



THREE SEAS INITIATIVE  
INVESTMENT FUND

# Impact Report 2025

Outcomes, Performance  
and Alignment with Fund Objectives

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# 1

## Introduction & Highlights

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# 1.1 A Message from the Supervisory Board

## Bartosz Drabikowski | Chairman of the Supervisory Board

The Three Seas Initiative Investment Fund (3SIIF, the Fund) was established in 2019 with a focused mandate: to deploy commercial infrastructure capital across Central and Eastern Europe's transport, energy and digital sectors, addressing long-standing underinvestment in connectivity along the region's north-south axis.

Since inception, the Fund has operated within an investment landscape shaped by structural forces that have validated and strengthened the original thesis. The International Monetary Fund's (IMF) 2020 assessment of the Central and Eastern Europe (CEE) infrastructure gap – estimated at €1.15 trillion relative to Western Europe – provided an early quantitative anchor for the scale of capital required. In the years since, that requirement has only intensified: binding TEN-T (Trans-European Transport Network) network completion dead-

lines, accelerated renewable energy targets under updated National Energy and Climate Plans, the reorientation of European energy security priorities following Russia's invasion of Ukraine, and the EU's Digital Decade connectivity objectives have together created an expanding and increasingly urgent demand for infrastructure investment across all three of the Fund's target sectors.

Against this backdrop, 3SIIF has now almost fully deployed its committed capital of approximately **€1.1 billion across five investments** spanning multiple Three Seas countries, with operations extending throughout the region. The portfolio reflects the Fund's commercial mandate; each investment was selected on the basis of risk-return characteristics, technical merit and alignment with the infrastructure capital requirements of the markets in which the Fund operates.

This report has been prepared at a natural inflection point in the Fund's lifecycle. With the investment period soon to conclude and at the request of Limited Partners (LP) following the 2025 LP meeting, it consolidates – for the first time in a single document – the Fund's investment activity, the operational profile of its portfolio assets, and contextual information on the infrastructure markets in which they operate. It is not a periodic reporting commitment, nor does it establish an ongoing cycle. It is intended as a structured reference point for investors at an important stage in the Fund's development.

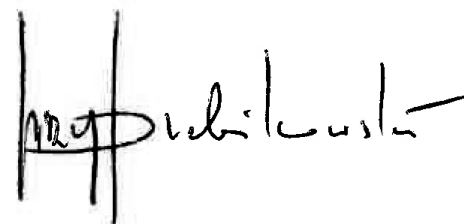
**CEE GDP growth has consistently outpaced Western European markets, the share of infrastructure funding from international sources has grown materially, and the regulatory and fiscal frameworks underpinning infrastructure development.**

The report also incorporates **economic modelling prepared by EY**, providing an illustrative view of selected macroeconomic activity associated with investment expenditures across the portfolio. Together with the portfolio-level information presented throughout the report, these outputs help frame the broader significance of the Fund's investment activity, while remaining subject to a defined methodology and underlying assumptions. Three Seas Region remains one of the most compelling infrastructure investment regions within the European Union (EU).

Gross Domestic Product (GDP) growth in the Three Seas Region has consistently outpaced Western European markets, the share of infrastructure funding from international sources has grown materially, and the regulatory and fiscal frameworks underpinning infrastructure development – from EU cohesion funds to the Connecting Europe Facility – continue to mature. The Three Seas Initiative (3SI) itself has evolved from a political platform into **an established forum with 143 prioritised projects valued at approximately €111 billion**, supported by strategic partnerships with the United States, Germany and the European Commission.

3SIIF was designed to demonstrate that commercially driven private capital has a role to play in addressing the region's infrastructure requirements; alongside, not in place of, public investment. We believe the Fund's deployment record and the quality of its portfolio bear that out.

We would like to thank the Fund's cornerstone investors, whose mandates to support commercially sustainable infrastructure development made this vehicle possible and whose backing has helped establish a scalable platform for long-term private infrastructure investment in the region. We look forward to the next phase of the Fund's lifecycle as these assets continue to operate and mature within one of Europe's most dynamic infrastructure markets.



BMF Port Burgas



# 1.2 Fund Objectives

The 3SIIF is an investment vehicle designed to finance key infrastructure projects in the Three Seas region. The main objective of the 3SIIF is to invest in transport, energy and digital infrastructure on the north-south axis in the Three Seas countries and to offset the differences in the development of individual regions of the EU. The fund is a commercial and market driven initiative that will grant a diversified investment and an attractive return to the investors.

## Reducing Infrastructure Gaps in Energy, Transport, and Digital Sectors

A core objective of the 3SI is to address persistent infrastructure gaps between Western Europe and the EU's eastern Member States particularly along the North-South axis. Priority areas include electricity grids, gas and LNG infrastructure, rail and road corridors, ports, and digital networks. Investment is focused on improving connectivity between the Baltic, Adriatic, and Black Sea regions, supporting economic convergence, energy transition, and increased trade flows across CEE.

## Reducing Infrastructure-Related Costs

3SI projects aim to lower structural cost disadvantages in Central and Eastern Europe caused by fragmented networks, limited interconnection, and legacy energy systems. Expanding cross-border energy and transport infrastructure is expected to reduce electricity and gas price volatility, improve logistics efficiency, and strengthen digital competitiveness. EU funding, development finance institutions, and the 3SIIF are supporting projects that enhance efficiency and affordability while maintaining security of supply.

## Security, Resilience & Independence

Security and strategic autonomy are central to the Three Seas Initiative, particularly since the Russian invasion of Ukraine. Member States are prioritising infrastructure that reduces dependence on Russian energy, including LNG terminals, gas interconnectors, renewable energy, nuclear power, and strengthened electricity grids. Investments that improve diversification, redundancy, and system reliability are receiving strong political and financial backing.

## Regional Cooperation Outcomes

The 3SI provides a platform for coordinated infrastructure development across 13 EU Member States, enabling projects that would be difficult to deliver at a national level. Regional cooperation supports the development of cross-border transport corridors, integrated energy markets, and shared digital infrastructure. Projects with strong regional alignment tend to benefit from greater policy support, improved financing access, and lower long-term risk.

# 1.3 Highlights

**5**

Investments

**13**

Countries Covered

€ **1.1** billion

Committed Capital

€ **7.6** billion

Capital Mobilised

€ **9.4** billion

Cumulative GDP  
Impact

€ **2.3** billion

Cumulative Modelled  
Tax Revenues  
(2020-2035)

€ **5.6** billion

Combined Development  
Pipeline CAPEX  
(2020-2035)

**2.8x**

Fund OPEX  
Multiplier

**1,032** GWh

Annual Renewable  
Energy Generated

**12.5** m km

Annual Rail  
Freight Distance

**1,341** MWp

Renewable Energy  
Capacity

**10,643**

Average Annual Number  
of Jobs Supported

# 1.4 Portfolio at a Glance

By sector, the portfolio comprises two transport, two energy, and one digital infrastructure investment. To date, the Fund has invested in five infrastructure assets across CEE countries within its defined regional mandate, with the final portfolio expected to comprise six to seven assets.

Three Seas countries with current investment


**Energy Sector**




**R Power RENEWABLES**



**Energy Sector**



**ENERGY**





**Digital Sector**




**GREENENERGY DATA CENTERS**




**Transport Sector**




**BMF PORT BURGAS**



**Transport Sector**



**CARGOUNIT RENT YOUR WAY**



Fund size:

# € 1.1 billion

The Fund invests across three core infrastructure sectors:

**Transport**



**Energy**



**Digital**



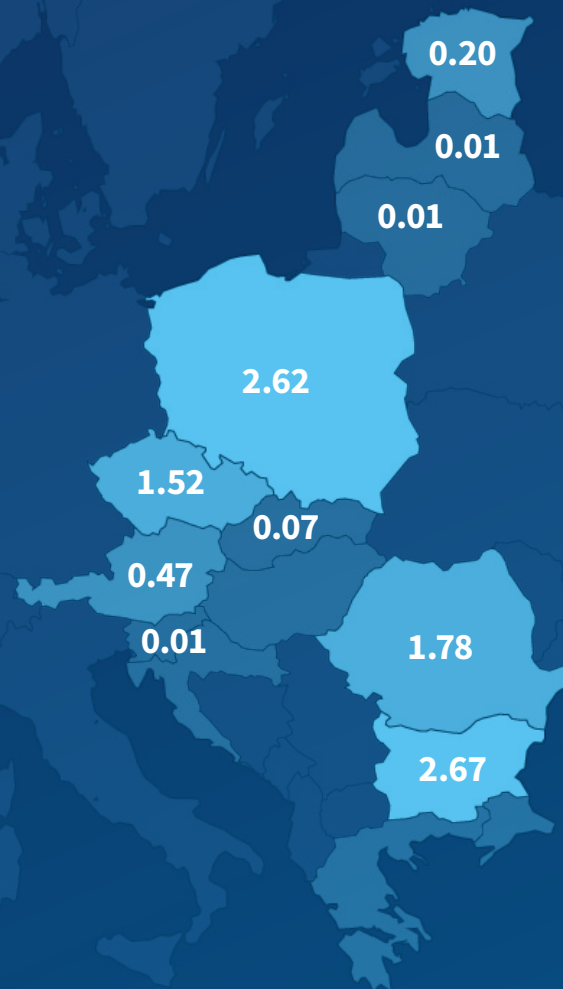
Investment focus on EU Member States in the Three Seas Region.

5 investments made to date.

