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2024 Greek Economic Playbook

Deloitte Greece

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Foreword

The preceding year was marked by persistent pressures, driven notably by geopolitical events such as the conflicts in Ukraine and the Middle East, as well as changes in monetary policies. Global stock markets have remarkably thrived, displaying their most robust performance since 2019 and have demonstrated increased resilience and adaptability in responding to geopolitical disruptions. The year concluded with a prevailing sense of optimism resonating among the majority of investors.

In this context, the Greek economy has exhibited remarkable resilience, showcasing one of the European Union's highest growth rates (2.2%) in the first nine months of 2023. Maintaining its top-ranking position among EU member states for the second consecutive year, Greece's economic success is underpinned by consistent improvements across key economic indicators. Since 2019, the Greek economy has consistently outpaced the Eurozone in terms of growth rates, with projections indicating a continued positive trajectory in 2024.

Amidst the landscape of 2023, businesses and households faced significant challenges, primarily stemming from the pervasive impact of inflationary pressures. Although the rate of increase was milder compared to 2022, inflation persisted at elevated levels. Despite the challenges faced, the year 2023 witnessed a substantial rebound in various economic sectors, notably in the field of tourism where recently available information highlights 2023 as an outstanding year for Greek tourism, surpassing the historically high performance of 2019 in terms of both arrivals and receipts. Moreover, the pivotal achievement for the country in the past year was the recovery of the investment-grade status for the Hellenic Republic's credit rating by both S&P and Fitch, marking the end of a 13-year "junk status". This upgrade is primarily attributed on the substantial reduction in Greek sovereign debt burden, the effective implementation of an ongoing reform program, enhancement of fiscal balance, robust economic growth, improved health of bank balance sheets, and the consistent utilization of resources made readily available by the European Union.

The importance of sustainability and the urgency of addressing climate change have gained significant attention, particularly following adverse events such as catastrophic fires and extreme weather incidents that impacted various regions of the country during the summer. The devastating floods in Thessaly had profound social and economic implications.

Moving forward, Greece's mid-term economic outlook looks favorable, characterized by ongoing GDP growth, a diminishing impact of inflationary pressures and the ongoing utilization of the Recovery & Resilience Facility funds, despite the challenges at hand. Nevertheless, it is crucial for the country to continue and intensify its efforts to develop a sustainable economic model that enhances competitiveness and resilience in the changing circumstances. Given the prevalent uncertainty, Greek enterprises must elevate their adaptability and stay vigilant to seize emerging transformative opportunities.

Considering the latter, we are pleased to present the **"2024 Greek Economic Playbook"**. This report centers on the predominant themes that shaped the Greek macroeconomic landscape in 2023, offering insights for selected sectors and focus areas of the Greek economy in 2024.

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Executive Summary

The **"2024 Greek Economic Playbook"** encompasses a comprehensive analysis of key macroeconomic indicators shaping and affecting the Greek economy, alongside in-depth analyses of the energy and shipping sectors. Additionally, it provides brief overviews of the primary data characterizing the banking sector, tourism, construction, healthcare and real estate. Finally, the current edition also focused on three thematic sections (Innovation, Sustainability & Climate Change and Artificial Intelligence) that are quite popular and exert a direct influence on the present and future dynamics of the economic and business landscape.

The key highlights of the report are outlined below:

Economic Landscape

Despite global challenges, the Greek economy has surpassed the Eurozone GDP growth average, driven by strong performance in tourism, private consumption, and investments. Noteworthy milestones such as, regaining of the investment grade, highlight the country's economic resilience and positive outlook. Concurrently, the Greek economy has witnessed a decline in unemployment to 9.6%, a decrease in inflation rates to 4.2%, and substantial progress in reducing debt.

In the banking sector, Greek banks are on a growth trajectory, undergoing restructuring and benefiting from regained investment-grade status, successful bond issuances, and solid financial balance sheets. This has attracted foreign investors, stimulating the stock market and creating new investment opportunities. Despite M&A deals lagging behind last year's figures in both value and quantity, Greek companies showcase an outward focus by actively participating in significant global deals.

Focus Industries

Greece, renowned for its status as a maritime hub, faces ongoing challenges in its shipping industry, marked by disruptions in seafarer recruitment during the COVID-19 pandemic and supply chain issues stemming from geopolitical events. Despite these obstacles, the country's distinguished shipowners continue to oversee an extensive merchant fleet. In the tourism sector, Greece has adeptly capitalized on its competitive advantages, demonstrating resilience by adapting to evolving tourist behaviors. Notably, in 2023, the nation achieved commendable performance in tourism, showcasing its ability to navigate the changing landscape and maintain a robust position in two major GDP-contributing sectors.

The energy sector remains crucial. In 2023, decarbonization has emerged as an urgent priority, highlighted by Greece's release of the new National Energy & Climate Plan (NECP), which sets ambitious targets.

The construction industry is on the rise, thanks to augmented financial support from EU and national funds, coupled with robust public-private collaboration. Concurrently, the real estate sector is seeing promising prospects, including environmentally sustainable developments and a substantial pipeline of infrastructure projects nationwide. This dual momentum signifies a period of growth and opportunity in both construction and real estate, marked by increased investment and a commitment to sustainability.

Finally, despite Greece's effective response to the pandemic, its healthcare expenditure levels remain lower than the EU average.

Disruptive Trends

Greek businesses recognize the crucial role of innovation in securing a sustainable competitive advantage. The rising frequency of extreme weather events and their economic impact has heightened awareness of the urgent need for sustainability in addressing climate change. Globally, the imminent economic transformation will dramatically reshape sectors in Greece, boosting efficiency and productivity through assertive integration of Generative AI technologies.

Economic Landscape

Amidst escalating conflicts in the Middle East and global economic uncertainties, nearly two years after Russia's invasion of Ukraine, the world grapples with decelerated growth, particularly impacting advanced economies. Central banks are adjusting policies to address inflation, anticipating changes in 2024.

In this challenging scenario, the Greek economy continues to outpace Eurozone GDP growth, propelled by tourism, private consumption, and investments. Achieving milestones such as regaining investment grade, Greece has witnessed a decline in unemployment and inflation rates, along with progress in debt reduction.

The Greek banking sector has notably improved, enhancing financial resilience through successful placements and bond issuances. Furthermore, the restored investment-grade status strengthens the domestic banking system. Looking ahead, the sector focuses on customer understanding through strategic partnerships and transformative technologies like Generative AI.

Globally, M&A activity faces challenges from rising interest rates, geopolitical instability, and recession concerns, leading to a downturn in deal numbers and size. In the Greek ecosystem, deal metrics fell short of last year, but companies showcased global engagement. Anticipated factors like corporate transformations, ESG-related transactions and digitization efforts, are expected to drive future M&A activity as businesses align with evolving trends.

Macroeconomics

Ongoing uncertainty, forces economies to adapt swiftly to new challenges

Global

After a challenging 2022, where the world struggled to bounce back from the Covid-19 pandemic, to deal with economic challenges, and navigate through energy crises and high inflation, 2023 began with countries striving to regain stability. However, a new crisis in the Middle East emerged, bringing additional concerns and slowing down economic growth.

In the context of inflation there's been a shift from a landscape, mainly influenced by energy prices, to one marked by enduring core inflation challenges. The resolute commitment of central banks to uphold elevated interest rates has notably affected the cost of capital for businesses and financial obligations for consumers. While a soft landing is the baseline scenario, growth persists at a sluggish pace among countries.

Europe

Following a robust post-pandemic recovery in 2021 and 2022, the economic growth of the Euro Area has slowed down, lacking a clear driver. The deceleration is attributed to weaker-than-projected consumption and exports, along with reduced government support and decreased subsidies to private investment.

Looking ahead, economic growth is anticipated to strengthen the coming years, despite global tensions and ongoing monetary tightening. The stabilization of households' purchasing power in late 2023, along with an anticipated pickup in consumption due to improved disposable income, coupled with the resilience of the labor market, fuel this positive shift.

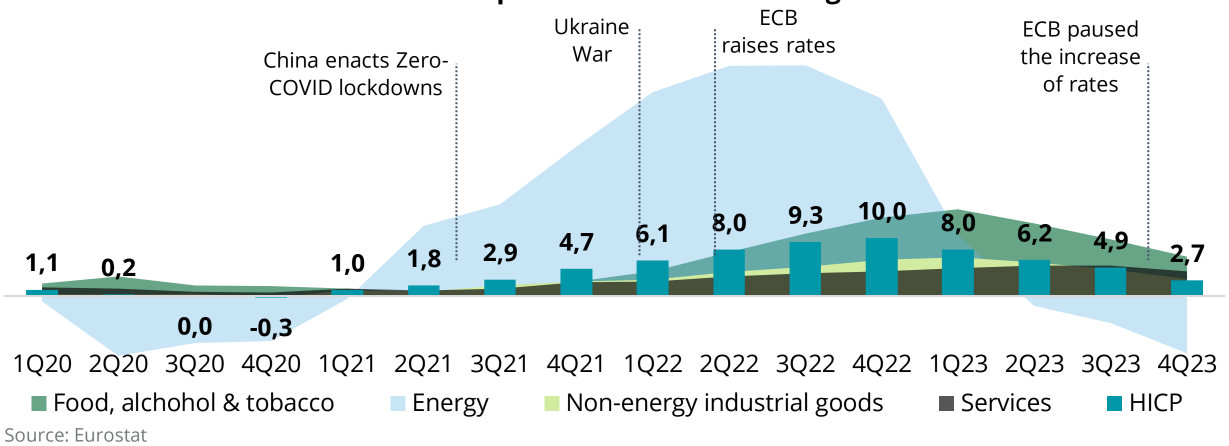
Projections* (% change)

	World 2023E	World 2024F	US 2023E	US 2024F	Euro Area 2023E	Euro Area 2024F
GDP	2.9	2.8	2.5	1.5	0.5	1.7
Inflation	6.8	5.4	4.1	2.7	5.5	2.9

* World & US: estimates based on average from IMF, EIU & World Bank

* Euro Area: estimates based on average from IMF, EIU, World Bank, ECB, OECD,EC

Harmonized Index of Consumer Prices (HICP) in Euro Area and its components as a % YoY change

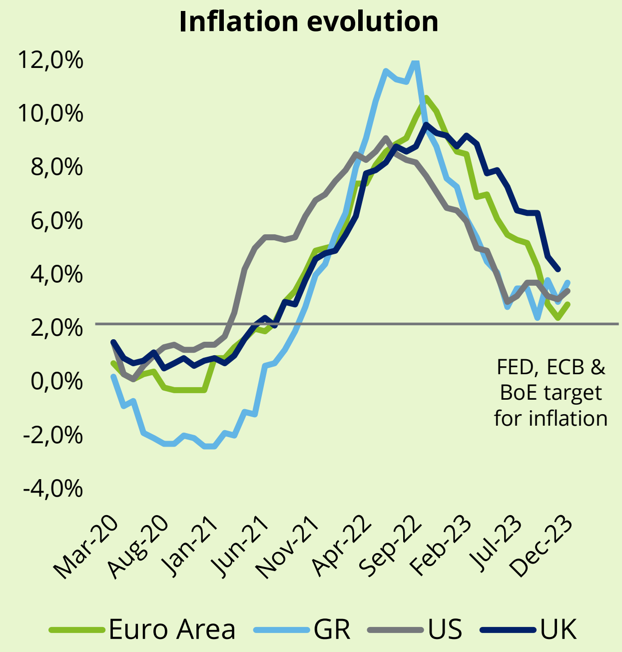


Source: Eurostat

In the Euro area, inflation has exhibited volatility but is expected to gradually decrease in the upcoming months. This trend is influenced by fluctuating **energy prices, supply constraints**, and adjustments in **monetary policy**. At the same time, price pressures are still strong, reflecting also the growing importance of rising wages.

