



**POWER ENERGY CYPRUS LTD**



# Private Investments in the Energy Sector

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# Regulatory and market conditions are ideal for the investments into the energy sector

## Current Market Overview

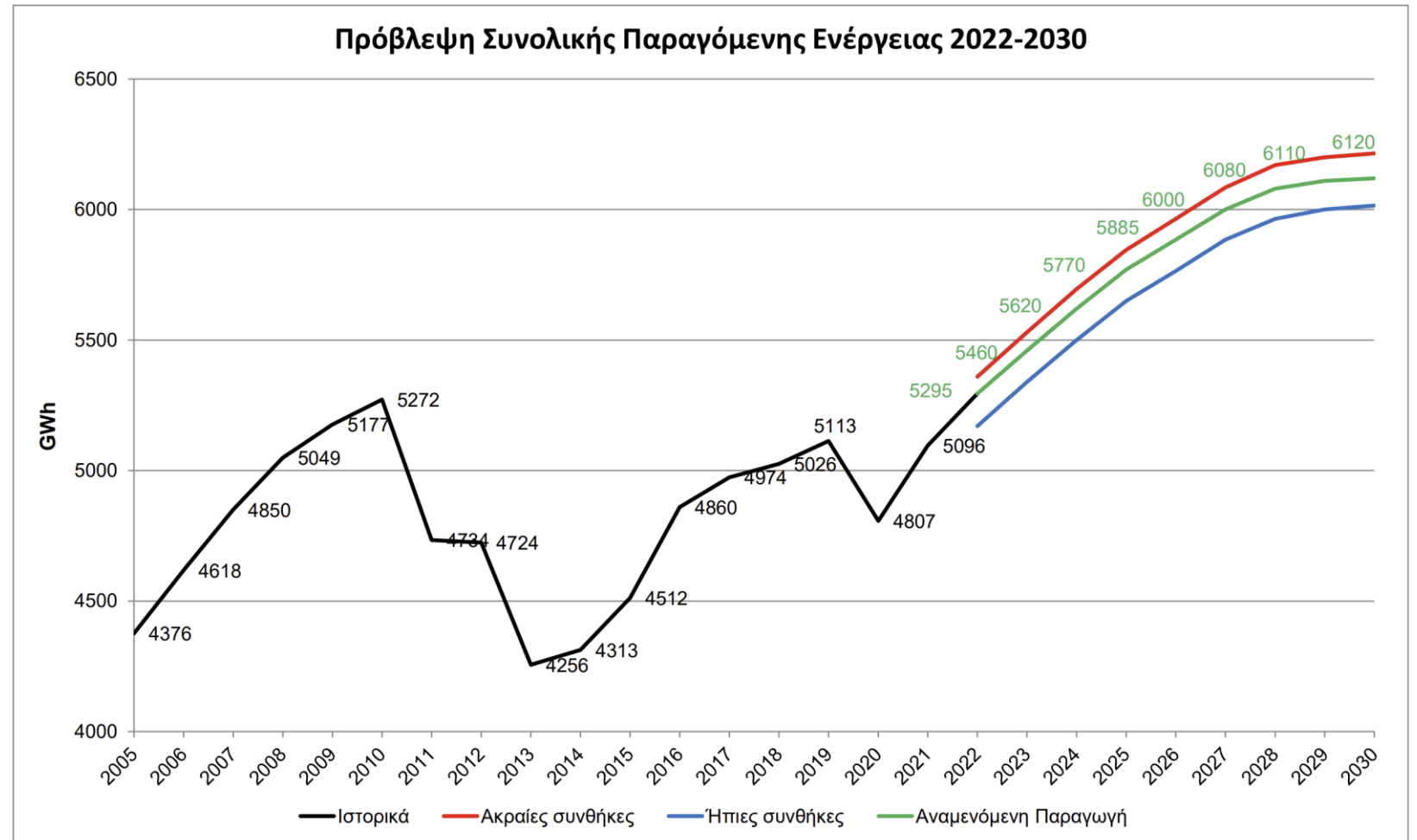
- Currently, EAC is the dominant generator on the island, covering 83% of electricity generation in Cyprus
- The remaining 17% covered by independent Renewable Energy Sources (“RES”) producers (2022)