# 1.5 Regional Contribution

**EY was commissioned to assess the economic effects enabled by 3SIIF through its support for five portfolio companies operating across 10 countries in which the Fund has invested. The results show that:**

- €1.1 billion invested by 3SIIF acted as a key enabling factor, allowing investments to be implemented and subsequently transformed into sustained economic activity.
- Over the period 2020-2035, these activities generated an impact on GDP of €1.7 billion in the 2020-2025 historical period, with a forecast cumulative impact of €9.4 billion (constant 2025 prices).
- By adopting a long-term analytical horizon, the assessment captures the lasting effects of infrastructure investments in transport, digital and energy sectors supported by 3SIIF, which materialise primarily during the operational phase.
- As a result, long-term operations drive GDP, employment (an average of 10.6 thousand jobs supported annually) and cumulative tax revenues of €2.3 billion, highlighting the Fund's role in enabling durable economic benefits rather than one-off investment effects.



€ **9.4** billion

Cumulative GDP impact across EU countries generated through combined CAPEX and OPEX activity

**10,634**

Average annual employment contribution across EU countries generated through combined CAPEX and OPEX activity

## Cumulative Economic Impact by Country (2020-2035)

As independently assessed by EY, the Fund's combined capital expenditure and operational activity over the 2020-2035 period is projected to generate cumulative GDP impacts across Austria, Bulgaria, Czechia, Estonia, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia – reflecting the breadth of the Fund's regional deployment. This analysis presents the estimated economic contribution attributable to 3SIIF activity in each country, expressed in 2025 prices and covering both the initial 2020-2025 period and the full projection horizon to 2035.

Country	Cumulative GDP Impact	of which 2020–2025	Avg. Annual Jobs Supported	Cumulative Tax Income Impact	of which 2020–2025
<b>Austria</b>	€472m	€85m	211	€94m	€15m
<b>Bulgaria</b>	€2,672m	€477m	4,186	€622m	€114m
<b>Czechia</b>	€1,521m	€244m	300	€252m	€40m
<b>Estonia</b>	€202m	€49m	218	€108m	€28m
<b>Latvia</b>	€12m	€2m	15	€4m	€1m
<b>Lithuania</b>	€7m	€1m	7	€2m	€0m
<b>Poland</b>	€2,625m	€599m	4,058	€710m	€157m
<b>Romania</b>	€1,778m	€215m	1,592	€462m	€54m
<b>Slovakia</b>	€73m	€13m	50	€17m	€3m
<b>Slovenia</b>	€9m	€2m	7	€2m	€0m
<b>Total</b>	<b>€9,370m</b>	<b>€1,686m</b>	<b>10,643</b>	<b>€2,273m</b>	<b>€413m</b>

# 2

## Overview

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## 2.1 The Fund

**3SIIF is cornerstoned by national institutions from across the Three Seas region, whose mandates include supporting infrastructure development within their national and regional markets on a commercially sustainable basis.** The Fund targets infrastructure projects across the thirteen EU Member States of the Three Seas region: Austria, Bulgaria, Croatia, Czechia, Estonia, Greece, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

**The Fund invests across three core infrastructure sectors:**

### Transport

- rolling stock
- ports
- intermodal terminals
- zero-emission mobility

### Energy

- solar photovoltaic (PV)
- battery energy storage systems (BESS)
- wind farms
- biomethane

### Digital

- data centres
- fibre
- telecom towers
- broadband networks

These sectors are characterised by long-term capital deployment, regulated or contracted revenue frameworks, and essential service provision. They have historically experienced significant underinvestment relative to the region's economic requirements, creating commercial opportunities for infrastructure capital aligned with development-oriented institutional investment mandates.

As of 31 December 2025, the Fund had deployed the majority of its committed capital across five investments domiciled in multiple Three Seas countries, with operations extending throughout the CEE region. With the investment period ending in mid-2026, the Fund is in the final stage of its deployment process under its governing documents.



## 2.2 Regional Infrastructure Landscape

### Three Seas Initiative

The 3SI is a presidential-level political forum launched in 2015 by the presidents of Poland and Croatia. Initially composed of 12 EU Member States between the Baltic, Adriatic and Black Seas, it expanded with the accession of Greece in 2023 to include 13 EU members. Ukraine and Moldova hold associate participating status, and the Initiative engages strategic partners such as the United States, Germany and the European Commission (with additional partners including Japan, Spain and Türkiye as of 2025).

The 3SI was established to accelerate economic development across Central and Eastern Europe by strengthening cross-border connectivity in transport, energy and digital infrastructure. It reflects the shared objective of participating countries to reduce longstanding infrastructure disparities with Western Europe, particularly the relative underdevelopment of north-south connectivity within the region. As of 2024, 143 connectivity projects have been prioritised within the programme, with a combined estimated investment value of approximately €111 billion, of which around 40% of funding has been secured and 14 projects have been completed.

The strategic relevance of the Initiative has increased since Russia's full-scale invasion of Ukraine in 2022, which reinforced the importance of resilient, diversified energy supply and stronger regional infrastructure integration across

CEE. In parallel, emerging transcontinental trade initiatives such as the India-Middle East-Europe Economic Corridor (IMEC) may further enhance the significance of north-south connectivity, potentially strengthening linkages between southern European ports, the CEE region and the Baltic Sea.

**As of 2024, 143 connectivity projects have been prioritised within the programme, with a combined estimated investment value of approximately €111 billion, of which around 40% of funding has been secured and 14 projects have been completed.**

### Regional Infrastructure Investment Gap

The scale of the infrastructure deficit in Central, Eastern and Southeastern Europe is well documented by international financial institutions. The IMF's 2020 study *Infrastructure in Central, Eastern, and Southeastern Europe: Benchmarking, Macroeconomic Impact, and Policy Issues* found that Central, Eastern and Southeastern Europe (CESEE) countries lag infrastructure levels in the EU15 by an estimated €1.15 trillion. Closing half of this gap by 2030 could require annual investment equivalent to roughly 3-8 % of GDP, according to illustrative IMF estimates. While coverage and quality vary by country, regional connectivity constraints are evident in transport networks: for example, road and rail journeys in parts of Central Europe can take substantially longer than comparable journeys in Western Europe, reflecting persistent infrastructure imbalances.

## Transport: TEN-T Network Integration

The revised TEN-T Regulation sets binding deadlines for completion of the core, extended core and comprehensive networks by 2030, 2040 and 2050, respectively, with European Commission estimates indicating around €500 billion is required to complete the core network alone. For CEE, TEN-T obligations are highly capital-intensive, with EU standards requiring electrified rail, higher service speeds (~100 km/h freight; 160 km/h passenger) and delivery of major cross-border projects including Rail Baltica, Via Carpatia and Budapest–Bucharest high-speed rail.

Under the 2021-2027 Multiannual Financial Framework, the Connecting Europe Facility (€25.8 billion) supports transport investment, but total funding needs exceed public resources, reinforcing demand for private capital, PPP structures and blended finance.

## Energy: Market Liberalisation and Renewable Capacity

Since 2019, the CEE energy sector has shifted rapidly under the EU's Fit for 55 package, REPowerEU, and heightened energy-security concerns. Renewables reached 47% of EU electricity generation in 2024 (34% in 2019), with coal falling below 10% by 2025 and CEE among the fastest-growing solar markets. Updated National Energy and Climate Plans (2023–2024) increased Three Seas wind and solar targets from 94 GW to 173 GW by 2030, with renewable shares rising to 60%.

Despite this, CEE holds only 7% of EU wind and 12% of solar capacity, suggesting major growth potential. Achieving targets requires large investment in grids, interconnection, offshore wind and storage, creating a substantial pipeline of investable infrastructure assets.

## Digital: Connectivity and Data Infrastructure

The EU Digital Decade Policy Programme 2030 sets targets for universal Gigabit connectivity and full 5G coverage by 2030, with European Commission analysis (WIK-Consult) estimating >€200bn of investment is required for fibre rollout, 5G densification and network upgrades.

CEE faces a disproportionate gap: despite progress in mobile and public-sector digitalisation, fibre penetration, standalone 5G and data-centre capacity remain below Western European levels, with the State of the Digital Decade (2025) highlighting persistent shortfalls and EU lag versus the US and China in cloud capacity.

Investment demand is driven by the Gigabit Infrastructure Act (2024), rising data use, data-sovereignty requirements and near-shoring, supporting strong growth in data centres, fibre and edge infrastructure.

## 2.3 Investment Summary

As the Fund approaches the end of its investment period in 2026, it has committed or deployed substantially all of its €1.1 billion capital base, with approximately €100 million remaining available for investment. To date, the Fund has invested in five infrastructure assets across Poland, Estonia, Bulgaria and other CEE markets within its defined regional mandate, with the final portfolio expected to comprise six to seven assets.

The portfolio currently comprises two transport investments, two energy investments, and one digital infrastructure investment, structured predominantly as equity positions in operational or near-operational assets.