Macroeconomics

Inflation drops but still hovers above 2%, while central banks are expected to cut rates in 2024



Source: Refinitiv

Inflation

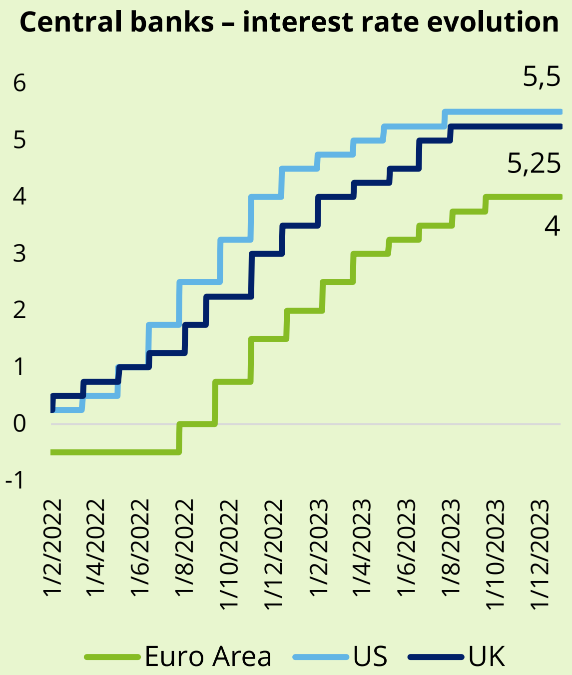
In 2022, inflation soared to multi-decade highs on a global scale, peaking during the fall. Although headline inflation has since declined, attributed to improved supply chain conditions and a fall in energy prices to pre-crisis levels, the inflation outlook remains notably uncertain.

Nevertheless, **core inflation** remains elevated, with the possibility of these pressures to persist longer than currently anticipated in financial markets, and a projected Euro Area rate of **3.1%** for 2024. This exposes the global economy to the risk of inflationary disruptions, especially arising from potential spikes in food and energy costs.

Interest Rates

In 2023, central banks embraced a hawkish approach to interest rate policies, albeit with a slower pace of rate hikes. This adjustment was influenced by decreasing inflation rates and financial turbulence, stemming from banking developments, particularly in the US and Switzerland. Presently, central banks and policy makers are facing multifaceted challenges in shaping their monetary policies and alleviating the financial stress in their economies.

Following nearly two years of aggressive interest rate increases, the world's major central banks are currently taking a pause to reassess their forthcoming strategies. Notably, none of these central banks have reduced their rates and intend to maintain them at relatively high levels to counteract inflation, with the aim of returning to the 2% target in the medium term by mid-2024.



Sources: ECB, Bank of England, US FED

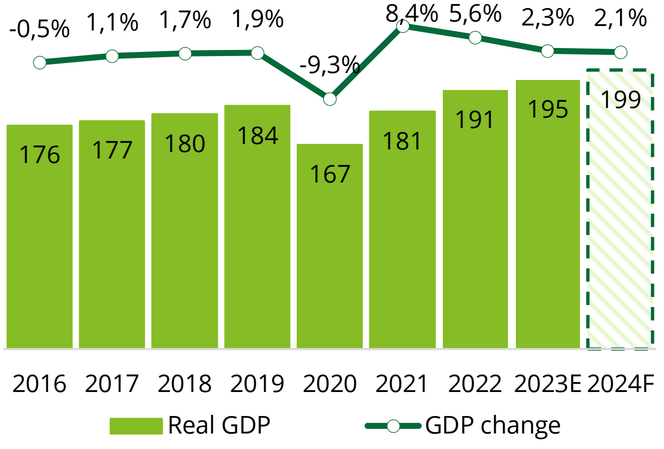
This caution is especially justified in light of a sequence of unfavorable shocks, such as the escalation of geopolitical tensions and the continued turmoil of the property sector in China, which could negatively impact the economic outlook and financial stability on a global scale.

Macroeconomics

Despite headwinds, the economy seems poised to enter a virtuous circle of growth and expansion

Greece

Real GDP (€ bn.) and GDP YoY (%) evolution



Source: ELSTAT

F = Estimates based on average from ECB, OECD,EC,EBRD,EIU

In 2023, the economy sustained a **positive momentum** despite global headwinds and domestic natural disasters, showcasing **resilience** that secured its **top position** for the second consecutive year in improving performance across key economic indicators, according to The Economist survey -"*Which economy did best in 2023?*". **Domestic and foreign investments**, **tourism**, and **private consumption** were the main contributors to the GDP growth (**2.3%**), positively affecting the **unemployment**. Additionally, **inflation** has been declining, but the persisting upward pressures in **food prices** have been affecting people's **income** and increasing **cost of living**.

Additionally, in 2023, Greece confronted major natural disasters, affecting both people's lives and threatening the country's fiscal goals. However, the impact on the overall country's growth track is estimated to be limited.

Drivers of Growth

Tourism

Tourism achieved record-breaking numbers, with revenue surpassing pre-pandemic levels.

Private Consumption

Private consumption remained one of the primary drivers of growth, despite lower growth rates. This trend was supported by an uptick in real disposable household income, attributed to rises in nominal wage employment and a decline in inflation.

Investments

- Gross Fixed Capital Formation increased by 8.3%*, continuing the upward trend, driven by a substantial increase in "Residential" investments, c.40%* YoY.
- FDI reached c.€5 bn.*, primarily boosted by the real estate and manufacturing sectors.
- Capitalization of RRF resources boosted investment activity, albeit at a slower pace than expected, due to delays caused by elections.

Source: Budgetary Plans 2024, Bank of Greece
"*" = Estimations

Inflation

Inflation declined to **4.2%**, primarily attributed to decreasing **energy prices** and effective **monetary policy** measures. However, it is anticipated to hover just above 2% by 2025. Contrarily, there is an opposing trend in **food prices** and **core inflation**, continuing to exert pressure on business operating costs and household disposable income. Looking ahead, anticipated wage growth in the long term is expected to contribute to upward price movements.

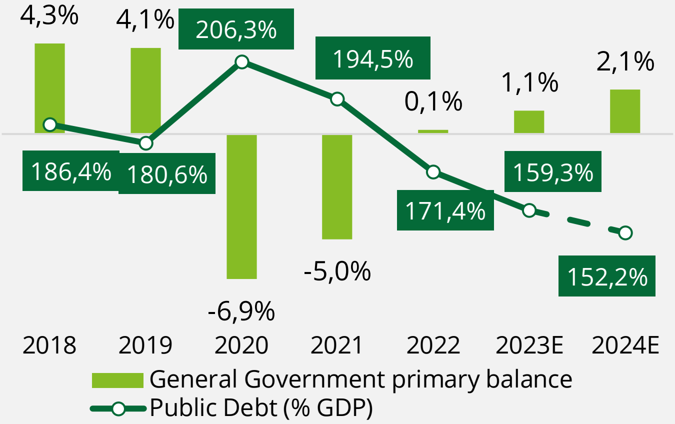
Unemployment

Unemployment has sustained its downward trend, reaching its **lowest point** in over 13 years at **9.6%**. Further decrease is anticipated as long as the economy remains on a growth track and continues to attract investments. Nevertheless, the labor market shows signs of shortages for skilled workforce, especially in critical sectors such as construction, agriculture, service provision and retail.

Macroeconomics

The Greek economy regains its investment grade, coupled by improvements in public debt

Primary balance and Public Debt evolution as % of GDP



Source: Ministry of Finance; Budgetary Plans 2024, "E" = Estimates

The primary balance of 2023 is estimated to reach a surplus of **1.1%** (as % of GDP), marking an upturn from 2022. This growth is driven by heightened tax, increased economic activity and electronic transactions, coupled with elevated wages and pensions. At the same time, the expected reduction of debt to **159.3%** is primarily attributed to the "**snowball effect**" and secondarily to the **primary surplus**. In 2024, an anticipated further increase of the primary surplus to **2.1%** of GDP is on the horizon, accompanied by a further decrease in public debt.

After more than a decade, **Greece regained** the long-awaited **investment grade**, marking a pivotal turning point for its economy, as it regains its investment-grade status. Greek economy's positive performance has been recognized by the rating agencies. In 2023, **5 credit agencies** have upgraded Greece, firstly the R&I, Scope and DBRS and then the reputable Standard & Poor's in October and Fitch in December.

	2009	....	2019	2020	2021	2022	Dec 2023
Moody's	A2		B1	Ba3	Ba3	Ba3	Ba1
Standard & Poor's	A- / BBB+		BB-	BB-	BB	BB+	BBB-
FitchRatings	BBB+		BB-	BB	BB	BB	BBB-

Sources: Moody's, Standard & Poor's, Fitch

Investment Grade Benefits

- Lower Borrowing Costs
- Attracting Foreign Investments
- Better terms in Capital Markets
- Improved Reputation & Credit Profile

The country's resilience and commitment to reforms, coupled with the achievement of key budgetary objectives, restored the trust in capital markets and international investors. **However, regaining the investment-grade rating is only the first milestone; the real challenge lies in maintaining it and capitalize on the arising opportunities.**

Primary Objectives and Subsequent Measures

Debt Management:
- Prioritize and expedite the reduction of national debt
- Utilize debt repayment schedule advantage until 2032

Financial Sector Strengthening:
- Continue the restructuring and stabilization of banks
- Strengthen portfolios of financial institutions by reducing NPLs and enhancing profitability

Fiscal Discipline:
- Maintain a positive primary balance
- Keep the fiscal deficit below 3% of GDP

Efficient Use of EU Funds:
- Efficiently utilize funds from the Recovery and Resilience Facility (RRF) and other EU sources
- Avoid delays and errors in utilizing these resources

Banking

Thriving dynamics in Greece's banking sector

The Greek banking sector is undergoing **dynamic growth** and **restructuring**, driven by the **restoration** of the country's **investment-grade status**, successful **bond issuances**, and the maintenance of **healthy balance sheets** by financial institutions. This momentum has attracted reputable **foreign investors**, enhanced the **stock market**, and created new **investment opportunities**, marking a positive trajectory for the sector.

The Greek Banking System Today

Bank Lending

€8,765 mn. *(2015)*
€17,080 mn. *(2023*)* **+95%**
* as of Nov 2023

Bank Deposits

€157.8 bn. *(2015)*
€223.5 bn. *(2023*)* **+42%**
*as of Nov 2023

Source: Hellenic Bank Association, Bank of Greece

Digital Channels

3.8 mn. internet banking users

5.1 mn. mobile banking users

Over 90% of payment transactions via internet and mobile & almost 40% of total money transfers via mobile banking applications *(2022)*

Branches

4,005 *(2010)*
1,470 *(2022)* **-63%**

Personnel

63,408 *(2010)*
29,177 *(2022)* **-54%**

Highlights of 2023

The **Hellenic Financial Stability Fund** (**HFSF**) has successfully **divested** from the two core banks (**Eurobank** & **Alpha Bank**) and is anticipated to complete its exit from **NBG** and **Piraeus Bank** by early 2024.

The **9%** stake sale in **Alpha Bank** to **Unicredit** is the first major investment in a Greek bank since 2006. Furthermore, the successful placement of a **22%** stake in **NBG attracted major funds**, signaling the sector's return to the international investment spotlight.