	Fuel	Maximum Capacity	Thermal Efficiency (2016 data)
<b>Vasilikos Power Station</b>			
3 x 130 MW Steam Units	Heavy Fuel Oil	390 MW	38.08%
1 x 38 MW Open Cycle Gas Turbine	Gas Oil	38 MW	24.33%
2 x 220 MW Combined Cycle Gas Turbine Units	Gas Oil	440 MW	46.0%
		<b>868 MW</b>	<b>36.03%</b>
<b>Dhekelia Power Station</b>			
6 x 60 MW Steam Units	Heavy Fuel Oil	360 MW	29.71%
2 x 50 MW Internal Combustion Units	Light Fuel Oil	100 MW	41,58%
		<b>460 MW</b>	<b>35.65%</b>
<b>Moni Power Station</b>			
4 x 37.5 MW Open Cycle Gas Turbines	Gas Oil	150 MW	24,33%
		<b>150 MW</b>	<b>24,33%</b>
<b>Total EAC installed Capacity</b>		<b>1,478 MW</b>	<b>36.25%</b>

# Economic growth is coupled with rising demand in electricity

## Demand side mechanics and Future Demand

- Cyprus forecasts are expected to reach 1.500 MW maximum annual energy generation by 2027
- EAC is not sufficient to cover the future demand for electricity (today's max active capacity at ~1,200MW)
- RES is currently at 17% of generated capacity



# There is a significant supply shortage and technology gap that requires more private investments

## Supply side mechanics

- Today's technologies have a higher efficiency compared to 48% for EAC's combined cycle machines and 36% overall efficiency
  - Latest Wholesale price posted by EAC at 30c/kWh
- RES currently occupies 17% of the generated capacity, while the target for 2030 is 30% - assuming storage
- Dhekelia Power Station in Larnaca, constructed in 1953, will be decommissioned in 2024, wiping out 360MW of HFO run steam turbines



# New thermal power plants and RES investments will significantly reduce the Carbon footprint of the country

## The environmental limits are getting tougher to meet

- EAC's HFO units have operational restrictions starting in 2020 of 500 hours per year
- The environmental limits as of 2020 are below 50 ppm for NOx and SOx
- High efficiency means that new plants will emit half the CO2 emissions compared to today's average
- CO2 tariffs are extremely high currently
- Natural Gas is a much cleaner fuel than any liquid fuel
- More Gas turbines means more Grid Flexibility therefore greater influx of renewables