Chart 1. Share of investments by geography

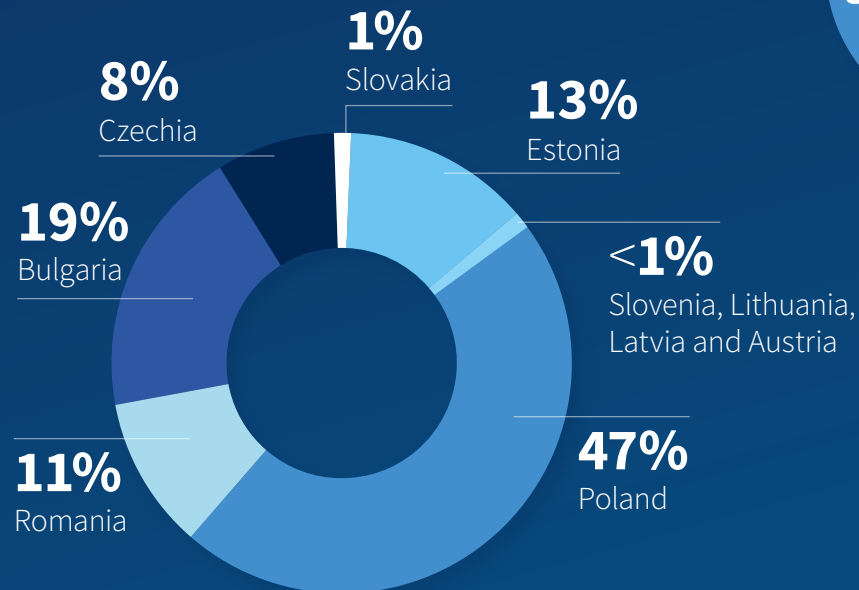
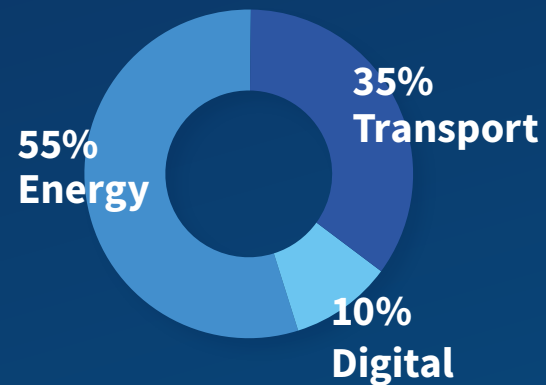


Chart 2. Share of investments by sector



BMF Port Burgas

## 2.4 Portfolio Snapshot

### Transport Infrastructure



#### BMF Port Burgas

Bulgarian port terminal operator focused on container and multi-cargo handling. The terminal features **deep-water berth of c.15.5 m**, enabling the handling of larger vessels, and benefits from rail connectivity supporting efficient intermodal operations. Its cargo profile includes containers, grains, liquids, and bulk cargo.

### Transport Infrastructure



#### Cargounit

Rolling stock leasing platform. The platform operates a fleet **exceeding 240 locomotives**, including more than 140 electric units, with technical availability above 95%. The fleet comprises multi-system locomotives certified for cross-border operations across European rail networks.

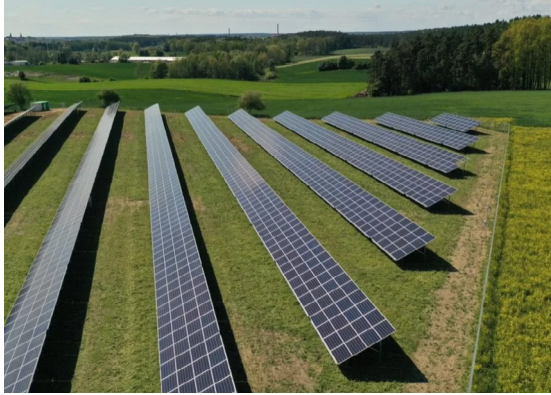
### Energy Infrastructure



#### Enery

Is a scaled multi-country renewable energy platform operating across 10 Central and Eastern European markets, with a strong position in utility-scale solar PV. As of 31 December 2025, the platform had **546 MW** of operating assets and 975 MW under construction, supported by a **9.5 GW greenfield development pipeline** of solar, wind, battery storage and hydro projects.

## Energy Infrastructure



### R.Power

PP (Power Plant) and developer (multi-country). The platform operates across multiple markets with assets in utility-scale PV and battery energy storage systems, totalling **795 MW operational capacity**, 570 MW under construction, and **32.0 GW in development** across EU jurisdictions. Revenue frameworks include power purchase agreements and contracts for difference where applicable.

## Digital Infrastructure

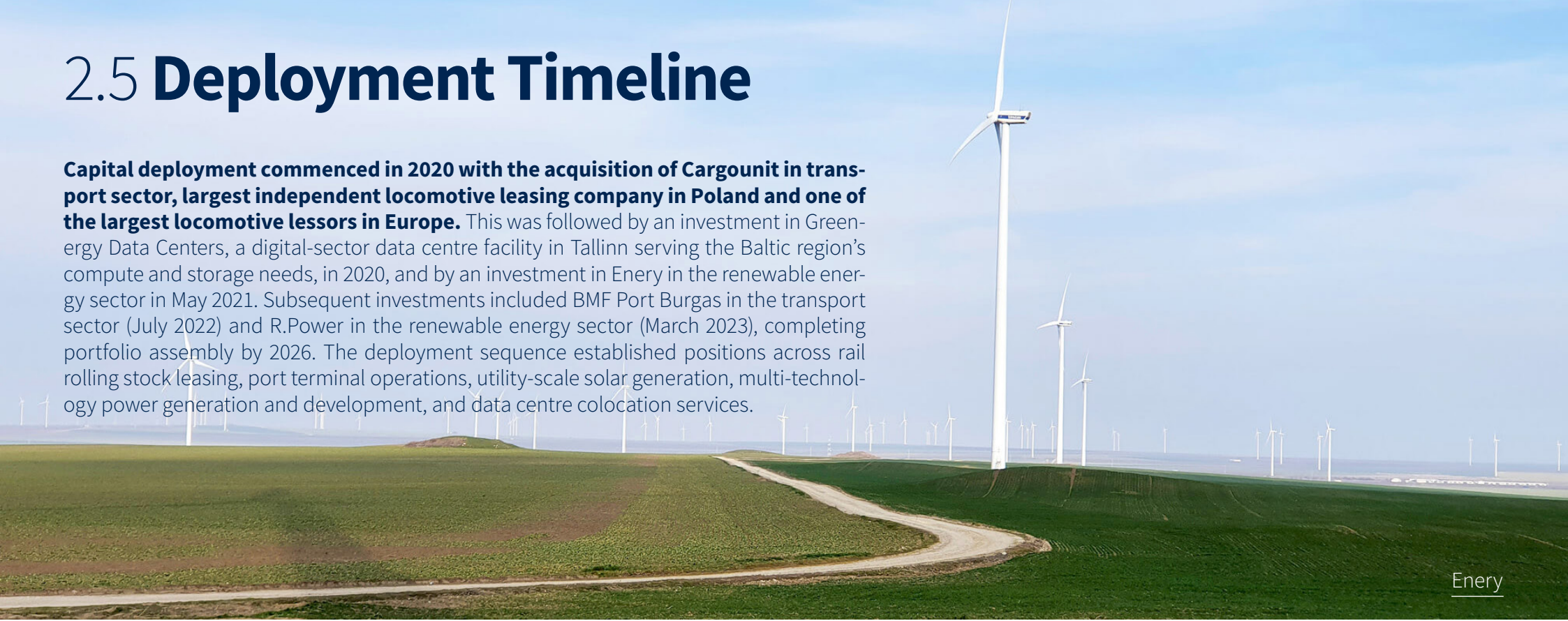


### Greenenergy Data Centers

Data centre platform (colocation). The facility is an EN-aligned data centre with campus **power of approximately 31.5 MW**, modular build-out design, carrier-neutral connectivity, and a PUE (Power Usage Effectiveness) target of approximately 1.2. The facility provides 14,500 m<sup>2</sup> of technical space with N+1 and 2N redundancy and carrier-neutral interconnection.

## 2.5 Deployment Timeline

**Capital deployment commenced in 2020 with the acquisition of Cargounit in transport sector, largest independent locomotive leasing company in Poland and one of the largest locomotive lessors in Europe.** This was followed by an investment in Greenergy Data Centers, a digital-sector data centre facility in Tallinn serving the Baltic region's compute and storage needs, in 2020, and by an investment in Energy in the renewable energy sector in May 2021. Subsequent investments included BMF Port Burgas in the transport sector (July 2022) and R.Power in the renewable energy sector (March 2023), completing portfolio assembly by 2026. The deployment sequence established positions across rail rolling stock leasing, port terminal operations, utility-scale solar generation, multi-technology power generation and development, and data centre colocation services.



Energy

### Key acquisitions



# 3

## Fund Objectives

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# 3.1 Reducing Infrastructure Gaps

## Transport Infrastructure

The thirteen 3SI countries encompass approximately 29% of EU territory and 25% of its population,<sup>1</sup> yet their rail freight infrastructure exhibits structural gaps relative to EU and Western European benchmarks. Three indicators define this gap: network electrification, freight modal split, and the trajectory of network size over time.

Electrification is the most acute deficit. The 3SI regional average of approximately 47–50% trails the EU average of 57.4% by seven to ten percentage points and falls substantially behind a Western European reference group (Germany, Belgium, France, Netherlands, Austria) at over 70%. The Baltic states – Lithuania (7.9%), Estonia (12.0%), Latvia (13.7%)<sup>2</sup> – are severe outliers, a legacy of Soviet-era diesel-dependent bulk commodity logistics. These networks are now structurally exposed following the withdrawal of Russian transit freight since 2022, which has driven sharp declines in Baltic rail modal share (Lithuania fell from 57.2% in 2013 to 31.7% in 2023; Latvia from 43.1% to 22.8%).

The share of rail freight in total inland freight transport exceeds the EU average of 17% in several 3SI countries, including Slovakia (30.1%), Lithuania (31.7%), Austria (29.1%), Slovenia (27.1%), and Hungary (24.9%),<sup>3</sup> reflecting industrial structure, landlocked geography, and historically invested core corridors.<sup>4</sup> These markets support the commercial case for modern, multi-system locomotive fleets capable of operating across borders without traction changes.