The **third phase of Hercules** program aimed at fortifying the banking system by reducing NPLs and strengthening their balance sheets. The **NPLs** have decreased and stabilized at **8.6%**, surpassing Europe's 1.8% average, with a target of a further reduction to around **5%** by **2025**. Additionally, the development of a **fifth banking pillar** through the imminent merger between **Attica Bank** and **Pancreta Bank**, is expected to further boost sector competitiveness.

Athens stock exchange soared, recording a **+39%** in 2023, following the upward trend of the economy and investor activity, leading the way to **new IPOs**. In 2023, **Optima Bank** concluded the **first IPO** of a Greek bank in the last 17 years.

What's coming next...

The rapid advancement of **new technologies**, coupled with **key trends** in financial services, is reshaping the **operations** and **customer approach** of banks.

Shifting Competitive Dynamics

- Digital banks attract more customer deposits (e.g. Revolut flexible accounts).
- Digital wallets, account-to-account payments, and BNPL schemes are on the rise.
- EU intends to create a unified instant payments solution.

Industry Convergence

Collaboration between banks and fin-techs to enhance customer acquisition, experience and retention (e.g. core banks sell acquiring services).

Generative AI

- Deliver hyper-scale customization.
- Improvement of existing AI applications.
- Use digital data trails to improve risk and data management.

Source: Deloitte Resources

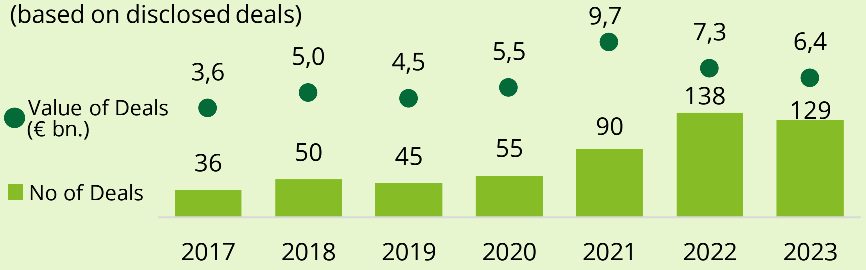
M&A Deals

Overview of the M&A activity in 2023

After reaching its zenith in Q4 2021, the **downturn** in global M&A activity displays **persistent momentum**, intensifying throughout 2023. The financial landscape, marked by a **fusion of recession concerns and inflation**, along with escalated **financing costs**, has led investors to adopt a **risk-averse stance**, opting to await more favorable conditions for megadeals while currently engaging in **smaller transactions**.

Evolution of M&A Transactions in Greece

(based on disclosed deals)



Global (2023)

-16% deals vs 2022

-23% deals value vs 2022

Source: Mergermarket

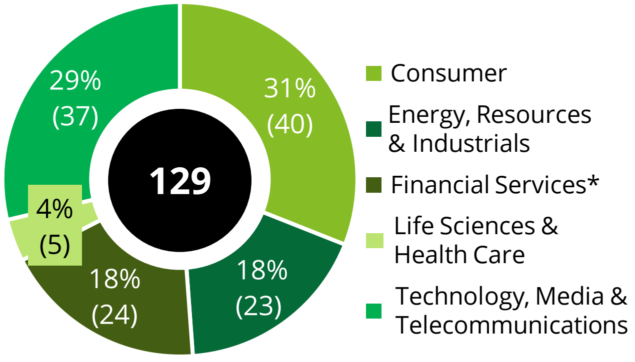
Greece (2023)

-7% deals vs 2022

-12% deals value vs 2022

Source: Refinitiv, Mergermarket, Deloitte Analysis 2021: Egnatia Odos transaction (€2.8bn); 2023: Attiki Odos transaction (€3.3bn)

Deals in Greece, per industry, *2023*



Source: Deloitte Analysis

*Including NPEs

In 2023, the aggregate value of **disclosed deals**, comprising 60 out of a total of 129, amounted to **€6.4 bn**. Greece mirrors the global trend, albeit experiencing a **marginal decline** in both transaction volume and value, as per disclosed data. Despite this overall reduction, **noteworthy transactions** have exerted a substantial impact on the domestic market, with major companies pursuing acquisitions to broaden their portfolios, while **privatizations** and **concessions** have enhanced the domestic M&A environment. Additionally, the prevailing trend of **consolidation** remains evident across diverse sectors.

Consumer

- Total Value: **€674 mn.** (14 deals with disclosed value).
- **10 deals** in the **Hospitality Sector** → Greek tourism attracts institutional investors recognizing the dynamic and the opportunities of this sector.
- The acquisition of **Kotsovolos** by **PPC** stands out as a **flagship** deal set to reshape the retail sector.

Source: Deloitte Analysis

Energy, Resources & Industrials

- Total Value: ****4,206 mn.** (12 deals with disclosed value).
- In addition to domestic deals, **11 transactions** are associated with **acquisitions outside** Greece, primarily focusing in the power sector.
- Energy conglomerates are experiencing transformative shifts, acquiring enterprises from diverse sectors, in order to broaden their business activities.

**Including Attiki Odos transaction

Technology, Media & Telecommunications

- Total Value: **€258 mn.** (20 deals with disclosed value).
- Greece has decisively positioned itself as a technology hub, attracting investments from major tech companies into the domestic tech sector.
- Tech giants have increasingly shown interest in Greek startups, contributing to the strengthening of the local ecosystem.

M&A Deals
Navigating the new norms of the M&A strategy

Greek companies have demonstrated a notable outward focus through substantial acquisitions abroad, underscoring their capacity to compete in the international marketplace. Particularly, companies in the energy sector have expanded their portfolio of renewable energy sources (RES) by acquiring facilities in neighboring regions like the Balkans and Cyprus.

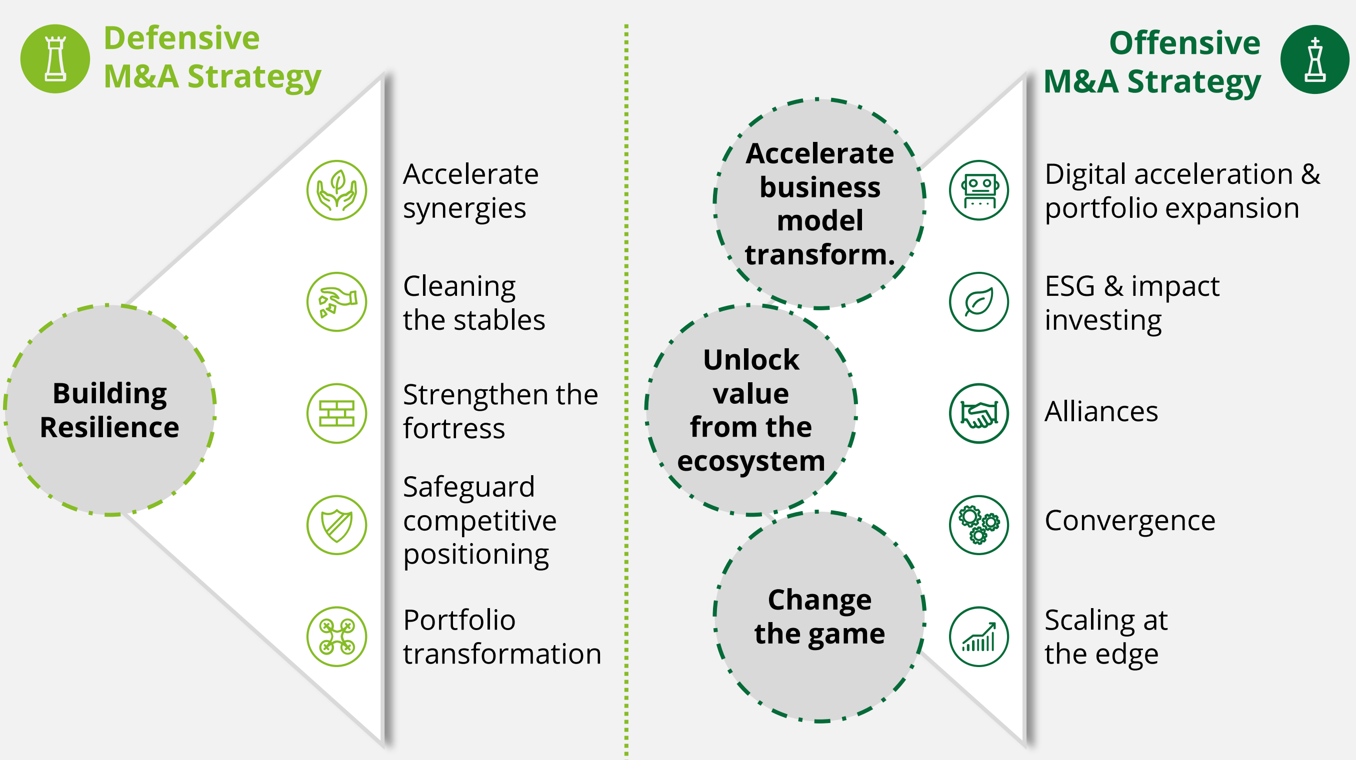
Top 3 Greek M&A deals in foreign country, *2023*

A/A	Target	Buyer	Sector	Value (€ mn.)
1	Enel Romania	PPC	Power and Energy	1,260
2	Westbridge Renewable Energy (1,4 GW 5 Solar Parks)	Mytilineos	Power and Energy	~1,160
3	Hellenic Bank	Eurobank	Banking	253

Source: Deloitte Analysis

Navigating in the uncertainty

Companies reimage markets and adapt to the diverse sector evolution. Addressing global themes such as **digitization**, **climate change**, and **technology shifts** becomes imperative in shaping M&A strategies. These efforts should align with growth options encompassing **financial considerations**, **operating agility**, **competitive positioning**, **capital return horizon**, and the **ability to enter new markets**, ensuring a holistic approach to **long-term value creation.**



Source: Deloitte Resources

Focus Industries

Decarbonization has emerged as an urgent priority, highlighted by Greece's release of the new National Energy & Climate Plan (NECP) in 2023, which sets ambitious targets. The plan foresees a significant increase in renewable energy capacity alongside the emergence of new technologies in the Greek energy landscape.

In the meanwhile, Greece leverages its strategic maritime position and extensive coastline to solidify its role in the global shipping and ports marketplace, with Greek shipowners managing one of the world's largest merchant fleets.

Moving forward, Greece has undeniably solidified its position as a sought-after and top global tourism destination, with the sector being a vital contributor of the Greek economy.

Simultaneously, the Greek real estate market, is on an upward trajectory, with modern developments aligning with ESG criteria and a robust pipeline of infrastructure projects.

Moreover, the construction industry experiences a resurgence, driven by increased financial support, major infrastructural projects underway and effective collaboration between the public and private sectors.

On the other hand, even though Greece has effectively tackled the pandemic, its healthcare sector still faces the challenge of dealing with health expenditure levels that remain lower than the EU average.

