CHART OF THE MONTH

Vol.29

Decoupling Growth from Energy: Europe's Path to a Sustainable Future

HAEE
WWW.HAEE.GR
HELLENIC ASSOCIATION *for* ENERGY ECONOMICS

Powered by Deloitte.

Real GDP (EUR/capita) evolution in EU27 (2010-2022)

Gross Domestic Product (GDP) is the key indicator of economic growth. **GDP per capita** *(GDP divided by population)* is **constantly increasing** across the EU countries, indicating **steady economic growth**…

Lower GDP per Capita — Higher GDP per Capita

Real GDP per capita	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
EU 27													
Belgium													
Bulgaria													
Czechia													
Denmark													
Germany													
Estonia													
Ireland													
Greece													
Spain													
France													
Croatia													
Italy													
Cyprus													
Latvia													
Lithuania													
Luxembourg													
Hungary													
Malta													
Netherlands													
Austria													
Poland													
Portugal													
Romania													
Slovenia													
Slovakia													
Finland													
Sweden													
Iceland													

FEC (toe/capita) evolution in EU27 (2010-2022)

FEC per capita	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
EU 27													
Belgium													
Bulgaria													
Czechia													
Denmark													
Germany													
Estonia													
Ireland													
Greece													
Spain													
France													
Croatia													
Italy													
Cyprus													
Latvia													
Lithuania													
Luxembourg													
Hungary													
Malta													
Netherlands													
Austria													
Poland													
Portugal													
Romania													
Slovenia													
Slovakia													
Finland													
Sweden													
Iceland													

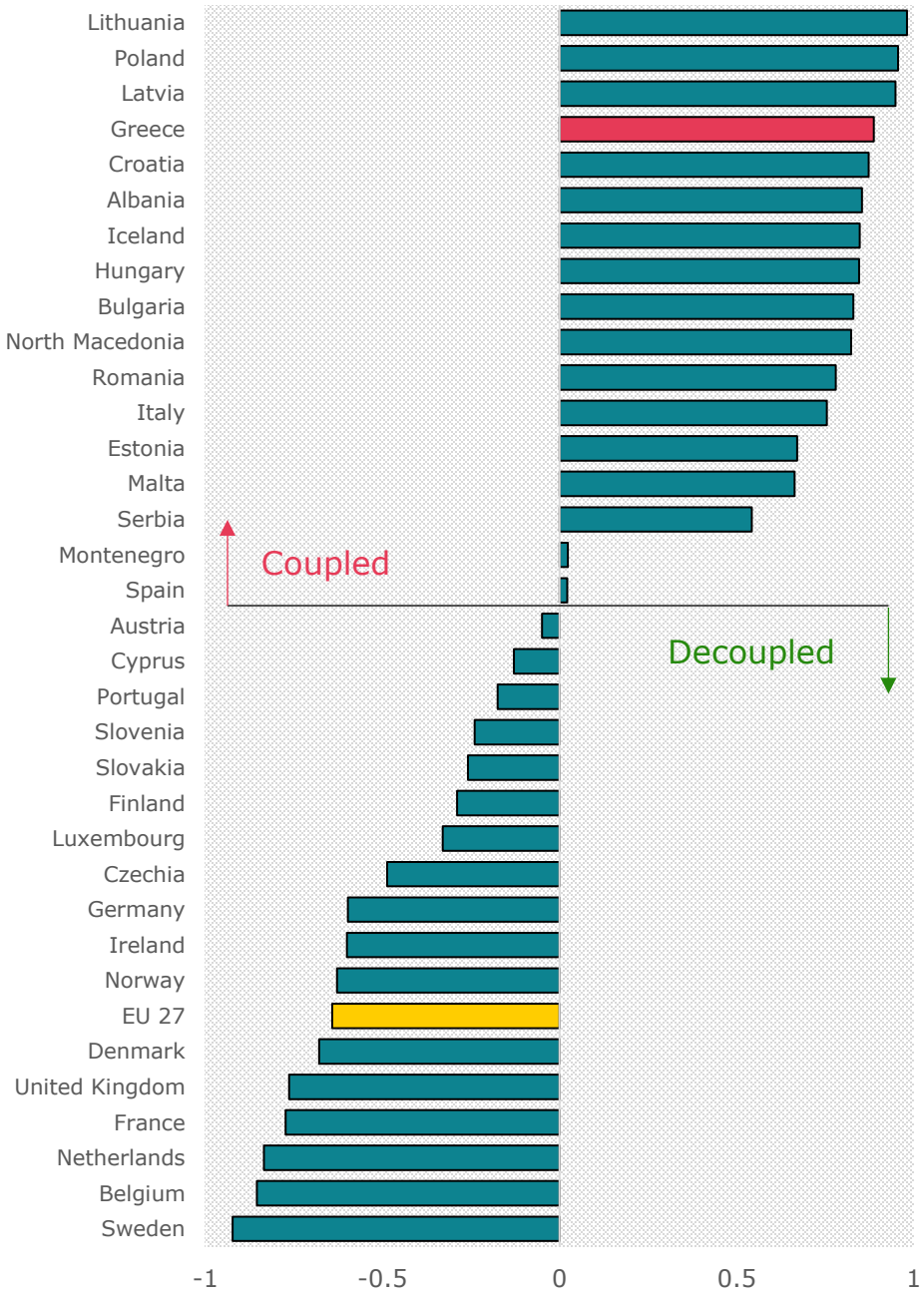
Lower FEC per Capita — Higher FEC per Capita