The investment thesis for a locomotive leasing business is reinforced by three structural enablers: the revised TEN-T Regulation (EU 2024/1679) mandates electrification and ERTMS (European Rail Traffic Management System) deployment by 2030 on core corridors; EU Cohesion and CEF co-financing underwrite a substantial share of the €111 billion 3SI project pipeline;<sup>5</sup> and near-shoring of

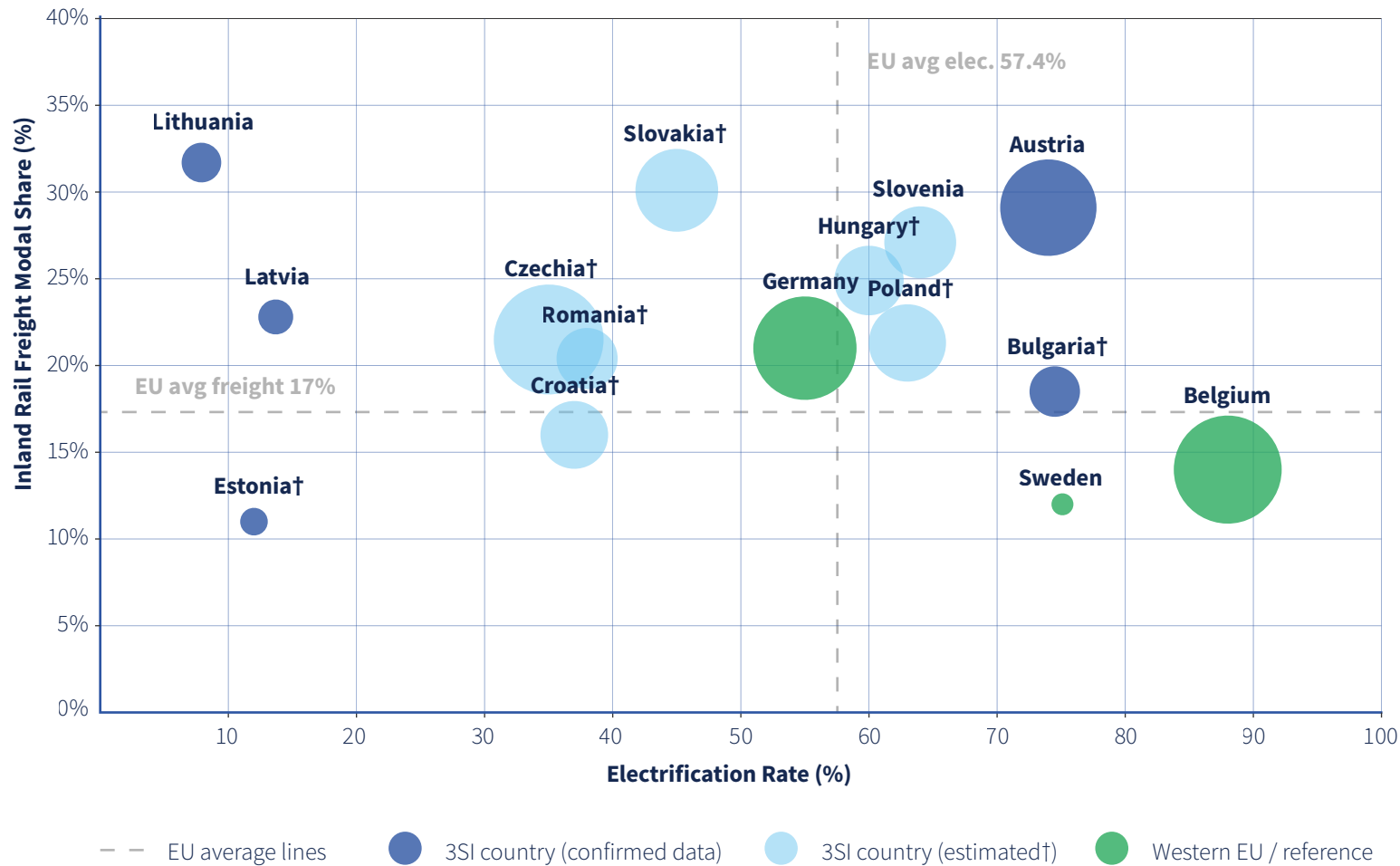
**Electrification is the most acute deficit. The 3SI regional average of approximately 47–50% trails the EU average of 57.4% by seven to ten percentage points and falls substantially behind a Western European reference group (Germany, Belgium, France, Netherlands, Austria) at over 70%.**

European manufacturing into Poland, Czechia, Slovakia, and Hungary generates new, durable freight flows. The gap between current diesel-dependent operations and the electrified, interoperable network envisioned by TEN-T creates sustained demand for modern rolling stock; precisely the demand a leasing platform is positioned to serve.

- 1 Three Seas Initiative. “About — Three Seas Initiative.” 3Seas.eu, official website. <http://three-seas.eu/about/>
- 2 Eurostat. “Characteristics of the Railway Network in Europe.” Statistics Explained, European Commission, Feb. 2025.
- 3 Eurostat. “Freight Transport Statistics — Modal Split.” Statistics Explained, European Commission, 2024–2025.
- 4 European Parliament and Council. Regulation (EU) 2024/1679 on Union Guidelines for the Development of the Trans-European Transport Network.
- 5 Three Seas Initiative. “Priority Projects — Status Report 2024.” 3Seas.eu. <https://3seas.eu/about/progressreport>

### Chart 3. Electrification rate vs. inland rail freight modal share – 3SI countries and EU reference points (2023)

Bubble size represents relative network density (m/km<sup>2</sup>). Confirmed Eurostat values shown; chart-derived estimates marked †. EU average lines shown for reference.



#### 3SI Electrification Gap

~7-10%

The 3SI region's railways are less electrified than the EU average.<sup>1</sup>

#### Rail Freight Modal Share Leaders

30.1%

Slovakia carries the highest share of inland freight by rail in the 3SI region.<sup>2</sup>

#### Baltic Modal Share Decline (2013-2023)

-25.5%

Baltic rail freight share fell sharply over the past decade.<sup>3</sup>

1 3SI regional average electrification ~47-50% vs. EU average 57.4% (Eurostat, 2023)

2 Slovakia 30.1%, Austria 29.1%, Slovenia 27.1%, Hungary 24.9%, EU inland average ~17% are confirmed Eurostat values (Eurostat, 2023)

3 Lithuania: 57.2% (2013) → 31.7% (2023); Latvia: 43.1% (2013) → 22.8% (Eurostat 2023)



BMF Port Burgas

## Regional Transport System Context – Ports

The Three Seas Initiative's thirteen Member States occupy a strategically dense logistics corridor, spanning three maritime basins and intersecting five TEN-T core corridors. Together, they represent approximately 110 million people generating €2.3 trillion in economic output. Despite this scale, their ports collectively handle only 350-400 million tonnes of seaborne freight – approximately 10–11% of EU volumes while accounting for roughly 25% of EU population.<sup>1</sup> This reflects a structural underrepresentation of maritime throughput relative to economic and demographic weight, rather than a uniform performance gap. Port development across the region is characterized by a clear multi-tier structure. A limited group of ports, such as Gdańsk, Koper and Constanța, have reached or exceeded the 1 million TEU threshold, supported by stronger corridor integration, broader hinterland reach and targeted long-term investment.<sup>2</sup>

3SI maritime zone - total freight

~375 Mt

The 3SI handles one in ten tonnes of EU seaborne freight, yet is home to one in four EU citizens

Below this level, a second tier of ports, particularly along the western Black Sea, remains structurally sub-scale, generally close to 300,000 TEU,<sup>3</sup> and embedded in feeder-based service patterns. This divide reflects network economics rather than geography alone. Lower-tier ports remain constrained by a combination of limited cargo aggregation, narrower hinterland reach, feeder-only container connectivity and underdeveloped rail-port integration, which together make it difficult to attract direct deep-sea calls or scale container flows meaningfully.

Liner shipping connectivity is the main constraint at the lower tier. Ports served only by feeders cannot attract direct deep-sea calls without sufficient cargo volumes, hinterland reach and rail integration. In this respect, DCT Gdańsk was a defining inflection point for the region: it demonstrated that a 3SI port could move beyond feeder dependence, attract regular deep-sea services and develop into a major container gateway, reshaping cargo flows previously routed through Western European hubs. Constanța reflects a different model. While located in the same Black Sea basin as many lower-tier ports, its scale is supported not only by port investment, but also by stronger inland connectivity, its role as a Danube gateway and, in recent years, Ukraine-related trade redirection. Accordingly, the

gap between leading and lower-tier ports is driven not by infrastructure alone, but by broader network economics - especially cargo aggregation, corridor positioning and hinterland depth.<sup>4</sup>