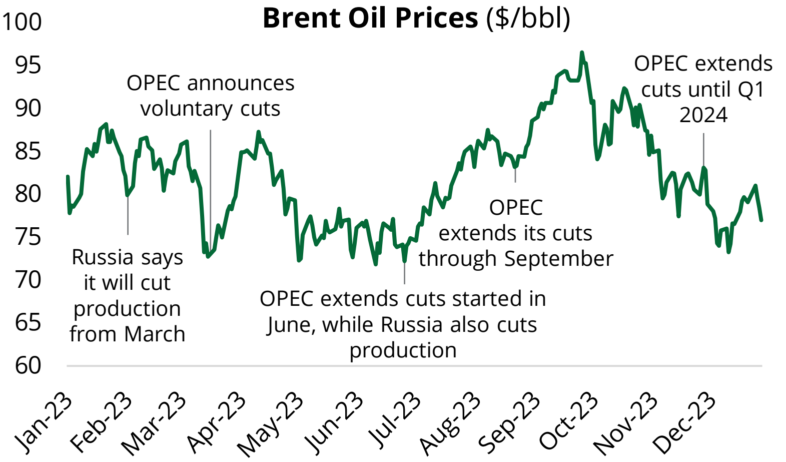
Energy

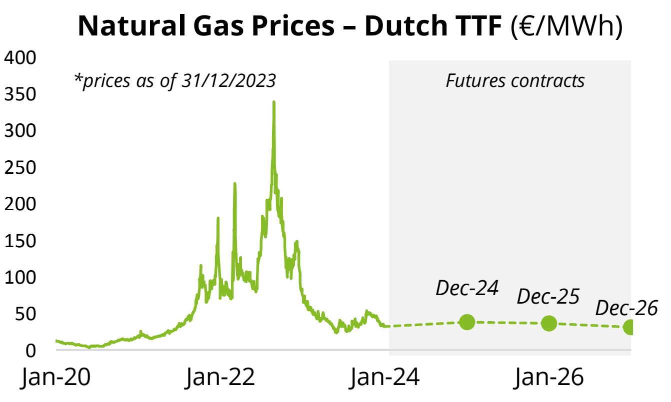
Prices have declined but continue to linger above pre-crisis levels

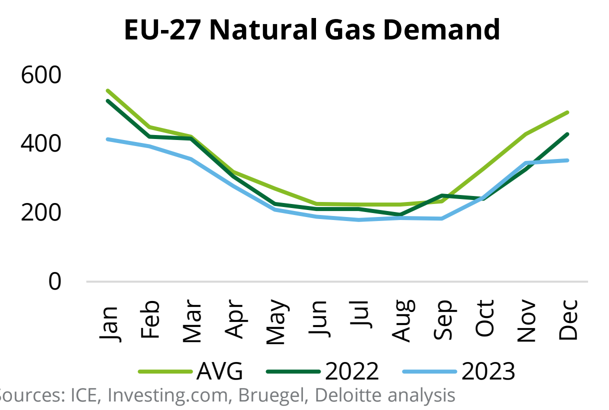
After a year (2022) of severe volatility and unprecedented energy prices, the prices of natural gas and electricity have slumped. For the largest part of 2023, prices have been declining, reaching almost the pre-energy crisis levels for short periods. Currently, prices have stabilized at levels higher than those observed before the energy crisis and forecasts indicate that they will remain elevated for the upcoming period. The susceptibility of energy commodities to geopolitical tensions has been underscored by the recent events; firstly the invasion of Ukraine and more recently, the conflict in Gaza. Potential escalation on those forefronts could trigger a new phase of volatility and subsequent price increases.

Oil

The oil market has been severely **disrupted by the production cuts** from OPEC members as well as Russia, turning the **market balance into a deficit.** Despite a weaker economic outlook, demand has been relatively resilient. However, the projected weaker economic **conditions for 2024 are expected to drive demand even lower**, potentially exerting pressure on market prices at lower levels, irrespective of the reduced production.







Sources: ICE, Investing.com, Bruegel, Deloitte analysis

Natural Gas

Prices in Europe have dropped from 132€/MWh in 2022 to 41 €/MWh in 2023, influenced by several factors. Primarily, Europe **successfully replenished its storage early in the year**, benefiting from **increased LNG flows**, which rose by 2.8% compared to 2022. Concurrently, market dynamics were shaped by **diminished demand** (approximately -11% YoY) across both the industrial and consumer sectors, stemming from elevated pricing and milder weather conditions throughout the year. Besides these fundamentals**, the market was notably volatile** in 2023, experiencing sharp fluctuations in prices. These fluctuations were often linked to overreactions to news updates that ultimately had limited impact on the market's balance.

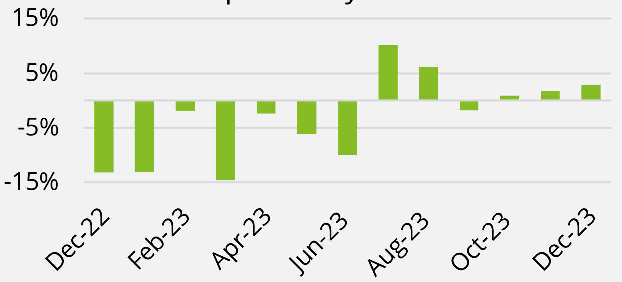
Overall, prices have been declining throughout 2023 at as of the date of this report are trading around 30€/MWh, with futures contracts indicating that **these prices will be sustained for the remainder of 2024.**

Energy

Greece's electricity prices have declined in light of lower demand and higher renewable energy penetration

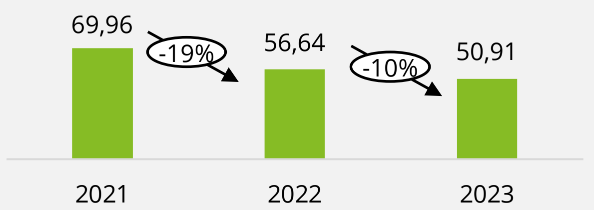
Consumption

Variance in total electricity demand compared to the same month of the previous year



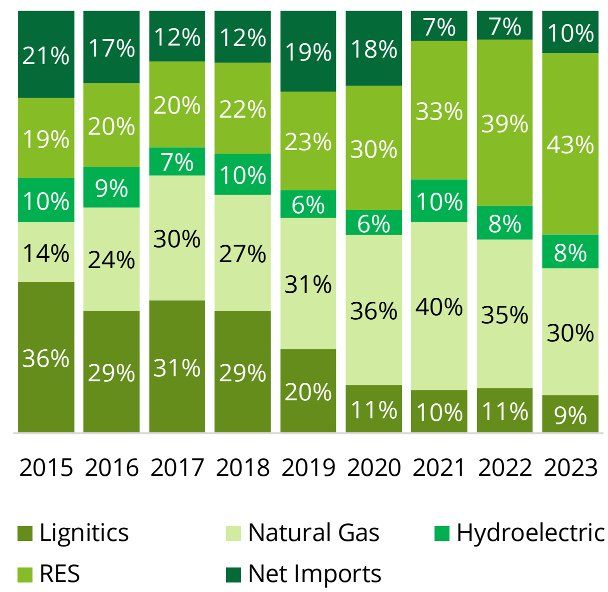
Demand in the country decreased by 2.4% in 2023 compared to the previous year, influenced by milder weather conditions. Demand is lower by c.5% compared to the same period of 2019.

Natural Gas Consumption (TWh)



Demand for natural gas in Greece is primarily directed to power plants fueled by it. With the decline in electricity demand and the reduction in peak usage, the demand for natural gas has significantly dropped. In 2023, it decreased by approximately 27% compared to 2021.

Electricity Mix



Renewables constituted the primary source of electricity in 2023, accounting for **43% of the electricity mix.** This significant shift can be attributed to a combination of reduced energy consumption and a notable increase in installed renewable capacity. Concurrently, the utilization of lignite decreased to single-digit figures, and natural gas usage was formed at c.30%, reflecting the evolving dynamics of the energy landscape. The high penetration of RES is underscored by Greece's leading position in the EU for solar electricity generation share (%) and its 7th rank for wind.

Prices in Greece de-escalated by c. 57% YoY, falling from 279€/MWh in 2022, to 119€/MWh in 2023, **but remain higher than pre-energy crisis levels**. Reduced demand and exerted downward pressure on commodity prices, lead to a reduction in the Day-Ahead-Market (DAM) price.

As c. 40% of the electricity mix relies on fossil fuels (lignite, natural gas), the electricity prices are susceptible to fluctuations in commodity prices. In contrast, the costs associated with renewables are more predictable and stable, providing a degree of resilience against the volatility inherent in fossil fuel markets.

Greece's average Day-Ahead-Market Price (€/MWh)

Source: Investing.com, ICE, EMBER, DESFA,IPTO, Deloitte analysis

Energy

Ambitious goals for decarbonization; renewable energy capacity is set to surge while focusing in new technologies

In October 2023, the Greek Government submitted the revised **National Energy & Climate Plan** (NECP) to the European Commission for review.

Year	NECP Targets for RES Share in electricity generation (not including imports)	Solar	Wind	Hydro	Storage	Natural Gas
		Installed capacity (GW)				
2021	41.9%	4.3	4.7	3.1	0.7	5.3
			Onshore 7.6, Offshore 1.9		Batteries 3.1, Pumped Hydro 2.2	
2030	81.5%	13.4	9.5	3.8	5.3	7.7
			Onshore 11.9, Offshore 17.3		Batteries 22.6, Pumped Hydro 2.2	
2050	98.3%	40.3	29.2	3.9	24.8	4.2

To realize these objectives, a substantial mobilization of capital is imperative. Within this framework, investment prospects emerge for both domestic and international companies and investors. The planned increase in solar and wind installed capacity positions them at the core of the future energy landscape. While technologies like batteries, offshore wind, and hydrogen are presently nascent or limited in scale in Greece, they constitute essential components of the country's decarbonization strategy. Despite the current elevated developmental costs, particularly for hydrogen, these technologies are poised to gain cost-competitiveness and attractiveness in terms of return on investment as they mature. At present, the facilitation of their deployment hinges significantly on support schemes.

Emerging technologies

Carbon Capture & Storage (CCS & CCUS)

CO_2 NEUTRAL

Major industrial companies and refineries in the country are investing in CCUS pilot projects to reduce their carbon footprint. "Prinos" a depleted oil field, will be transformed into a CCS – the project has been included in EU's PCI list.

Hydrogen

H_2

Hydrogen is expected to play a vital role in decarbonizing both transportation and the industrial sector. Though green hydrogen production is still not cost competitive, some companies have announced pilot projects. Hydrogen is also a vital part on EU's agenda.

Biogases

Biogases are still limited in the country. However, there is a lot of upside as they can be used in transportation, heating and power sectors.

Source: Ministry of Climate & Environment, Deloitte Analysis

Energy

Country's energy sector is undergoing a major shift, with an exporting-oriented focus

Key events that pave the way for the energy scene of tomorrow and highlight the country's attractiveness with regard to investments as well as its enhanced position in the wider area.

Grid and Interconnections

To accommodate the escalating deployment of RES, substantial financial commitments are imperative for the enhancement and expansion of grid infrastructure. At the same time, interconnectors are also on the way.

- **Domestic**: Connection of the islands with the mainland – including the Cyclades, Ionian island and Crete.
- **Neighboring countries**: New lines or upgrades are underway to increase capacity.

Independent Power Transmission Operator's (IPTO) comprehensive 10-year plan advocates for the mobilization of approximately €5.7 bn. in investments, with a strategic emphasis on facilitating energy exports.

International: During the COP28, it was announced that the "**Great Sea Interconnector**", which connects Greece-Cyprus-Israel is entering the construction phase. Another, significant interconnector, the "**GREGY**" – connecting Greece with Egypt is also in the developmental stages.

Natural Gas

1.7 GW of natural gas fired plants (CCGTs) are under construction, while a **FSRU** is expected to **commence operations within Q1 2024**. IGB pipeline (Greece-Bulgaria) is set to increase its capacity, while a new pipeline with North Macedonia is under development.