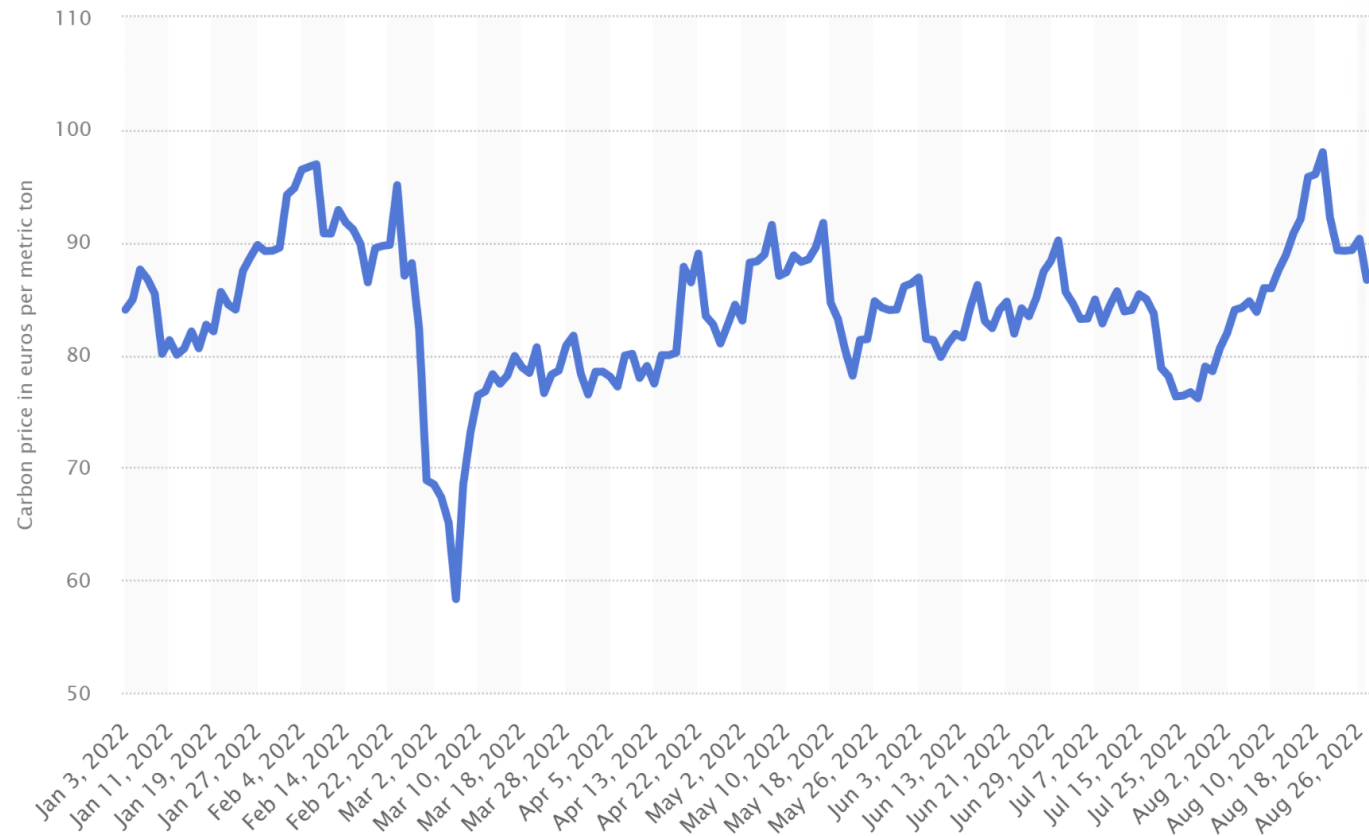


# The Green New Deal is a disaster. The way it's enforced has crippled economies

## Soaring Electricity prices are due to rapid de-carbonization of the EU and lack of investment in Fossil Fuels

- Prices of Gas increased 10-fold, TTF trading more than 200 USD
- EIB/EBRD stopped financing Fossil Fuel projects in 2020
- Created dependency on Russian Gas
- Trillion of Euros of infrastructure needed globally for GAS trading, and RES balancing not ready
- High Energy cost means higher inflation and cost of production
- Less disposable income for households
- **It has escalated to financial crisis and probably food crisis**

### EU carbon tariffs



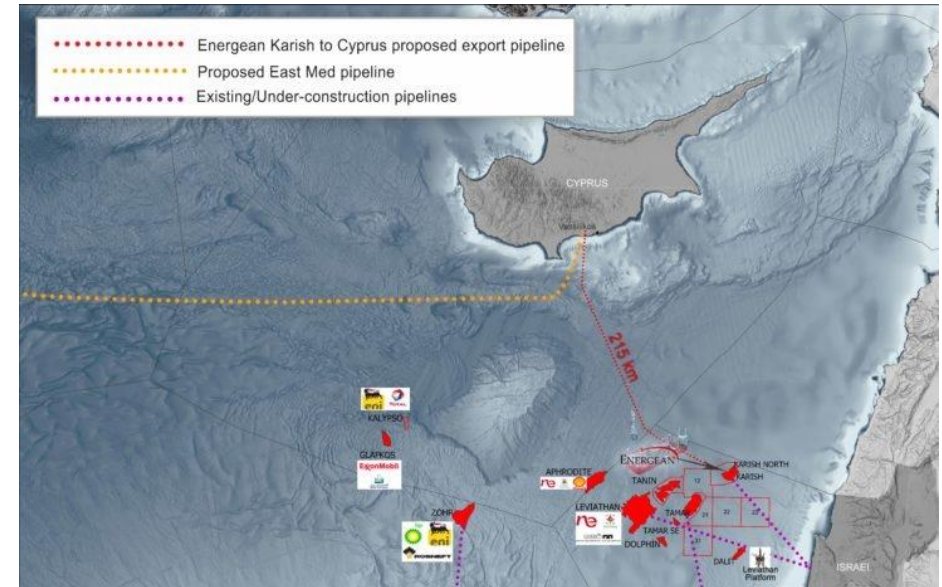
# Regulation needs to be a catalyst for investments into the Energy Sector