Lower-tier Black Sea TEU

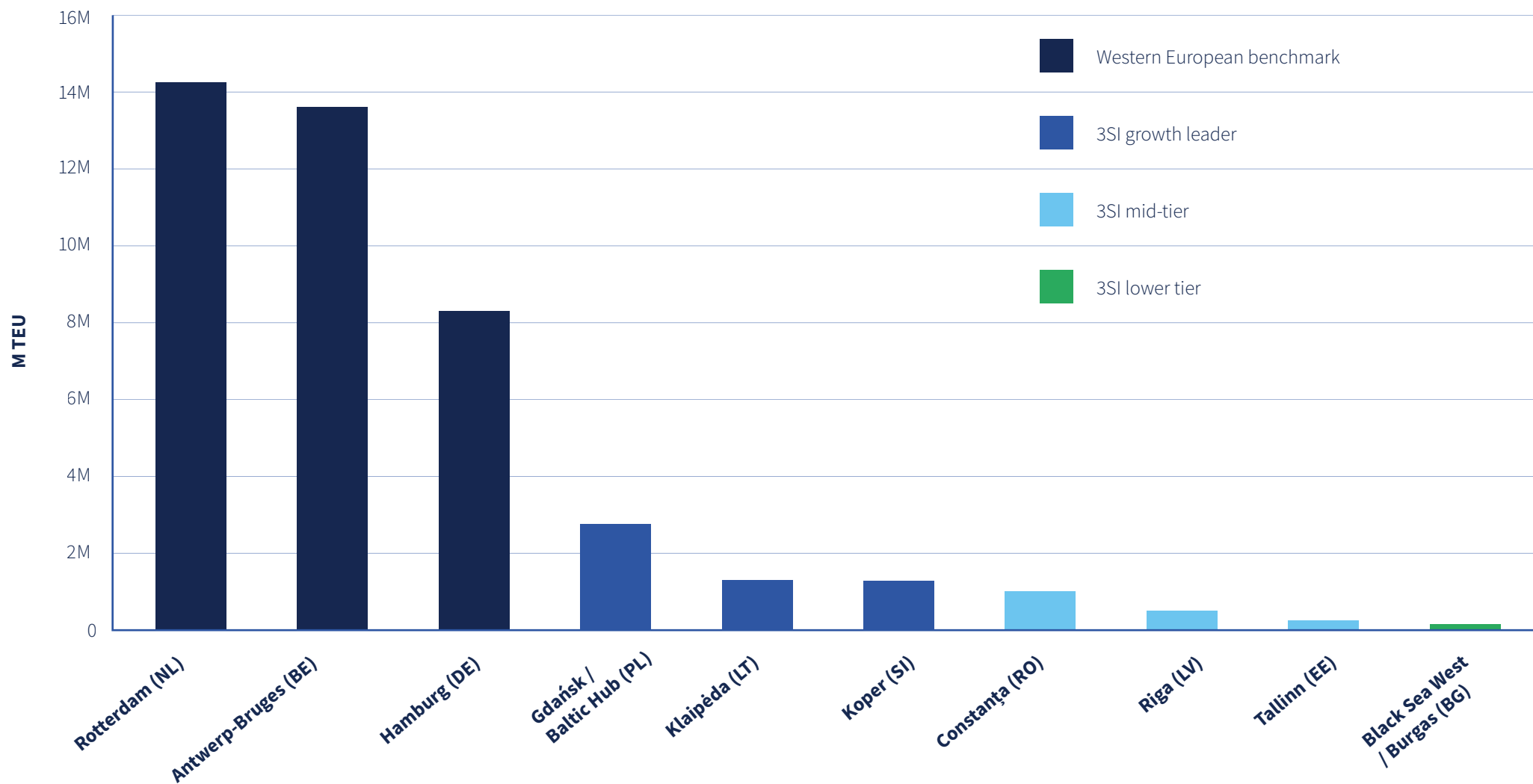
~305k TEU

shipping containers were handled by Bulgaria's two Black Sea ports in 2025

- 1 Calculated inference from Eurostat national maritime freight data. Eurostat, "EU Ports Handled 3.4 Billion Tonnes of Freight in 2023," DDN-20241126-1, 26 November 2024.
- 2 Gdańsk exceeded 2 million TEU by 2022–2023: GMK Center, "Polish Seaports Sharply Increased Cargo Handling in 2022–2023," February 2024. Koper exceeded 1 million TEU for the first time in 2022: Container News, "Luka Koper Becomes First Adriatic Port to Exceed 1 Million TEUs in a Single Year," January 2023. Klaipėda crossed 1 million TEU in 2022: 3SeasEurope.com, "Klaipėda Port – A Rapidly Growing Baltic Sea Hub," November 2023.
- 3 CEIC Data (citing UNCTAD), "Bulgaria Container Port Throughput, 2008–2025,"
- 4 GMK Center. "Polish Seaports Sharply Increased Cargo Handling in 2022–2023."

#### Chart 4. Container throughput – 3SI ports vs. Western European benchmarks (2025)

Thousand TEU. 3SI ports ranked by volume and shown with peer colours to replicate the original chart format.





## Portfolio Asset Characteristics – Cargounit

Cargounit is a rolling stock leasing platform operating across Central and Eastern Europe, providing locomotives to freight and passenger rail operators that require modern, interoperable traction without committing balance sheet capital to fleet ownership. Its commercial rationale sits directly within the structural conditions described on page 20; a region characterised by fragmented national operators, progressive electrification of TEN-T core corridors, and growing cross-border freight flows driven by near-shoring activity in Poland, Czechia, Slovakia, and Hungary.


The fleet comprises over 240 locomotives across electric, diesel, and multi-system categories. Multi-system units – capable of operating across the region’s co-existing electrification voltages and signalling regimes without traction change at borders – represent 16% of total fleet, directly addressing the interoperability deficit that characterises the regional rail network. The average fleet age is 24 years.

Cargounit’s locomotives are deployed primarily on TEN-T freight corridors – including the Baltic-Adriatic, North Sea-Baltic, and Rhine-Danube axes – where cross-border operation is structurally embedded in freight operator requirements. Customers include top freight and passenger rail operators, reflecting the fragmented market structure in which a growing number of licensed pri-

vate operators compete alongside incumbent national carriers, both relying on leased rather than owned traction.

The fleet’s geographic reach positions Cargounit to capture demand on two fronts simultaneously: the near-term replacement of legacy diesel fleets, particularly in the Baltic states and Southeastern Europe, and the medium-term electrification of routes where TEN-T mandates require ERTMS deployment and electrification by 2030.

Metric	Value
<b>Fleet Size</b>	>240
<b>Modern Fleet Share</b>	47%
<b>Core Operating Markets</b>	Poland
<b>Typical Lease Term</b>	4 years
<b>Share of electric locomotives</b>	68%



## BMF Port Burgas

### Portfolio Asset Characteristics – BMF Port Burgas

BMF Port Burgas operates terminal infrastructure at the Port of Burgas on Bulgaria's Black Sea coast under two long-term concession agreements covering Terminal Burgas East 2 and Terminal Burgas West. Within the regional port system described on page 23 Burgas is positioned as a medium-scale, multi-cargo gateway port operating within a feeder-based container network, while retaining the physical characteristics to support further scaling over time, including the ability to accommodate deep-sea vessels.

BMF Port Burgas operates as a diversified multi-cargo platform spanning containers, dry bulk, liquid bulk, general cargo and project cargo. In 2025, it handled more than 7 million tonnes of cargo, including over 150,000 TEU, supporting operational flexibility and resilience across cargo cycles.

The asset comprises two terminals with a combined footprint of over 100 hectares, 16 berths, five piers and total quay length of 3,594 metres. Terminal Burgas East 2 has a maximum draft of 14.6 metres, while Terminal Burgas West reaches 15.5 metres, giving the port a relatively strong physical platform compared with regional peers.

From a network perspective, BMF Port Burgas remains primarily integrated into feeder shipping systems, limiting its ability to originate larger-scale container flows. However, its deep-water access, expansion space and rail connectivity provide a foundation for strengthening its role within regional logistics corridors, including through targeted expansion into South Balkan hinterland markets.

Since 3SIIF's investment in 2022, BMF Port Burgas has implemented a targeted investment programme exceeding €100 million, including upgrades to berth infrastructure, rail connectivity and bulk handling facilities. This has been further supported by EU-backed funding, notably the €40 million Connecting Europe Facility grant under the REBIRTH28 project for the development of a deep-sea container berth, alongside additional rail upgrades in 2025.

Its growth case rests on continued investment in terminal efficiency, capacity expansion and hinterland connectivity, combined with the gradual development of cargo flows across South Balkan and regional logistics corridors.

Metric	Value
<b>Annual throughput</b>	>7M T annual cargo volume
<b>Container throughput</b>	>150k TEUs
<b>Number of berths</b>	16
<b>Maximum draft</b>	15.5m
<b>Primary cargo types</b>	containers, dry bulk, liquid bulk, general cargo, project cargo
<b>CAPEX spent since acquisition</b>	>€100m CAPEX

# Energy Infrastructure

## Regional Energy System Context

The thirteen countries of the 3SI occupy a strategically pivotal position in the European energy transition, sitting at the intersection of the EU's decarbonisation mandate, the post-2022 energy security imperative, and a material gap between existing infrastructure and the requirements of a clean power system.

In 2025, renewables surpassed coal in 3SI electricity generation for the first time, reaching 42%;<sup>1</sup> yet the region continues to trail the EU average of 47%.<sup>2</sup> In its most carbon-intensive markets the divergence is more acute: Poland generates 51% of its electricity from coal with no nuclear baseload, operating at nearly three times the EU average carbon intensity. By 2025 Poland generated around 65% of its electricity from fossil fuels, compared with 41% in Czechia and 27% in Bulgaria, implying a materially greater transition challenge for the Polish energy system.

These structural characteristics should not be viewed as legacy anomalies, but rather as defining the investable opportunity set for energy transition and system modernisation.<sup>3</sup>

Four structural drivers underpin the transition investment thesis: replacement generation capacity as coal fleets retire under EU Fit for 55 obligations; grid infrastructure redesigned for distributed and variable renewables; storage and flexibility to manage rising intermittency; and strategic interconnection to reduce residual import dependen-

cy, particularly on Russian pipeline gas in Hungary and Slovakia.<sup>4</sup>

The Baltic States' completion of synchronisation with the Continental European grid in February 2025 - severing the BRELL ring - represents a landmark structural shift and a direct catalyst for Baltic offshore wind and interconnector investment.<sup>5</sup> Ember's modelling projects 3SI countries can deploy 200 GW solar, 60 GW onshore wind and 23 GW offshore wind by 2030, potentially raising the regional renewable electricity share from 39% to 67%. The policy architecture - EU Green Deal, REPowerEU, TEN-E PCIs, Connecting Europe Facility - substantially de-risks long-dated infrastructure allocation in this region.

- 1 Eurostat, Net electricity generation by type of fuel - monthly data (2025), nrg\_cb\_pem
- 2 Ember, European Electricity Review 2026, <https://ember-energy.org/latest-insights/european-electricity-review-2026/>
- 3 Carbon Data Intelligence (2025), <https://www.carbondi.com/#electricity-factors/>; PwC European Carbon Factor 2025, <https://www.pwc.fr/en/publications/series/carbon-factor.html>
- 4 Pulaski Foundation, Pulaski Policy Paper No. 9-10: 10 Years of the Three Seas Initiative. What's Next?, October 2024. [pulaski.pl/en/10-years-of-the-three-seas-initiative-whats-next/](https://pulaski.pl/en/10-years-of-the-three-seas-initiative-whats-next/)
- 5 Ember, European Electricity Review 2025, January 2026. [ember-energy.org/latest-insights/european-electricity-review-2025/](https://ember-energy.org/latest-insights/european-electricity-review-2025/)
- 6 Eurostat, Net electricity generation by type of fuel - monthly data (2025), nrg\_cb\_pem
- 7 Carbon Data Intelligence (2025), <https://www.carbondi.com/#electricity-factors/>; PwC European Carbon Factor 2025, <https://www.pwc.fr/en/publications/series/carbon-factor.html>
- 8 €570B+ infrastructure funding shortfall. Observer Research Foundation / 3SI 10th Anniversary Analysis, December 2025. Order-of-magnitude estimate only. 3SI priority project pipeline (€111B, ~40% funded): CRS, "The Three Seas Initiative," updated 2025.