Offshore Wind

After years of delay, the **first pilot licenses have been granted** for the development of offshore wind parks. Though their development costs are still high, they can **generate more energy** than solar and onshore wind plants. The Ministry of Energy has reserved c. **2GW of electrical grid capacity to support** their development.

Batteries

Within 2023, **the first auctions for tariffs and investment support** have been launched, referring to a total capacity of **1GW.** Battery Energy Storage Systems can offer grid stability and support the smooth penetration of RES in the system. When "collocated" with a RES plant, they can charge with clean energy and release it in the system in times of limited production from RES.

Expansion in the area

Major Greek energy companies are **expanding in the wider Balkan area**. Within 2023, big deals were announced, including the **acquisition of RES** plants and retail operations mostly in Romania. Besides acquisition there has been activity in **investing in power generating units** (natural gas, hydro) in the neighboring countries.

Greece's energy sector is undergoing a substantial transformation, marked by a decisive shift away from fossil fuels. The nation's unwavering commitment to this transition is underscored by the strategic initiatives implemented throughout 2023, with a particular emphasis on fostering export-oriented endeavors. As a result of these initiatives, Greece, along with its corporate entities, is anticipated to assume a heightened and influential role in shaping the evolving energy landscape of Southeast Europe and, by extension, the broader European region.

Source: IPTO, HEREMA, Deloitte Analysis

Shipping
Key market indicators – 2023

The Greek shipping industry, encompassing merchant shipping, near-shore shipping and cruises, holds a leading position in international maritime transportation and contributes significant value to the domestic economy and local tourism.

Merchant Shipping

1st place in terms of dwt*, with **17.4% of the world's capacity** being of Greek interest

1st place in terms of **value**, with **11.80% of the global fleet** being of Greek interest

2nd place in European **dominant registry flags** in terms of both **dwt and value**

*dwt = dead weight tons

4,936 Vessels* → **598** National Flag; **4,338** Foreign Flag

** 1,000 gross tonnage and above of Greek interest, as of January 2023.*

In 2023, Greek shipowners were at the forefront of shipbuilding, placing 267 orders with a total cost of $18.1bn., marking a 60% increase over the previous year's value. Out of the 26.6mn. dwt of new buildings, 15mn. dwt account for tankers; the most popular type of vessel for Greek new buildings in 2023.

Greek shipowners have also been active at the **second-hand market**. In 2023, the "Greeks" acquired 233 vessels accounting for 13.4% of the total 1,731 vessels that changed hands. More specifically, they purchased 157 bulk carriers and 49 tankers.

Sources: UNCTAD, Union of Greek Shipowners, Clarksons

Near-Shore Shipping

33 Companies	**163** Ships
132,546 Passenger Capacity	**28 years** Average Fleet Age

Oligopolistic market, dominated by the Attica and the Grimaldi Group. All other companies own and operate a single-digit number of ships.

Accumulated over the years negative economic results.

Urgent need for the renewal of the aging fleet while adopting more "green" fuels.

Sources: Hellenic Ports Association

Cruise

€493.4 mn.
Total receipts from cruise passengers in 2022
*(**145.7%** YoY increase)*

Top Greek cruise destinations in 2022

PIRAEUS	SANTORINI	MYKONOS
Passengers: **880,416**	Passengers: **826,602**	Passengers: **685,918**
Ship Arrivals: **677**	Ship Arrivals: **686**	Ship Arrivals: **608**

In the first eight months of 2023, **Piraeus** port marked a YoY increase of:

85% Passenger visits	**14%** Ship arrivals

The impact of the recent Middle East conflict on cruise routes has benefited Greek destinations, forcing cruise ships to choose safe neighboring ports. Greece is now focusing its efforts to further enhance its attractiveness as a cruise destination by strengthening its port infrastructure.

Sources: Hellenic Ports Association, Bank of Greece, Piraeus Port Authority

Shipping

The significant role of decarbonization

Shipping contributes almost 3% of global greenhouse gas (GHG) emissions annually. To contain these emissions and help prevent dangerous levels of global warming, shipping is bound by both international and European rules and regulations.

International Maritime Organization (IMO) – Ambitious Goals by 2050

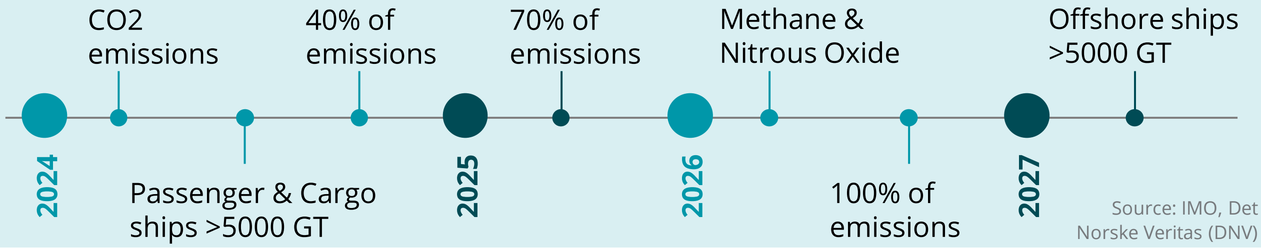
Reduction of GHG emissions

**compared to 2008*

→ **20% – 30%** by 2030 → **70% – 80%** by 2040 → **100%** by 2050

Emissions Trading System (ETS)

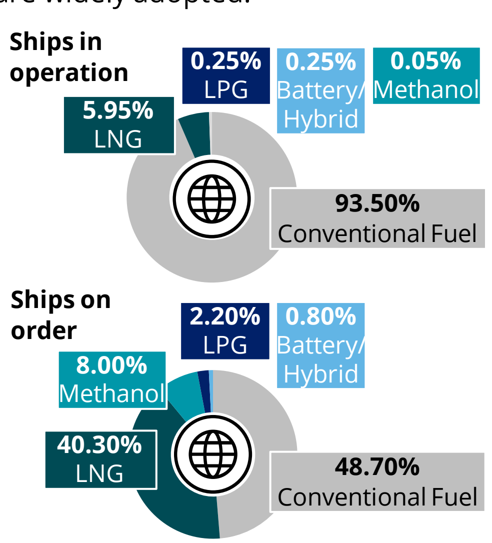
In 2024, the shipping industry joins the European Union CO_2 "cap and trade" scheme, irrespective of the flag of registration, or ownership. The allowances surrendered will cover 100% of a vessel's emissions from voyages between two EU ports & during its stay at an EU port, and 50% of emissions from an EU to a non-EU port, or vice versa. The estimated cost of the ETS based on this year's average price of $90 per ton of CO2 is expected to rise for ships to $3.3 bn. in 2024, to $5.8 bn. in 2025, and to $8.2 bn. in 2026.



Source: IMO, Det Norske Veritas (DNV)

Alternative Fuels

Complying with the regulations aimed at achieving decarbonization objectives, necessitates investments in alternative fuels. The development of an integrated framework of production, storage, and distribution networks for alternative fuels is a basic prerequisite for their widespread application. While it is still not clear which one will prevail, transition fuels or dual-fuel engines are widely adopted.



Source: DNV, IHSMarkit

LNG: transitional fuel, reduces GHG emissions up to 23%

LPG: relatively easy to store, high energy density, 15% CO2 reduction

Green Hydrogen: non-toxic, low energy density, increased storage onboard is needed, no major modifications from LNG

Methanol: toxic, bio-methanol provides less than 1% of global production

Ammonia: toxic, easy to store, higher energy density than hydrogen, blue ammonia emits 85% less CO2 than brown

Battery/Hybrid: zero-emission, fully electric for short-sea distances

Wind Power: can supply 10% – 90% of a ship's power needs

Source: DNV, Reuters, MAN energy solutions, Guardian, Maritime Fairtrade

Shipping

The revival of the Greek shipbuilding industry

The need to adopt alternative fuels and the aging of the Greek near-shore shipping fleet are expected to further increase the activity of shipowners in shipyards. Having suffered a decade of long decline, the Greek shipbuilding sector is currently undergoing a regeneration phase in order to capitalize the opportunity presented by recent regulations.

Alternative fuel options, **dual-fuel** engines as well as **efficiency measures** emerging from decarbonization goals force shipowners to return to shipyards. In order to maintain a competitive edge, shipping companies adopt efficiency-enhancing innovations like installing air lubrication systems, scrubbers, upgrading propellers, and applying hull coatings.

The average age of the Greek-owned **near-shore** fleet is approximately **28 years**.

Investments of more than **€4.5 bn.** in the short term and **€10 bn.** in the long term are required for the renewal of the near-shore fleet by 2030.

Source: Deloitte Analysis

Neorion

Following the shipyard's takeover by the ONEX Group in 2019, over €15 mn. in debt repayments were made, and over €20 mn. were allocated to infrastructure enhancements. By 2025, an additional Aframax tank will be operational, adding to its existing capacity of 75,000 and 40,000 DWT floating tanks. Furthermore, the yard will implement a five-year investment plan of €60 mn. regarding its green transition. Indicative of its dynamics is the total number of 438 ships that have been repaired, since the ONEX Group acquired the shipyard.

Elefsina

The overall impact on the Greek economy from the reopening of the Elefsina Shipyards under the management of the ONEX group is expected to reach 1% of GDP. The goal is set at 200 annual ship repairs, while two more floating tanks will be put into operation in March 2024. Concurrently, agreements have been concluded with the Italian shipbuilding group Fincantieri in the field of defense hardware and with Cisco for the development of a private 5G network and the digital transformation of the shipyard.

Skaramagas

The Skaramagas shipyard, spanning over 700,000m², was sold to shipowner G. Prokopiou in 2023 for €62.5 mn. The existing infrastructure includes two permanent tanks of 500 and 250 thousand tons, three smaller floating tanks of 72, 60, and 36 thousand tons, as well as an inclined shipbuilding bed for launching ships, or their parts. The yard will maintain and manufacture yachts in addition to installing cutting-edge technologies and electronic systems on Navy and Coast Guard ships. The goal of the new management is to transform the shipyard into a green center of technological innovation.

In addition, a major agreement was signed between ONEX and Attica Group for a total of €1 bn. The 10-year partnership concerns the renewal of the Group's fleet in the Elefsina and Neorion Shipyards.

With the reopening of the shipyards, Greece is focusing its efforts on regaining the trust of the shipowners in the Greek yards and becoming a shipbuilding hub in the wider region of the Southeast Mediterranean, as well as strengthening the local integrated maritime ecosystem.

Source: Deloitte Analysis

Ports
Infrastructure as an integral part of shipping

The nation's ports play a crucial role in bolstering its shipping activities, thereby augmenting its overall competitiveness. Over the recent years, a succession of privatizations and substantial infrastructure enhancement initiatives have been undertaken with the objective of optimizing the services rendered to both vessels and passengers at Greek ports.

Ports & Marinas Privatization

40 years *concession* **Corfu** Marina →	**€89 mn.** **Lamda Marinas** Investments
67% **Igoumenitsa** Port →	**€84 mn.** **Grimaldi Group** Group
67% **Heraklion** Port →	**€80 mn.** **Grimaldi Group** Minoan Lines
67% **Volos** Port →	**€51 mn.** **Thessaloniki** Port Authority
40 years *concession* **Kavala** Port →	**€34 mn.** **International Ports** Investments Kavala

Source: HRADF

Traffic in Greek Ports

In recent years, there has been a notable surge in cruise and passenger activity in Greece, closely associated with the implementation of infrastructure enhancement initiatives at various tourist destinations. On the contrary, the handling of goods shows a slight downward trend.