… **Final Energy Consumption (FEC) varies across EU,** with imbalances between countries as some have reduced their FEC, while others remain at the same levels or even increasing.

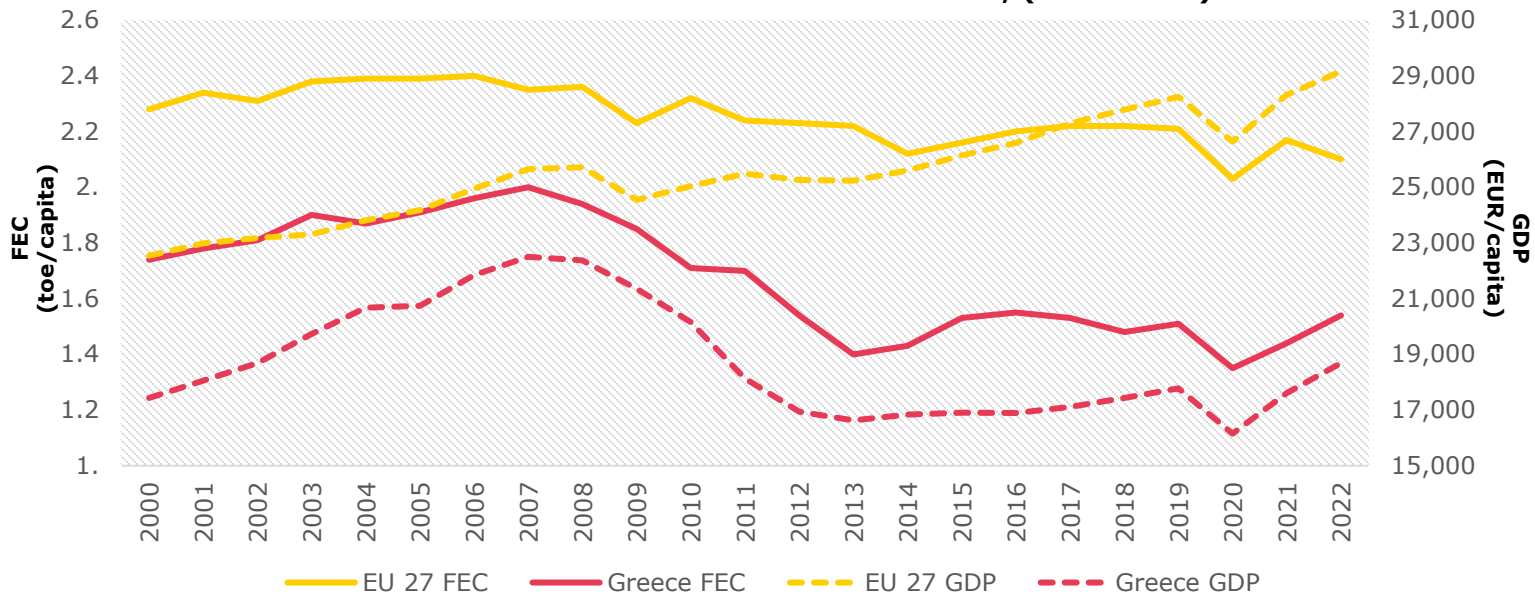
Source: Eurostat, HAEE analysis

Vol.29 Decoupling Growth from Energy: Europe's Path to a Sustainable Future

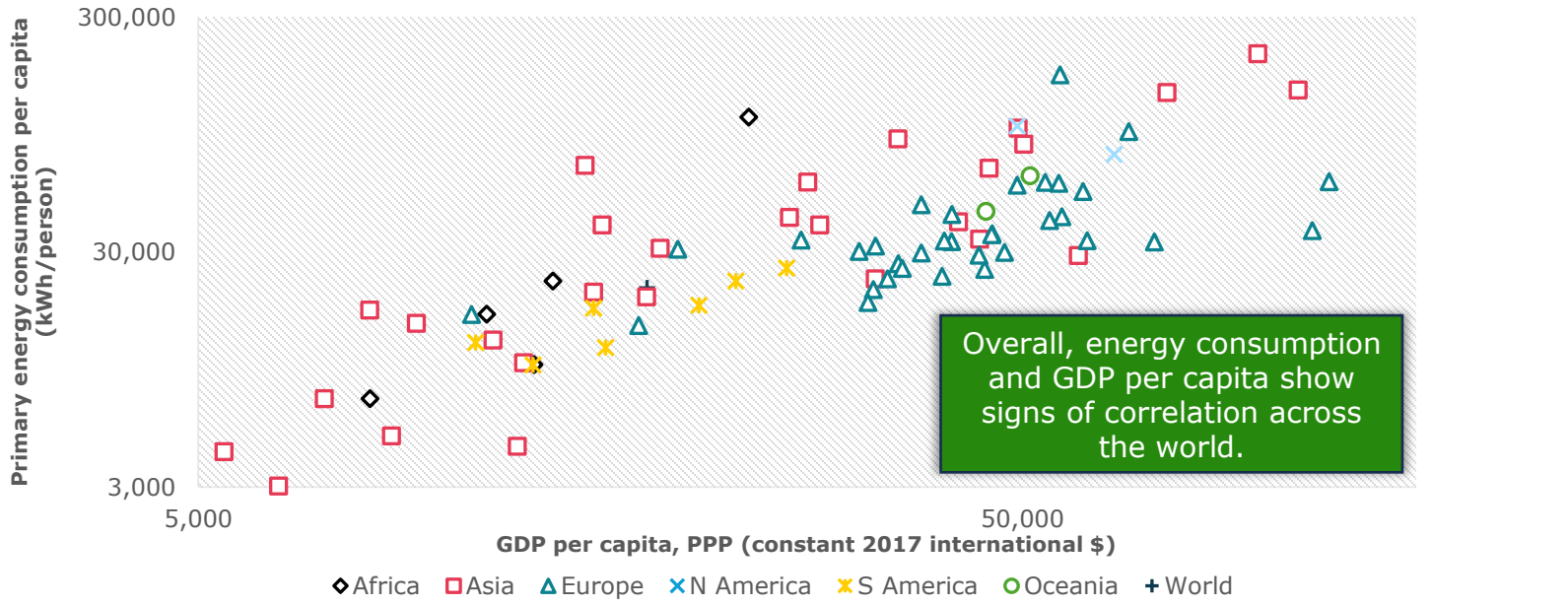
FEC and GDP correlation factors across EU (2000-2022)



FEC and GDP evolution for EU27 and Greece, (2000-2022)



Primary Energy Consumption and GDP per capita across the world, (2022)



Source: Eurostat, IEA, World Bank, OWID, HAEE analysis

Transitioning sectors like industry, transportation, and heating to electric power reduces reliance on fossil fuels and boosts efficiency. By expanding the role of renewables in electricity generation, electrification can decouple growth from traditional energy demands, cutting emissions and providing a solution for economic growth without increasing environmental impact.

Electrification of Key Sectors

Leveraging digital technologies like AI, IoT, and data analytics in energy systems can optimize resource allocation, predict demand, and improve grid stability. This digital shift enhances energy resilience, supports growth, and reduces unnecessary consumption, paving the way for smarter, less energy-intensive economies.

Digital Transformation in Energy Management

