumping Hydro – Bari Hope Project, 600MW, Green H2 – Fanaco 20MW Floating PV and many others ...*



# Owner's Engineering, LTA and EPCM

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## REFERENCES (Last 10 years)

Trapani, 200MW Peaker, – Fiume Santo, 560MW CCPP – Ramat Gabriel, 70MW CCPP, Cogen – Asola, 4MW, Roof PV (stream) – Sugat, 70MW CCPP – Krusevac, 5MW, Biomass, District Heating – Bracco, 7MW, Cogen – Trenzano, 6MW, PV (stream) – Dalia, 16MW-64MWh, Battery Storage – Etgal Ashdod, 200MW, OCPP – Minos, 50MW, CSP – Mayotte, 12MW, Biomass – Genga HPP, 0,7MW, Hydro (stream) – Fiume Santo, 100MW-250MWh, Battery Storage – Ashdod engines, 100MW, LTA – Fanaco 20MW Floating PV – Bari H2 Refueling Station and many others ...





# Plant Conceptual and Basic Design

## CONVENTIONAL PLANTS

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- Open Cycles
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## RENEWABLES PLANTS

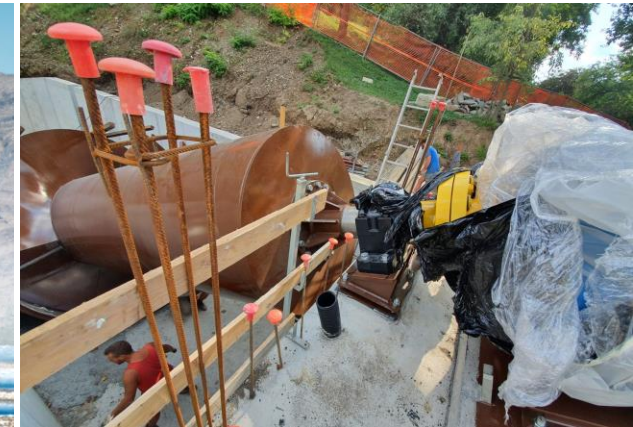
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## REFERENCES (Last 10 years)

*Butia, 450MW<sub>iso</sub> CCPP – Galatone, 8MW, PV (stream) – AMSA repowering, 60MW, WTE – Brindisi, 6MW, PV (stream) – Falkland Island 6 MW, Engines, District Heating – Indonesia 250 MW, Engines – Ramat Gabriel, 70 MW, CCPP Cogen – Cuasso, 0,7MW, Hydro (stream) – Alon Tavor, 70MW, CCPP Cogen – Asola, 0,6MW, Hydro (stream) – Enna, 28MW, Biomass – Nesher, 200MW, Pumping Hydro – Lupiae Maris 525MW Off-shore Substation and many others...*



# Bid Documents & Cost Estimation

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## REFERENCES (Last 10 years)

*Karoshhoek 100 MW, CSP – Ashalim, 110MW, CSP – Noor 3, 150MW CSP – QAPCO, 120MW, OCPP – Ramat Gabriel, 70MW CCPP, Cogen – Alon Tavor, 70MW CCPP, Cogen – Bracco, 7MW, Cogen – Etgal, 200MW, OCPP – Arar, 160MW, OCPP – Neshar, 200MW, Pumping Hydro – Angola, 560MW (multiple sites), Engines – Etgal Ashdod, 120MW, CCPP – Cuima, 30MW, Biomass – SIBCO Jeddah, 50MW, 3-Gen with GTs and Engines – Bari H2 Refueling Station – Molfetta 1MW H2 production plant – Bois Rouge 10MW WtE and many others...*





# Due Diligence (new & existing plants)

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## REFERENCES (Last 10 years)

*Jubail and Jambu, >2GW, CCPP & Thermal – Puerto Errado, CSP, Troubleshooting – ERG Hydro (26HPPs, >500MW) – Cesano, 70MW, CCPP – Sorek, 110MW, CCPP – Enipower, >1GW, 7xCCPP – Metanergia, >300MW, 8xEngines Plants – Crete 50 MW CSP financial model DD – Granarolo 6xEngines Plants – Montazer Ghaem & Shahid Montazeri > 1GW Steam Plants – Huntsman Pigmenti, 5 MW, Cogen – Ashalim plot A, 100MW, CSP, performance DD – Barilla, 30MW, CCPP Cogen, troubleshooting – NK Hydro, 7,3MW, Hydro (stream) – Ashdod Refinery and Power Plant and many others...*



# Engineering Support to R&D activities

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## REFERENCES (Last 10 years)

*New design for a 6MWth steam solar receiver (pilot) – New design for CSP receivers for small plants – Analysis of a new storage system based on CO<sub>2</sub> – New molten salts once-through steam generator – Design of a molten salt thermal storage for refinery, 200 MWh – Comparison of Molten Salt and EnergyNest storage systems, 200 MWh – H<sub>2</sub> Electrolysis plant, 80 MWe – New molten salts heating system for gasification – New PV Floating System (FlotoFoto development) and many others...*





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THANK YOU!