141.6 mn. tons of **Goods**
(in 2022, -5.3% compared to 2021)

4,780 **Cruise Ships** *(in 2022, +131% compared to 2021)*	**4.6 mn.** **Passengers** *(in 2022, +226% compared to 2021)*

Sources: Hellenic Ports Association, Hellenic Statistical Authority

Major Developments in Piraeus & Thessaloniki Ports

A series of 13 significant developments with a combined budget of €240 mn. are set to commence at the **Piraeus Port**. These undertakings encompass the establishment of six additional docking facilities, dredging of the central harbor, enhancement of alternative fuel infrastructure, and various other projects aimed at augmenting the port's infrastructure and operational efficiency. Currently however, Piraeus, the largest container port in the Mediterranean, is negatively affected by the diversion of merchant ships around Africa due to Houthi attacks on the Suez Canal.

In **Thessaloniki's Port**, a new cruise terminal commenced full operations in July. It is equipped with two additional berths, significantly enhancing its capacity to accommodate over 6,000 passengers and crew members daily. In 2024, there are anticipations of progress in the expansion of the sixth pier and the establishment of road connectivity between the Port, Egnatia, and roadway of PATHE (Patras, Athens, Thessaloniki, and Evzoni).

Source: Deloitte Analysis

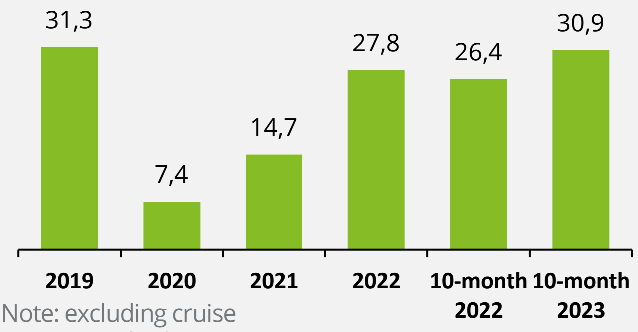
Enhancements to the country's port infrastructure, coupled with endeavors to adhere to global regulations and initiatives towards decarbonization, seek to bolster Greece's position on the global maritime market. In an era marked by volatility and challenges, the Greek shipping sector, leveraging its extensive experience and collaborative ethos, strives to maintain its leadership in international transportation.

Tourism

2023 marks another record year for Greece

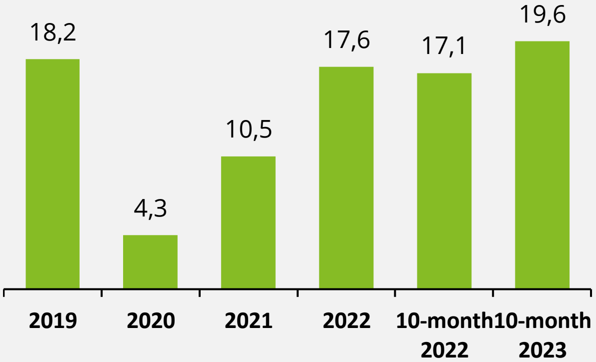
In 2023, Greek tourism maintained its upward trend and continuous progress, surpassing preceding benchmarks. Key metrics reflect **significant growth**:

International tourist arrivals, (mn. visitors)



Note: excluding cruise
Source: Bank of Greece

International tourism receipts, (€ bn.)



...while **positive trends** have emerged...

- Improving hotel supply and product offering; increasing room rates and revenues
- Investment activity in the Greek hospitality industry is heating up
- New investors and brands/operators entering the market
- Large brownfield and greenfield mixed-use developments
- Residencies and villas (incl. branded) in high demand
- New business models & concepts (e.g., senior living communities, green/eco resorts)

...and **remarkable distinctions and awards** are constantly achieved.

- Greece named as “Best European Destination” at Travvy Awards 2023
- Greece ranks #1 most searched destination in Europe (European Best Destinations 2023)
- Greece is among the best performing tourism destinations in the world and the only European country making it into the global ranking (ForwardKeys - Global Travel Trends 2023)
- Greece ranked #3 in the most-in-demand destinations for travelers in 2024 (American Marketing Group)
- Crete, Athens and Santorini ranked among the top 25 destinations in the world for 2024 (Travelers' Choice - Best of the Best Destinations, Tripadvisor)
- Greece is ranked #9 globally in Tourist Service Infrastructure (WEF Global T&T Index 2021)

Tourism
The path to a resilient and sustainable future

There is an impressive track record and **strong foreign investment interest** in the Greek tourism sector, both from large funds as well as from established hotel chains. In addition, investment in the sector should continue to be supported by the growth of the Greek economy and the implementation of the recovery and resilience plan.

- Greece gained ground as a sustainable and attractive investor destination, being on the top-10 countries worldwide for Foreign Direct Investments (FDI), after the COVID-19 recovery.
- The Economist ranked Greece as the top 2023 performer among 35 countries, for 2nd consecutive year, mainly due to high growth, resilient banking system, plunging debt-to-GDP ratio and stock market performance.
- In October 2023, S&P Global upgraded Greece to investment grade, after 13 years. Fitch Ratings also upgraded Greece to investment grade at BBB- in December 2023.
- The greatest interest is shown in the creation and/or reconstruction of luxury resorts and high-end boutique city hotels both in established tourist destinations and in emerging ones that show significant growth prospects.
- Athens ranks #9 most attractive EU city for hotel investments (Deloitte EU Hotel Industry Survey 2022).

Nevertheless, **critical challenges arise** mainly due to geopolitical uncertainty, the ongoing climate crisis, changing preferences / needs and inflationary pressures.

- A volatile economic outlook, influenced by factors such as high inflationary pressures and increased energy costs.
- Increased frequency of natural and climate-related incidents, ranging from extreme weather to natural disasters, pose risks to tourism infrastructure and the safety of tourists.
- Persistent staff shortages, initially triggered by the pandemic, are becoming a long-term issue.
- Regional instability and raised concerns, particularly the Ukraine conflict and Eastern Mediterranean tensions, escalate inflation, disrupts tourism markets, and raises concerns like refugee inflows.
- Intensified tourism competition from Mediterranean countries and emerging tourism destinations.
- Changing preferences and needs and emergence of new market / segments and different types of travelers (e.g., Gen Z traveler, digital nomads, nature lovers).

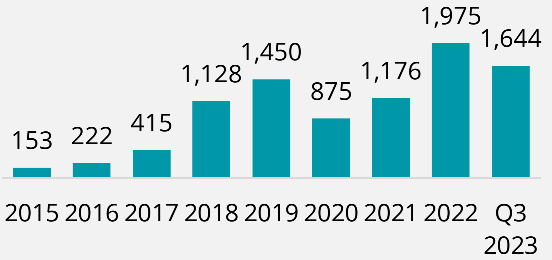
Towards this direction, **key actions / initiatives need to be implemented** to ensure a resilient and sustainable future for the industry.

- Improvement and development of infrastructure
- Utilization of tech advancements and digital modernization
- Attracting, upskilling/reskilling and retaining talent
- Crisis preparedness and planning
- Upgrade and promotion of the tourism product
- Environmental stewardship and sustainable tourism focus

Real Estate
2023 key market indicators

For 2023, **real estate prices continued to grow.** In general, this occurred due to the **rising demand, paired with limited supply of high-quality properties**. Hence, demand turned to real estate with lower specification standards, leading to sharp increases in terms of sale prices and rents. Lastly, **yields were kept at low levels, but attractive for investments**, and as a result investment activity remained active both at a national and international level.

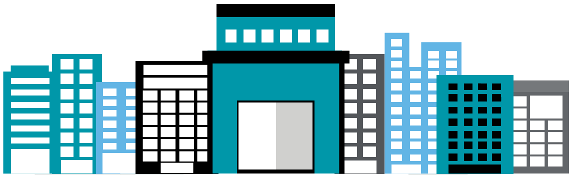
Foreign Direct Investments (FDI) in Real Estate (€ mn.)



2023 estimates show that **Foreign Direct Investments (FDI)** in real estate are **~40% higher** compared to 2022.

Residential real estate continued the upward trend in prices with Athens and Thessaloniki demonstrating the biggest increases. The number of new mortgages rose to €0.8 bn. (January to September 2023), highlighting the sector's resilience.

The ever-increasing investment interest for prime office spaces acts as one of the main drivers for rising rents and prices. Additionally, there is an extensive construction pipeline of high-quality certified offices.



The retail prices and rents follow the upward trend of previous years. The investment interest is mainly oriented towards shopping centers.

Future trends and prospects

- Compressed industrial and logistic yields
- Digitalization paired with smart cities
- Importance of ESG metrics and qualifications
- Large pipeline for infrastructure investments
- Modern office spaces are on the rise

The real estate market faces pressure from rising inflation, interest rates, tight funding, and geopolitical uncertainty. Amid a global downward correction of values, there is a shift towards sustainable investments with lower operating costs, flexibility, and quality. The Greek RE market, with its unique features, is expected to remain attractive, particularly for high-end properties.

Construction

Despite a difficult decade, the industry rebounds

In Greece's pursuit of financial stability and growth, the construction industry plays a vital role. In that respect from 2020 to 2022, the Greek Construction industry's Gross Value Added (GVA) increased by nearly **11%** on a YoY basis, and by **17.2%** in the first 9 months of 2023.

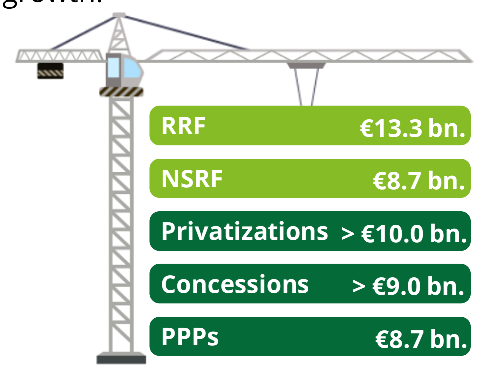
Construction industry gains traction

- In 2023, significant projects were contracted, including the Integrated Tourist Complex (IRC) with a casino in Elliniko, the Northern Road Axis of Crete (VOAK) via concession, the Ultrafast Broadband (UFBB) and numerous others
- Backlog among top players reached a historic high of €17.1 bn. in 9 months 2023, contrasting with a total of €11.0 bn. in 2022
- The potential of the Greek market attracted many respectable investors over the recent years, creating significant strategic endeavors in 2023, such as spin-offs and M&As among top industry players
- In 2024, even greater growth is anticipated in the industry, with new projects such as Attiki Odos and Egnatia, among others being in the spotlight

Sources: Deloitte Analysis

Growth Drivers

The Greek construction industry, previously financially strained, now benefits from **access to funding**, both locally and from abroad. **Public private synergies** on the other hand is expected to play a crucial role in adding value and fostering further growth.



Sources: IOBE, HRADF, Ministry of Transport and Infrastructure & Ministry of Development and Investment

Industry Challenges

The global challenges outlined in Deloitte's latest Global Powers of Construction report are also applicable in the Greek market:

Transformation to improve profitability
Introduction of new technologies and evolution of existing operational methods with a view to limiting cost divergences

Cost Pressure
Rising construction material and labor costs highlight the necessity to transform the traditional supply chain

Adaptation to ESG criteria
Companies in the industry must now comply with the guidelines outlined in the ESG criteria

Contracting
The need to redefine the model contracts to provide for scenarios of adverse price changes

Talent management
The combination of a workforce shortage and restricted industry growth prospects is creating challenges in staff recruitment, posing a risk to project completion

Emerging trends

While the future looks promising, it's crucial to remain vigilant about emerging trends, as well as implementing best practices.