The regulatory regime needs to support the private initiatives:

- The Parliament voted in 2021 for the independence of the TSO from EAC and still hasn't been implemented
- CERA gave 600MW PV permits over 10 years to EAC which is a roadblock to the market
- The ministry has proposed a central storage facility owned by EAC, which undermines competition.
- The Market has not been liberalized yet despite the software been ready for a while
  
- **CERA needs to control and protect the liberal market from the incumbent**
- **We welcome any efforts for the liberalization of the market ASAP**



# DEFA needs to expedite the process for the Gas pipeline



- DEFA has still not started the process for the on shore connection from ETYFA to the Power Plants
- Natural Gas is vital to the true liberalization of the electricity market and a competitive economy
- Alternative Natural Gas supply is welcomed:
  - The two solutions are **complementary**
  - We should not be creating another Government monopoly



# There is an endless potential in the market for Electric Cars

## Electric Cars in Cyprus

- 1500 electric cars in Cyprus only, last in EU
- The EU target for transport emissions at 20% reduction from 2008 levels by 2030
- 40% of new cars and vans to be zero- or low-emission vehicles by 2030
- 30% of total CO2 emissions
- **We salute the 38.6 million for electric car incentives, but we need more in Tax breaks**
- **We salute the EV charger subsize scheme**
- **Electric cars will double the consumption of electricity in Cyprus**



EuroAsia interconnector is the largest threat to the domestic market if not properly managed and operated

The Risks of the EuroAsia



Lack of information, transparency and strategy make the project a threat to the Electricity Market

# EuroAsia interconnector is the largest threat to the domestic market if not properly managed and operated

## Common misinformation

Balance the RES generation of Cyprus, with countries that have a much greater urgent need to balance?

Cyprus has shortage of electricity generation so where exactly we will export?

Export RES to countries that have mass scaled PV parks of 200+MW? At what price?

**Cyprus LCOE for PV is 6cents/kWh while Greece 2.5cents/kWh**

Export RES to a Greece which has at times 100% RES generation **Already?**

Export Power from Natural Gas to Israel which has Natural Gas production at 4\$ per Mmbtu?



**EuroAsia interconnector is the largest threat to the domestic market if not properly managed and operated**

## **The Risks of the EuroAsia**

**Therefore the project is going to be an Importer of Electricity**

No Interconnector in the world has more capacity than the needs of the country. Huge risk of Damping and shutting down local generation with National Security Issues

If CERA/Ministry wants to protect local generation they will have to impose an importing limit

# EuroAsia interconnector is the largest threat to the domestic market if not properly managed and operated

## The Risks of the EuroAsia

No Cable in the world has even been placed at this length and depth

The project cost at 2 billion (only to Crete) before current commodity price and interest rates escalations

Who is going to pay for the remaining 1.6 Billion euros?

If there is a trading limit how will the project be feasible? By Socializing the cost to consumers and taxpayers?

EuroAsia interconnector is the largest threat to the domestic market if not properly managed and operated

## The Risks of the EuroAsia

Banks and investors are terrified

Consumers misled

Electricity cost will **Rise**

**Our grid cannot accommodate more renewables. Investments on the grid must be a higher priority than the Interconnector**