Sustainable Mobility

Encouraging electric vehicles (EVs), shared transportation models, and improved public transport infrastructure can reduce the energy intensity of transportation. Coupled with innovations in battery technology and charging networks, sustainable mobility supports economic activity with lower energy demands.

Green Innovation and R&D

Investing in research and development of new technologies, such as advanced materials or energy storage, allows economies to thrive on energy-efficient solutions. By fostering innovation, countries can maintain competitiveness while transitioning to sustainable, low-energy industries.

HAEE
WWW.HAEE.GR
HELLENIC ASSOCIATION *for* ENERGY ECONOMICS

Meet the Team

HAEE Research Team

Prof. Dr. Kostas Andriosopoulos
Editor-in-chief
Audencia Business School;
BoD Member, HAEE

Konstantinos Sfetsioris
Senior Project Manager, HAEE

Ilias Tsopelas
Energy Analyst, HAEE

Deloitte Team

Konstantinos Eleftheriadis,
Partner | Financial Advisory Services, Energy, Resources and Industrials Leader, Deloitte Greece

Dr. Konstantinos Bergeles,
Principal| Financial Advisory Services, Energy, Resources and Industrials, Deloitte Greece

Ioannis Kouloumpis,
Assistant Manager | Financial Advisory Services, Energy, Resources and Industrials, Deloitte Greece

Energy, Resources & Industrials | Deloitte

Powered by Deloitte.