New Technologies

Established:
- BIM
- Cloud robotics
- Drones
- 3D printing

Concept:
- IoT
- Digital twin
- AR/VR
- Concept model visualization

Horizon:
- AI
- Machine learning

Decarbonization

While decarbonization is crucial, the construction industry is not currently progressing toward achieving decarbonization by 2050. This goal will be achieved through:

- Mutually beneficial strategies
- Enabling regulations & technologies
- Collaboration and leadership

Source: Deloitte's 12th edition Responsible construction ecosystem

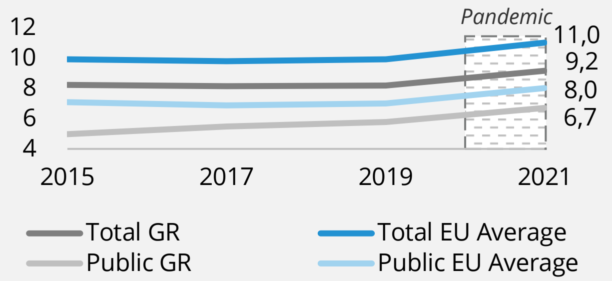
Health Care
Adapting to changes in the healthcare landscape

The lessons emerging from the pandemic demonstrate that health is the foundation upon which resilient, productive economies and fair societies are built. Despite an efficient response to Covid-19, health expenditure in Greece remains below the EU average.

The Greek Healthcare Expenditure

Public Health Expenditure in Greece represented **6.7% of GDP** in 2021, far **below the EU** average of **8.0%.**

Health Expenditure (% of GDP)



During the past decade, **the pharmaceutical industry adjusted to modest public budget allocations**, increasing their contribution to counter enduring fiscal constraints.

Industry Contribution

€2,888 mn.
2022

€428 mn.
2014

Continued **reforms drive healthcare restructuring** in Greece, with **€2.2 bn. or 13% of RRF grants allocated** to healthcare, amid broader EU health transformation.

Sources: OECD, Eurostat, IOBE, Ministry of Finance

Mega Trends

Greece's healthcare challenges mirror broader EU issues. **Deloitte foresees a shift in emphasis from cure to prevention**, driven by a citizen-centric, digitally enabled model.

Consumerization
Growing awareness among European citizens about service quality and access is fueling the demand for more equitable healthcare.

Interoperable data and data-sharing
Enabling citizens to access and control their medical records, ensuring secure utilization of health data for innovation, policymaking and research.

Continued digital innovation
Technological breakthroughs, such as robotics and AI, have the potential to transform care delivery, optimize operations and accelerate drug discovery and clinical trials.

Source: Deloitte Resources

Implications for Key Industry Players

As treatments adopt the "5P" approach—predictive, preventative, participatory, personalized, and precise—promising longer and higher-quality lives, key players must decide to either adapt and seize market opportunities, or risk losing market share.

Healthcare Providers

- Prioritize patients, ensuring the end-to-end visibility of outcomes
- Utilize advanced technologies to enhance patient experience

Life Sciences Companies

- Shift from mass-produced therapies to precise, targeted treatments
- Leverage AI for accelerated drug discovery and improved clinical-trial efficiency

Technology Innovators

- Facilitate/drive information sharing among the ecosystem
- Address demands for price transparency and wellness-focused clinical pathways

Source: Deloitte Resources

Disruptive Trends

On an ever-evolving business landscape, it is essential to identify the major disruptors that are expected to shape the new normal.

Generative AI emerges as a disruptive trend, showcasing its potential to revolutionize various economic sectors in Greece. However, as businesses embrace the power of Generative AI, the need to navigate ethical considerations becomes increasingly imperative. The future landscape envisions a symbiotic revolution, where intelligent systems collaborate seamlessly with humans, creating a dynamic environment that augments productivity and enhances decision-making.

Another important parameter that is expected to offer enterprises a significant competitive advantage is Innovation. Fostering a culture of innovation through investment in research & development and creative thinking, enables enterprises to unlock opportunities. The Greek business community, as indicated in a recent Deloitte Greece survey, acknowledges the significance of innovation in achieving a sustainable competitive advantage.

Moreover, the growing emphasis on Sustainable development, driven by the imperative to address climate change challenges, adds another layer to the transformative forces at play. The Greek environmental policy and the EU regulatory framework accelerate efforts to achieve climate goals, aiming to eliminate greenhouse gas emissions by 2050.

Innovation

Elevating the pivotal role of innovation

Deloitte Greece conducted an online survey (during 2023) to more than 55 Greek companies (accounting for sufficient stratification of size and sector of activity), with the aim to capture the perception of the Greek business community regarding the level of Innovation in our country, as well as how innovation could act as a lever of competitiveness. The survey mainly focused on the topics that are presented below, together with the respective findings:

Access the full report here:

The role of the State and the available funding tools

71% Investments in education

55% Tax incentives for R&D

*.... were highlighted as **the primary actions that the State should take** in order to enhance innovation.*

Main obstacles & barriers while pursuing innovation

69% Operational Challenges

47% Strategic Challenges

35% Cultural Challenges

*.... have been indicated as **the most significant issues** that companies are facing.*

Business perception of innovation – Innovator profile

100% Embrace innovation

30% "Pioneer"

35% "Experimenter"

35% "Follower"

*.... the Greek business community could be equally characterized **across different innovation profiles** ("Pioneer" – "Experimenter" – "Follower").*

Additionally, it is highlighted that Greek companies **mainly pursue core (40%) & incremental (40%) innovation**, rather than disruptive (9%).

To bolster innovation, it is imperative for Greek businesses to translate the influences from external factors and the internal capabilities into concrete actions.

Drivers and factors that enhance innovation

EXTERNAL FACTORS

- Workshops with experts from own industry (49%)
- Constant analysis of customer preferences (47%)

INTERNAL FACTORS

- Sensing and scanning new technologies and trends (62%)
- Innovation strategy design and aspirations (55%)

67% highlighted that **external factors** are as important as **internal factors**.

Investments in innovation

- Emergence of new technologies
- Changes in customer expectations & preferences

*.... were indicated as the main **factors that trigger innovation.***

- Artificial Intelligence
- Big Data Analytics

*... identified as the **key technologies** for innovation investments.*

Organizations must prioritize innovation, invest strategically, seek creative solutions and collaborate with stakeholders to thrive in the current, more unpredictable and dynamic business landscape.

Sustainability & Climate change

Sustainability as a means of addressing global challenges

Sustainability

Sustainable development envisions a harmonious coexistence of economic progress and environmental preservation. Businesses that embrace sustainability can benefit from new market opportunities, risk mitigation, long-term resilience, and an enhanced reputation, ultimately contributing to their economic success.

Since 2015, the number of countries with national and local disaster risk reduction strategies has **doubled**.

The cost of climate inaction over the next 50 years could be **$178 tn**.

However, **$43 tn.** could be gained by rapidly accelerating the transition to net-zero.

In recent years, businesses have shown an increasing interest in sustainability in order to address climate change. Deloitte's 2023 CxO Sustainability Report, incorporating insights from C-level executives on a global scale, revealed the growing importance of sustainability issues in business strategy and decision-making.

Access the full report here:

42%
of executives rated climate change as one of their "top three issues" with only the economic outlook ranking slightly higher.

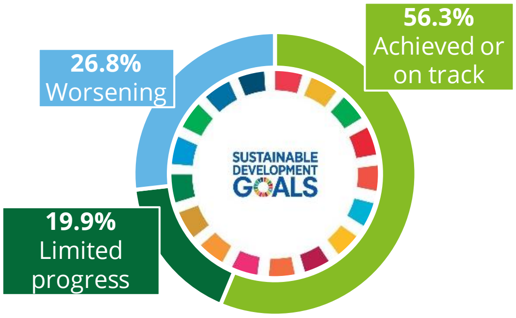
65%
highlighted that the changing regulatory environment has led their organization to increase climate action over the last year.

78%
feel somewhat, or extremely optimistic that the world will take sufficient steps to avoid the worst impacts of climate change.

Source: Deloitte Sustainability Report

In Greece, the pursuit of sustainability aligns closely with the United Nations – Sustainable Development Goals (SDGs), reflecting a commitment to address global challenges while promoting economic, environmental and social well-being to achieve the ESG challenges under each SDG.

Greece ranked 28th among 166 UN Members on the total progress towards achieving all 17 SDGs.



Adhering to the European Union's sustainability guidelines, Greek enterprises have diligently worked to meet their ESG requirements, elevating their maturity level.

Source: United Nations

Deloitte – INSETE Sustainability Report 2023 "Sustainability in the Greek tourism market"

The report highlights the following:

Access the full report here:

80% implemented, or intended to implement more than one environmental action in 2023, and **77%** more than one socioeconomic action.

Reduction of energy consumption (**76%**) was the top area of sustainability to which organizations devoted capital expenditures in the last 2-3 years.

Customer experience and satisfaction (**64%**) is perceived as the most important driver to invest in sustainability actions.

Source: Deloitte-Insete Sustainability in the Greek tourism market Report

Sustainability & Climate change

Extreme weather conditions call for urgent action

Climate Change

Sustainability offers solutions to issues caused by climate change, which primarily manifests in the form of extreme weather events and rising temperatures. Climate change necessitates the integration of a holistic approach to climate risk management into corporate strategy.

$2.8 tn.
Global damage due to extreme weather events from 2000 to 2019

$280 bn.
Global anthropogenic heating cost in 2022

90
Extreme weather events 2010-2020
(50% more than 2000-2010)

€2.2 bn.
Annual estimated cost of climate change by 2100

Sources: International Energy Agency, National Bank of Greece

During 2023...

GLOBAL: Wildfires burned approximately 184,000 km² across Canada; Storm "Daniel" dropped the equivalent of eight months of rain on Libya's northeast; heavy rainfalls drenched China and New York City; catastrophic wildfires ravaged Hawaii; and the list goes on.

GREECE: More than 1,700 km² were burned during wildfires, equaling more than 1% of the country's acreage. Furthermore, catastrophic floods that struck due to Storm "Daniel", caused the region of Thessaly to experience a €0.15 bn. decline in production and a 70% YoY decrease in tourism-related gross value added until the end of the year.

From January to September 2023, the world average temperature exceeded pre-industrial levels by 1.4°C, marking the hottest year ever documented. The cost of heat waves in Greece is over €1 bn. per year.

In the coming years, the consequences of these phenomena on key sectors of the Greek economy are expected to intensify:

Tourism will be affected by unpleasant temperature levels during the summer. Fear of extreme weather events is expected to rise, especially after the wildfires of 2023 that forced thousands of tourists to evacuate.

Greek **agriculture** had the highest economic loss due to climate change from 2010 to 2020 in the EU. In the last 20 years, 9,000 km² of the country's tillable land has been abandoned. In 2023, in some areas, the ground temperature reached up to 60°C.

Athens is expected to lose €230 mn. gross value added due to the decrease in **labor productivity** caused by high temperatures by 2050. The most impacted industries will be manufacturing, logistics, and public services.

Future Predictions

In 2024, the Earth is predicted to experience even hotter temperatures because of the impact of El Niño. Moreover, it is projected that if the average global temperature rises by 1.5°C, the Greek public debt to GDP ratio will increase by 2.6%. Climate projections for Greece by 2050 suggest a potential increase of 15-20 hot days annually, a precipitation decrease ranging from 10%-30%, a rise in high-fire-risk days by 15%-70%, and a heightened frequency of extreme weather events.