3SI Renewable electricity production share

**42%**

The region's electricity is one-third renewable, behind the EU average of 44%.<sup>6</sup>

Poland Power Sector Carbon Intensity

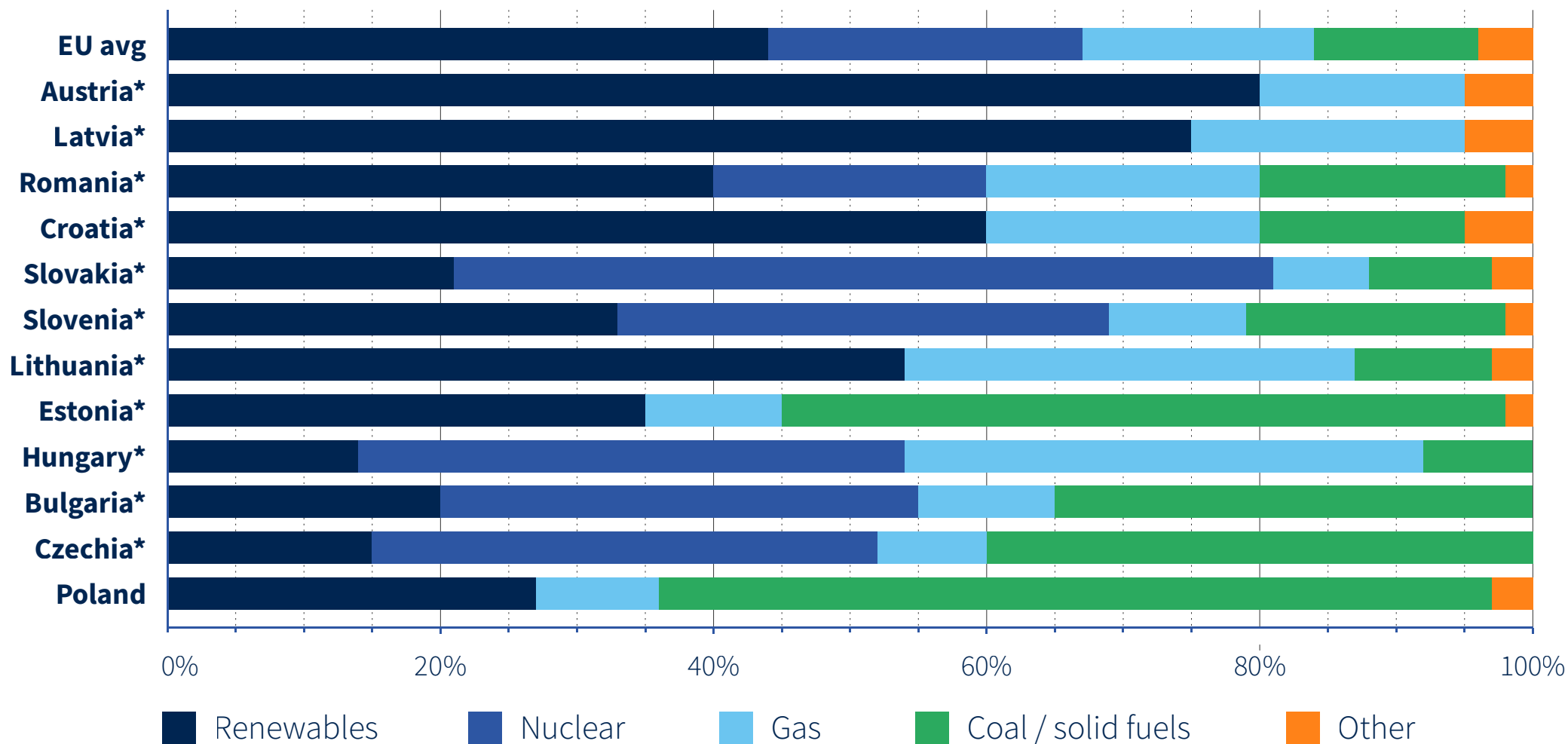
**643 gCO<sub>2</sub>e/kWh**

Poland's power sector emits nearly three times the EU average, driven by coal.<sup>7</sup>

Estimated 3SI Infrastructure Funding Shortfall

**> €570 bn**

The estimated investment gap in regional infrastructure - over half a trillion euros.<sup>8</sup>

**Chart 5.** Generation mix – selected 3SI countries vs EU average<sup>1-5</sup>

1 Country-level splits should be viewed as estimates only. Hungary, Slovakia, Slovenia and Lithuania figures proportionally scaled to sum to 100% for presentation purposes.

2 Ember. European Electricity Review 2024. [ember-energy.org/latest-insights/european-electricity-review-2024/](https://ember-energy.org/latest-insights/european-electricity-review-2024/)

3 Ember. Global Electricity Review 2024. [ember-energy.org/latest-insights/global-electricity-review-2024/](https://ember-energy.org/latest-insights/global-electricity-review-2024/)

4 Ember. "Empowering Central and Eastern Europe: From Coal to Renewables." April 2024. [ember-energy.org/latest-insights/central-and-eastern-europe-from-coal-to-renewables/](https://ember-energy.org/latest-insights/central-and-eastern-europe-from-coal-to-renewables/)

5 Eurostat. Shedding Light on Energy in Europe – 2025 Edition. European Commission, 2025. [ec.europa.eu/eurostat/web/interactive-publications/energy-2025](https://ec.europa.eu/eurostat/web/interactive-publications/energy-2025)

## Portfolio Asset Characteristics – Energy

Enery is renewable energy platform operating across Central and Eastern Europe, developing and operating solar and wind generation assets in markets where the pace of coal retirement, the scale of replacement capacity required, and the availability of EU co-financing create a structurally supportive environment for independent power producers. Its operating footprint spans 10 countries across the CEE region, positioning it across markets that collectively face both acute decarbonisation pressure and a significant policy-backed investment pipeline.

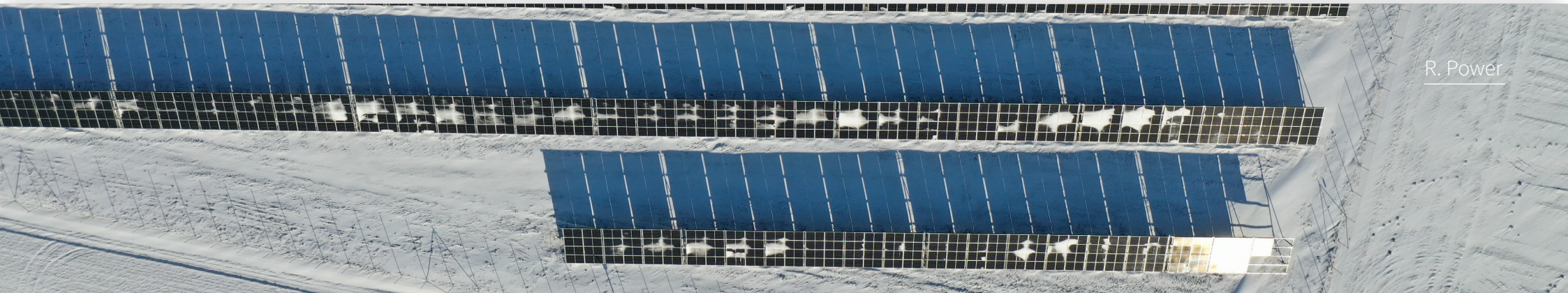
The platform's installed capacity stands at 546 MW, with a development pipeline of 9.5 GW, of which 3.2 GW is grid connected. The technology mix has expanded beyond solar to include wind, hydro and battery storage. Revenue is derived from a mix of merchant exposure, Power Purchase Agreements, Contracts for Differences and green certificate regimes, depending on the asset and market, with more than 70% of current revenues contracted.

The commercial context for Enery's pipeline is directly shaped by the conditions described on page 27 Poland still generates 61% of its electricity from coal and, while it has pledged to phase out coal by 2049, remains one of the most coal-dependent power systems in the region. Czechia generates 40% of its electricity from coal and plans to phase it out by 2033, while Bulgaria has also indicated a target date of 2038. As these fleets retire, replacement capacity must be sourced domestically or via interconnection; a structural demand signal for in-region renewable development that is reinforced by REPowerEU targets and TEN-E priority project designation. Ember projections cited on page

27 indicate the region can deploy 200 GW of solar and 60 GW of onshore wind by 2030, implying a sustained multi-year build-out of which Enery's pipeline represents a positioned share.

Since acquisition, Enery has scaled materially through a combination of operational asset acquisitions and pipeline development. Power in operation increased from 85 MW at acquisition to 546 MW by Q4 2025, while the platform also had 975 MW under construction and operations across 10 countries in the region. Grid integration and permitting pace remain the principal execution risks at asset level, consistent with the structural constraints identified regionally.

Metric	Value
<b>Installed capacity</b>	546 MW
<b>Development pipeline</b>	9.5 GW
<b>Operating countries</b>	10 countries across CEE
<b>Technology mix</b>	Solar, wind, hydro and battery storage
<b>Annual renewable energy generated</b>	447 GWh



## Portfolio Asset Characteristics – R.Power

R.Power is a solar-focused renewable energy developer and operator with a primary presence in Poland and Romania, two markets that together define the near-term scale of the 3SI energy transition. Poland's near-total reliance on coal generation and Romania's combination of strong irradiation and recent grid investment create differentiated but complementary demand for utility-scale solar capacity - precisely the profile R.Power's platform is designed to serve.