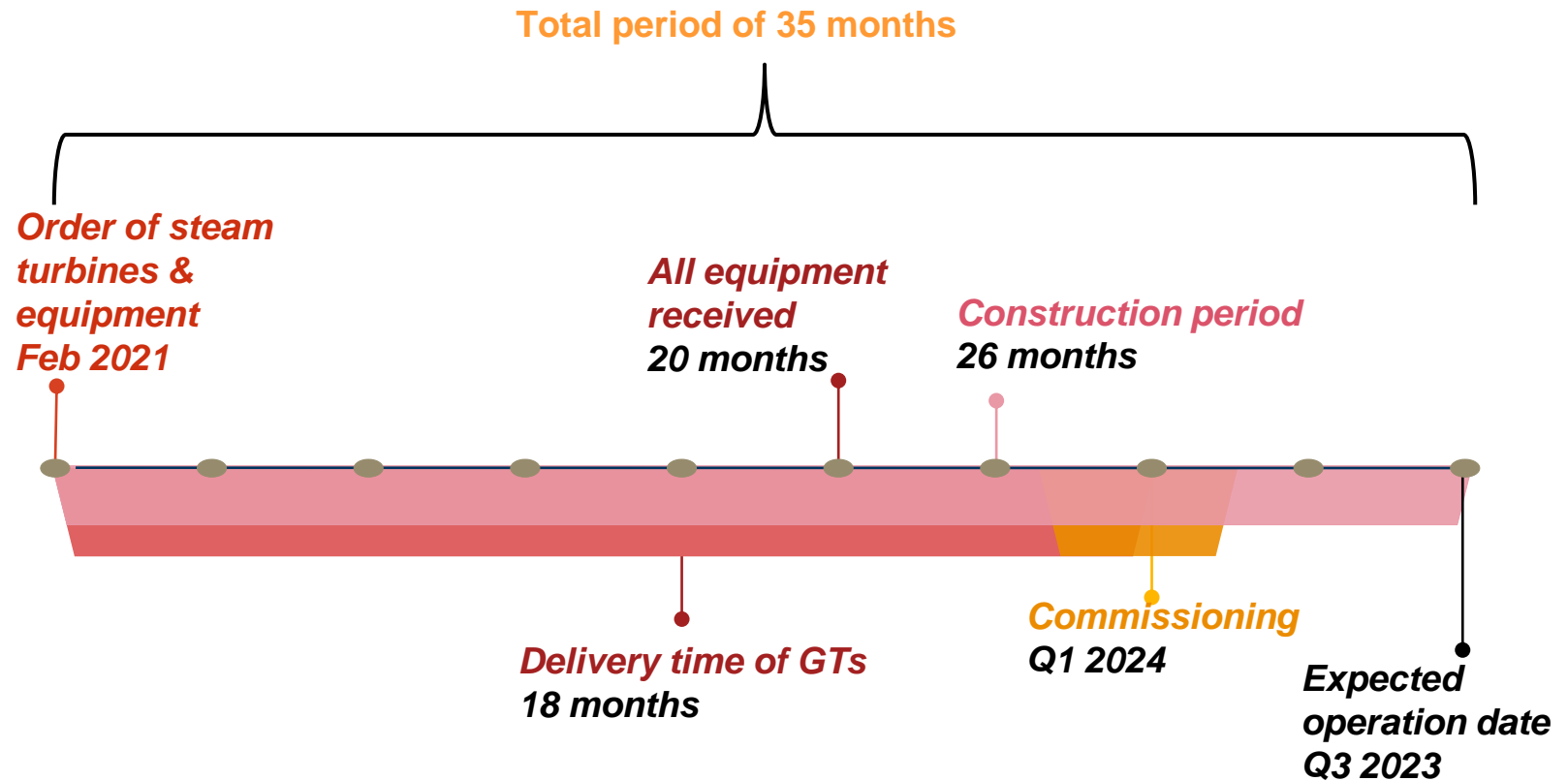


# The CCGT project of 260MW has already started and it's due completion in 2024

## Project information

- The project refers to the construction and operation of the first independent power plant in Cyprus
- It will be the largest private infrastructure project ever in Cyprus, with 200m budget
- It aims to satisfy around one third of the island's power requirements
- The Company has obtained all required licenses for the construction and operation of the power plant
- The project emissions are estimated to be 40% lower than the current average for the conventional generation
- Will de facto liberalize the electricity market in Cyprus

## Project timeline



*This is expected to be in line with CyGas' expected timeline for LNG arrival*





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**Thank you**

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