Source: Climate Change Impacts Study Committee (CCISC), Intergovernmental Panel on Climate Change (IPCC), Eurostat, Adrienne Arsht-Rockefeller Foundation Resilience Center (Arsht-Rock)

Sustainability & Climate change

Legislative measures and future trends

Legislation & Trends

Both the European Union and Greece are enacting comprehensive legislative frameworks in response to climate change and its consequences.

2024	2025	2026	2027
EU ETS	**SEC climate-related disclosures**	**SEC climate-related disclosures**	**EU ETS**
January 1, 2024, for cargo and passenger ships of 5000 GT and above	***As a Non-Accelerated Filer (FY2024)*** All proposed disclosures including GHG emissions metrics for Scope 1, Scope 2 and associated intensity metrics	***As a Non-Accelerated Filer (FY2025)*** All proposed disclosures including GHG emissions metrics for Scope 3 and associated intensity metrics	January 1, 2027, for offshore ships of 5000 GT and above
Greek Climate Law			
Climate Law report on Scope 1 and Scope 2 emissions – S.A. companies with stocks or other securities that are listed on the Greek stock exchange			
	CSRD & EU Taxonomy		
	FY2024 (reports published in 2025) for listed companies[1] with over 500 employees	FY25 (reports published in 2026) large non-listed[1]	FY2026 (listed) SMEs are included through simplified reporting standards[1]
	CSRD & EU Taxonomy		
	Reporting level – Stand alone subsidiary, unless included in the parent's report prepared under ESRD or equivalent standards for non-EU parent (i.e., consolidated group level)		
	Companies already subject to the NFRD* including large U.S. companies with more than 500 employees and listed on an EU regulated market	All large** US companies listed on EU-regulated markets and all large EU subsidiaries of US companies	SME subsidiaries of US companies listed on EU regulated market***
	Greek Climate Law		
	Climate Law report on Scope 1 and Scope 2 emissions – S.A. companies with stocks or other securities that are listed on the Greek stock exchange		

*****Companies under NFRD, defined as large public interest entities with over 500 employees, include those listed on EU markets, banks, insurance firms, and others designated by national authorities.
******Under the CSRD, 'large undertaking' is an entity meeting two or more criteria of Note 1.
******* SMEs can choose to defer reporting for two years until 2028.

CSRD Note 1
All listed companies + large companies that exceed 2/3 of the following:

- Balance sheet total: > €20 mn.
- Net revenue: > €40 mn.
- > 250 average number of employees during the FY

Source: Deloitte Analysis

Regulations promote alignment between ambitions & impact and enlighten organizations and society about the focus areas and guidelines in order to achieve the overall objectives. In line with the available technology and the global and national reality, certain **trends** stand out that are expected to affect the business ecosystem even more in the coming period.

Renewable Energy Expansion

Electrification of Transportation

Climate Adaptation & Resilience

Ecosystems & Resources Conservation

Circular Economy

Green Finance

Source: Deloitte Analysis, United nations

Generative AI

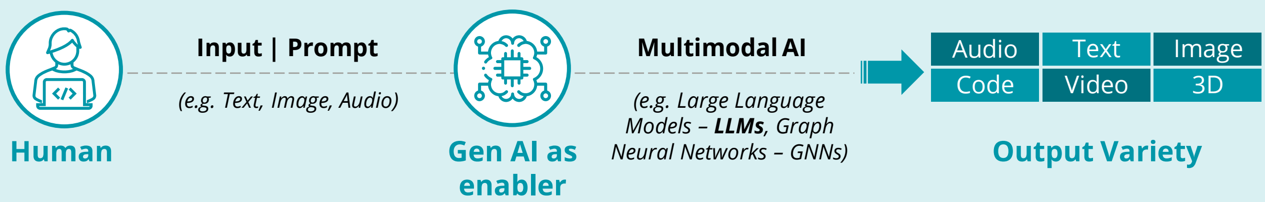
A redefined relationship between man & machine

What is AI & Generative AI?

Artificial Intelligence (AI) refers to **computer systems designed to perform tasks that typically require human intelligence.** This includes activities like learning, problem-solving, and decision-making. AI can analyze existing data to make informed choices.

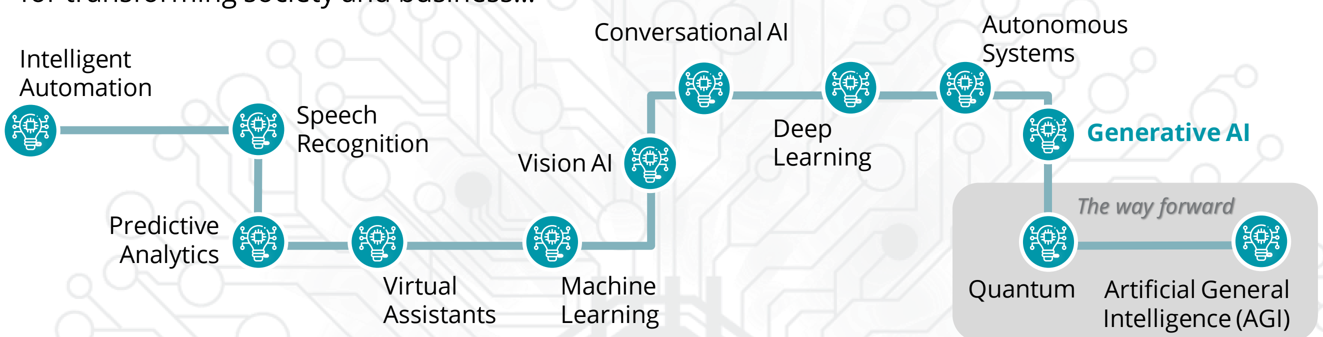
Generative AI is a subset of AI that **specializes in creating new content or data, rather than just analyzing existing information.** It employs deep learning and neural networks to identify patterns from large datasets. This sets it apart from traditional AI, which primarily relies on existing data for decision-making.

Generative AI – Process



How we got here?

AI is a broad field, with Generative AI being one of the many technologies that offer solutions for transforming society and business…



… and signals show that the AI market is growing at a very rapid pace.

ECONOMIC IMPACT	WORLDWIDE REVENUES	ENTERPRISE APPLICATION
✓ Generative AI **expected to increase Global GDP by $7 tn.** (7% over 10-year period)	✓ **Global AI-related revenues** are forecasted **to surpass $900 bn. in 2026**, with a 18.6% 5-year CAGR	✓ **79% of leaders reported full-scale deployment** for three or more types of AI (17% increase from 2021)

Why now?

The surge in Generative AI can be attributed to the increased availability of data, alongside breakthroughs in approaches related with the development and application of Generative AI**,** such as **GANs** (Generative Adversarial Networks) and **VAEs** (Variational Autoencoders), as well as the development of specialized hardware like **GPUs** (Graphics Processing Units) and **TPUs** (Tensor Processing Units).

AVAILABILITY OF LARGE AMOUNTS OF DATA

ADVANCEMENTS IN HARDWARE

BIG JUMP IN DEEP LEARNING

Source: Deloitte Resources

Generative AI

Generative AI's success depends on value creation and business adaptability

Gen AI promises substantial value addition across various economic sectors. It is anticipated to have a significant impact in the Financial and Insurance Service Industry, Wholesale Trade, Manufacturing, Service Provision, and Tech, IT & Communications in Greece.

Broad Categories of Value Addition

New insights
Uncover new ideas, insights and generally unleash creativity

Accelerating innovation
Increase the pace of new product or new service development and speedier go-to-market

Growth
Increase revenue generation through hyper-personalized marketing for target customers

Cost reduction
Reduce cost primarily through the automation of various job functions and the adjustment of corresponding roles

Process efficiency
Create process efficiencies through automating standard tasks and reducing manual interventions

Government citizen services
Improve accuracy and impact of government services, while creating easier access for populations at-risk

Industry Use Cases

Financial Services & Insurance
- Advanced fraud detection
- Virtual assistants for personalized service

Wholesale Trade
- Optimizing supply chains with demand predictions
- Developing pricing models for profitability estimation

ICT
- Creating technical specifications
- Locally adapted marketing content

Manufacturing
- Analyzing sensor data and maintenance history to predict equipment malfunctions
- Simulating and evaluating maintenance scenarios for operational efficiency

Service Provision
- Analyzing data to enhance performance and service quality
- Creating technical user manuals

Source: Deloitte Resources

Gen AI Adoption in Greece

To assess Gen AI's current and anticipated impact on the Greek economy, Deloitte in collaboration with SEPE conducted a respective survey focusing on the Greek business community.

Access the full report here:

ADOPTION STAGE

Only **15%**

... of businesses have experimented with Gen AI, indicating an early stage of adoption.

BUSINESS OUTLOOK

80%

... of businesses foresee efficiency gains and **development prospects** through Gen AI usage.

TECHNOLOGY, IT AND COMMUNICATIONS SECTORS

1 out of **3**

... companies haven't yet adjusted their **strategy** for Gen AI.

3 out of **5**

IT firms anticipate aiding other sectors, exacerbating the IT specialist shortage.

PROJECTED ECONOMIC IMPACT

Deloitte predicts a **GDP impact** of **+5.5%** to **+9.8%**, or **€10.7 bn. to €19.2 bn.** by 2030.

Source: Deloitte Analysis

Generative AI

Businesses must address crucial considerations as we move into the future of Gen AI

Rapid technological advancements bring substantial value, placing enterprises in a continuous cycle of adaptation. This is particularly evident with Gen AI, where key considerations require immediate attention, turning adaptability from a mere competitive advantage into a necessity.

Key Considerations

Understand Risks & Challenges
There are various performance and operational risks and limitations that enterprises should address when using Foundational Models, encompassing aspects such as hallucinations, ethics, explainability, and sustainability.

Did you know..?

Deloitte's Trustworthy AI™ Framework can assist businesses navigate and address these considerations.

Scan for more information:

Manage & Segregate Data Appropriately
Efficient data cataloging and retrieval, aided by emerging databases like Vector, are crucial for LLMs. Smaller, specialized models should be considered for optimal performance.

Understand the Impact on Talent
Generative AI can revolutionize businesses, unlocking human capital capabilities. This will require adapting operating models.

Develop Capabilities around LLMs
Enhance operational capabilities for deploying multiple smaller AI models in the enterprise.

A Glimpse into the Future of Gen AI

The future of Generative AI aims for seamless collaboration between intelligent systems and humans, augmenting productivity and decision-making. This symbiotic revolution demands responsible and ethical deployment for the benefit of society.

NOW Gen AI **accelerates** business as usual.	**IF** Businesses can mitigate risk with as-of-yet unreliable technology.	**ACCELERATED CONTENT GENERATION** Acceleration of activities, such as copywriting, UI/UX design, and content editing. Questions on risk and veracity require humans to double-check outputs, accelerating but not automating development.
NEW Generative AI **automates** minor activities.	**IF** Questions on accountability, ownership, and security are resolved.	**INNOVATION & INTEGRATION ENABLE TRUE AUTOMATION** AI generates reliable content, seamlessly integrates with business tools, and benefits from clear regulations.
NEXT Generative AI **augments** the human workforce.	**IF** The public and regulators can understand the shifting role of workforce.	**TRUE AUGMENTATION IS THE ULTIMATE FRONTIER** Neural interfacing and quantum computing enhance AI for complex tasks, making it a virtual teammate with rising adoption.

Source: Deloitte Resources

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