Installed capacity across the portfolio stands at 795 MW with a pipeline of 32.0 GW in active development. Solar PV accounts for 40% of the development portfolio, with BESS ( Battery Energy Storage System) and wind comprising the remainder. Offtake is structured through PPA, CfD and merchant, with more than 70% revenue contracted.

Romania's 22.5% throughput growth in 2023 – referenced in the port system context – reflects a broader acceleration in economic activity and energy demand that underpins R.Power's in-country development programme. Poland's position as the region's largest power market, together with its continued dependence on coal notwithstanding a declared 2049 phase-out target and the strategic imperative to reduce exposure to Russian gas, supports sustained demand for domestic renewable capacity, which corporate and industrial offtakers are increasingly willing to secure directly through PPAs.

The Baltic grid synchronisation completed in February 2025 is a secondary but relevant structural signal: as the region's energy security architecture is re-drawn around Continental European standards, the investability of long-dated renewable assets in formerly peripheral markets improves materially.

Metric	Value
<b>Installed capacity</b>	795 MW
<b>Development pipeline</b>	32.0 GW
<b>Operating countries</b>	Poland, Romania, Germany, Portugal, Italy and Spain
<b>Technology mix</b>	PV & BESS
<b>Annual renewable energy generated</b>	585 GWh

# Digital Infrastructure

## Regional Digital Infrastructure Context

The thirteen 3SI countries represent approximately one-fifth of EU GDP and 120 million people, yet their data centre footprint is a fraction of what their economic weight would imply. The FLAP-D markets alone account for approximately 45% of EMEA's operational capacity<sup>1</sup> – London at ~1,189 MW, Frankfurt at ~745 MW live<sup>2</sup> - while the entire CEE colocation market (excl. Russia) is estimated at 300-350 MW total, serving a comparable population to the UK. On a per-capita basis this implies approximately 2–3 W per capita against an EU average of ~27 W and ~85 W for the London metro.<sup>3</sup> Warsaw is the clear regional leader at ~200 MW, growing at ~15.7% annually and projected to triple to ~500 MW by 2030<sup>4</sup>; all other 3SI markets remain nascent.

Compounding the capacity gap, Poland is the only 3SI country with full-scale hyperscaler cloud regions from both Microsoft Azure (Poland Central, opened April 2023) and Google Cloud (since 2021).<sup>5</sup> Austria holds a single Azure region. The remaining ten countries have none - forcing enterprises to route cloud traffic to Frankfurt, Amsterdam, or London, adding latency and creating GDPR data residency complexity. On connectivity, the picture is more nuanced: Romania leads the entire EU in FTTH fibre coverage (~96.5% homes passed)<sup>6</sup> and the EU39 average stands at ~69.9%, yet most 3SI countries underperform on take-up. Austria is an anomaly – coverage of only ~49.7% and take-up of ~24.7% despite high national wealth.<sup>7</sup> 5G coverage inverts the fibre story: Romania and Latvia fall

below 55% household coverage, among the EU's worst, against an EU average of ~89-94%.<sup>8</sup>

Power constraints in FLAP-D markets are accelerating the investment case. Frankfurt land is described as “virtually exhausted”;<sup>2</sup> Dublin, Amsterdam, and London face binding grid limits. CEE countries with available headroom and renewable pipelines – Romania, Bulgaria, Estonia, Latvia, Lithuania – are structurally positioned to absorb overflow demand. Poland grew solar capacity 37% in H1 2024; Hungary 49%.<sup>9</sup> EU policy reinforces the tailwind: the Digital Decade 2030 programme, the ~€3 billion CEF Digital facility, and the 143-project 3SI pipeline (total estimated value €111 billion) create co-investment structures and mandate edge node deployment targets most 3SI countries are not yet on track to meet.<sup>10, 11</sup>

1 Cushman & Wakefield. “EMEA Data Centre H1 2025.” Sept. 2025.

2 Prime East. “German Data Center Market.” Oct. 2025.

3 Mordor Intelligence / Araner. “Data Centers in Europe.” 2024

4 LL. “EMEA Data Centre Report Q2 2025.”

5 Microsoft News Centre Europe. 26 Apr. 2023; Data Center Dynamics, 2023

6 Fierce Network. “Romania beats Germany and Austria in fiber penetration.” 3 Jul. 2024.

7 Deepomatic. “FTTH/B Market Panorama 2025.”

8 Euronews. “5G in Europe.” 3 Sept. 2024

9 New Eastern Europe. “2025: the year of infrastructure investment in CEE.” Mar. 2025.

10 Digital Skills and Jobs Platform. “State of the Digital Decade 2023.”

11 Three Seas Initiative. “Priority Projects – Status Report 2024.”

CEE est. data centre  
capacity per capita

~2-3 W

Ten times less computing  
power per person than the  
EU average

3SI countries with  
a hyperscaler cloud region

1 of 13

Poland only remaining 3SI  
countries have none

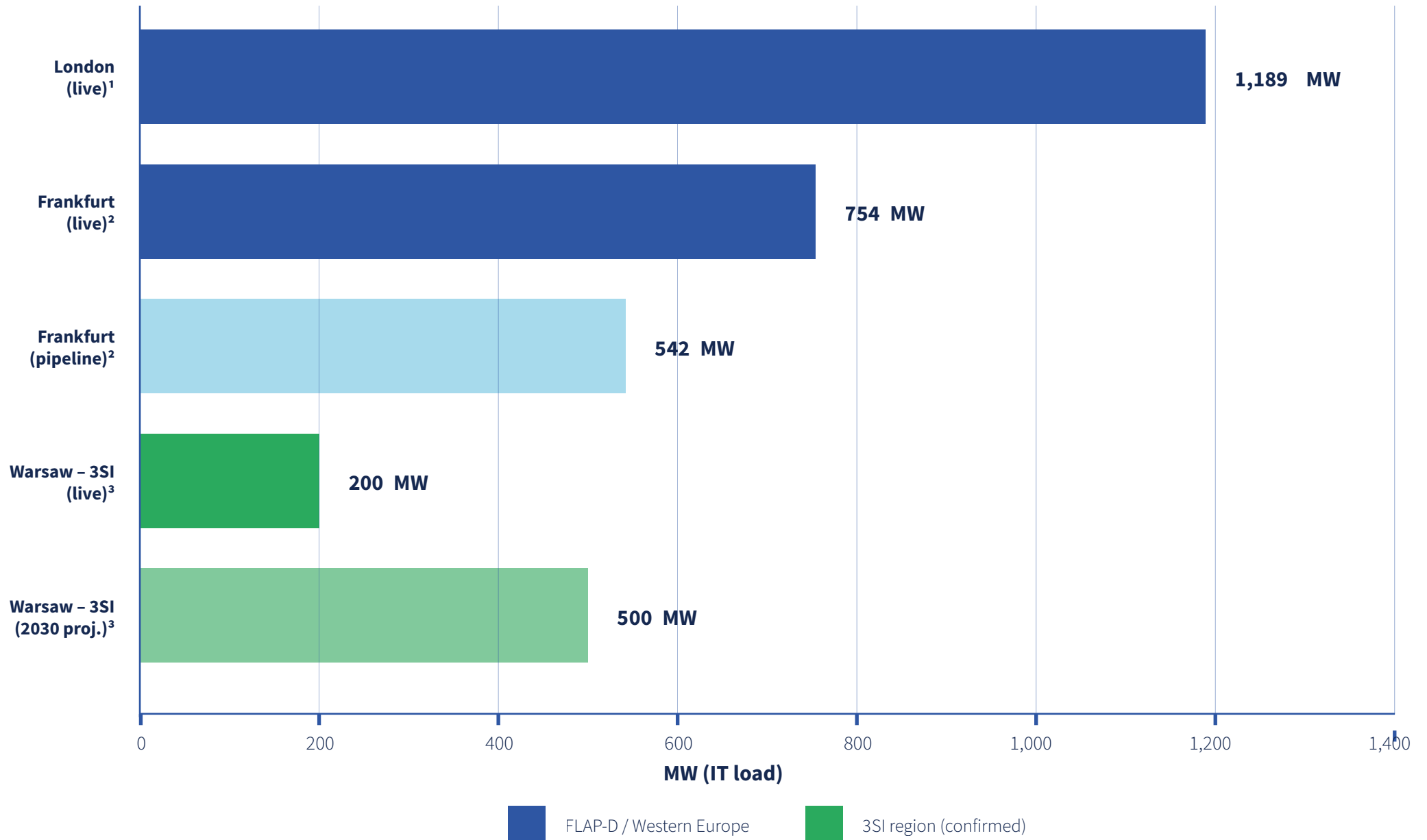
European colocation mar-  
ket - projected 2030 value

\$ 35.7 bn

Market nearly four times  
larger in six years; CEE  
currently underrepresented

### Chart 6. Data centre operating capacity – confirmed figures only (MW IT load)

Primary-sourced values only. 3SI markets without a confirmed MW figure are excluded.





## Portfolio Asset Characteristics – Greenergy Data Centers

Greenergy Data Centers' geographic position – within the EU and NATO perimeter, connected to the Continental European grid following the Baltic synchronisation completed in February 2025, and adjacent to markets with acute data residency and latency constraints – places it within a structural demand environment that the regional context described on page 31 identifies as among the most supply-constrained in Europe.

The commercial rationale for a data centre asset in this location is anchored in two conditions identified in on page 31. First, the FLAP-D capacity constraint: Frankfurt land is described in that section as virtually exhausted, with Dublin, Amsterdam, and London facing binding grid limits. Overflow demand is actively seeking markets with available power headroom and renewable supply; conditions Estonia, with its Baltic wind resource and post-BRELL grid integration, is positioned to satisfy. Second, the data residency gap: of the thirteen 3SI countries, only Poland hosts full-scale hyperscaler cloud regions from both Microsoft Azure and Google Cloud. The remaining ten – including Estonia – force enterprises to route cloud workloads to Frankfurt or Amsterdam, generating latency and GDPR data residency complexity that a local colocation facility directly addresses.

Greenergy Data Centers' customer base comprises enterprise with 191 racks in operations and an occupancy rate of 73%. Revenue is contracted on a colocation basis.

Estonia's broader infrastructure profile – EU-leading digital governance, established connectivity to Nordic and Western European backbone networks, and a renewable energy pipeline supported by Baltic offshore wind development – provides the site-level operating context within which Greenergy Data Centers' capacity expansion is assessed. The February 2025 grid synchronisation is a material structural improvement, reducing the energy security risk that previously attached to Baltic infrastructure assets and improving the investability of long-dated capacity commitments in the market.

Metric	Value
<b>Total IT power capacity</b>	31.5 MW
<b>Operational capacity</b>	2 MW
<b>PUE</b>	1.62
<b>SLA</b>	100%
<b>Operational racks</b>	191

## 3.2 Reducing Infrastructure-Related Costs

### Infrastructure as a driver of cost efficiency

In the Three Seas region, infrastructure is not only a development challenge; it is also a cost challenge. Historic underinvestment in north-south transport links, energy interconnections and digital backbone assets has translated into longer travel times, weaker regional integration and a structurally higher cost base for firms operating across Central and Eastern Europe.<sup>1</sup> For 3SIF, this is the core relevance of infrastructure investing: the Fund does not simply add capacity, but helps reduce the frictions that make the region less efficient than it could be. In that sense, reducing infrastructure-related costs should be understood as a system-level outcome of better connectivity, stronger interoperability and more modern infrastructure.

### Energy: lowering system costs through integration

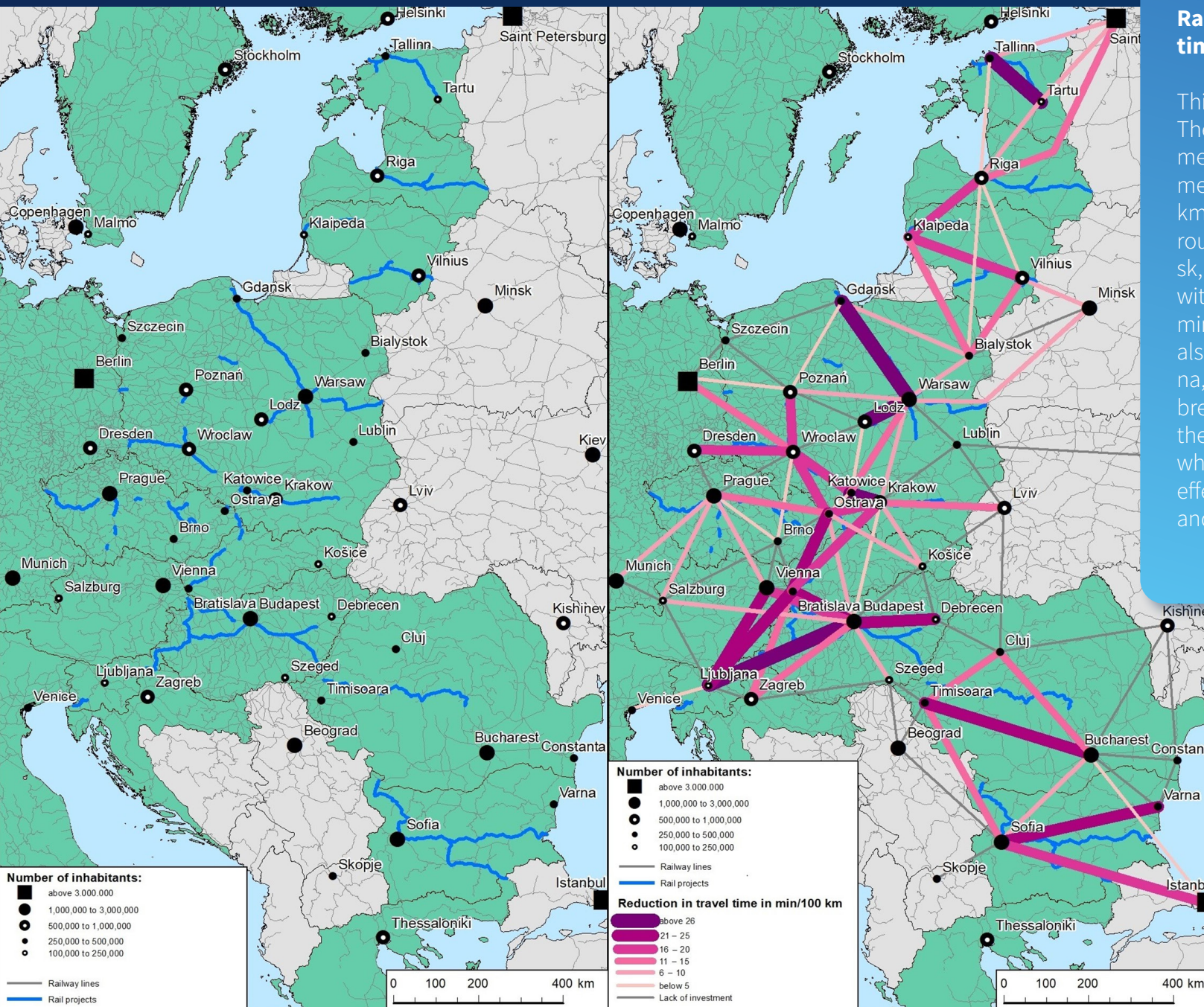
In energy, the cost-efficiency case rests on the quality of interconnection and market integration. Recent evidence from **24 EU electricity markets** shows that shared infrastructure and stronger interconnection support price convergence, market integration and greater resilience across the Union.<sup>2</sup> In particular, the study finds that highly interconnected market clusters display more stable price dynamics, suggesting that grid investment and cross-border integration improve market efficiency and reduce the cost of balancing the system. For the Three Seas region, where energy security and affordability remain closely tied to infrastructure quality, this reinforces the case that investments in energy assets and networks are not only capacity-enhancing but also cost-reducing.

### Digital: reducing transaction and connectivity frictions

Digital infrastructure affects costs through a different channel, but with a similar outcome. Evidence from the Organisation for Economic Co-operation and Development (OECD) shows that a **1%** increase in digital connectivity is associated with a **0.1%** reduction in international trade costs and a **1.5%** increase in international trade.<sup>3</sup> The same research also shows that the trade-cost-reducing effect of digital connectivity has become materially stronger over time, and that digital connectivity and digital policies matter particularly strongly for emerging economies. For the Three Seas region, this supports the view that investments in data infrastructure, connectivity and digital backbone assets are not only growth-enabling, but also cost-efficiency-enhancing, because they lower the frictions associated with trade, coordination and information flows.

### Transport: where cost efficiency becomes visible

Transport makes the cost story most tangible. One of the defining infrastructure weaknesses of the Three Seas region is the underdevelopment of north-south routes relative to east-west links. The practical consequence is visible in travel times: SpotData shows that, over a comparable distance of around 2,500 km, travel from Tallinn to Constanța takes around 32 hours by car and around 3.5 days by train, whereas the Gothenburg-Barcelona corridor takes around 24 hours by car and just over one day by train. This gap is a direct illustration of infrastructure-related cost in the region: time lost, bottlenecks preserved and logistics made less efficient.



## Rail investment and change in rail travel time per 100 km.

This is also why map above is important. The map shows not only where rail investment took place, but where it translated into measurable reductions in travel time per 100 km<sup>4</sup>. The strongest effects were recorded on routes such as Warsaw-Lodz, Warsaw-Gdansk, Cracow-Katowice and Tallinn-Tartu, each with travel-time reductions of more than 25 minutes per 100 km. Significant gains were also observed on routes including Sofia-Varna, Bucharest-Timisoara, Budapest-Debrecen and Vilnius-Klaipeda. In other words, the regional evidence shows clearly that where transport infrastructure is upgraded, effective distance falls, accessibility improves and logistics become more efficient.

- 1 SpotData, Perspectives for infrastructural investments in the Three Seas region: A Special Report
- 2 Stanciu, C. V. and Mitu, N. E. (2025), "Price Behavior and Market Integration in European Union Electricity Markets: A VECM Analysis", *Energies*, 18(4), 770.
- 3 López-González, J., Sorescu, S. and Kaynak, P. (2023), Of Bytes and Trade: Quantifying the Impact of Digitalisation on Trade, OECD Trade Policy Paper No. 273.
- 4 Komornicki, T. and Goliszek, S. (2023), "New Transport Infrastructure and Regional Development of Central and Eastern Europe," *Sustainability*, 15, 5263.

## What this means for 3SIF

For 3SIF, the implication is straightforward. The Fund invests in exactly those parts of the regional infrastructure system where the cost penalty of underdevelopment has historically been the greatest and where improvements in quality, connectivity and interoperability generate the clearest efficiency gains. The broader regional literature underlines both the scale of the need and the direction of travel: stronger north-south links, better electricity market integration and improved digital connectivity are all associated with lower frictions and stronger competitiveness in the Three Seas region. Against that backdrop, the Fund's portfolio can be understood as a practical response to a well-documented regional problem. It helps close infrastructure gaps in sectors where lower frictions mean lower costs.

In that sense, reducing infrastructure-related costs is not only an objective of 3SIF; it is a result that is well aligned with the empirical evidence on how infrastructure improves efficiency across the region.

**The broader regional literature underlines both the scale of the need and the direction of travel: stronger north-south links, better electricity market integration and improved digital connectivity are all associated with lower frictions and stronger competitiveness in the Three Seas region.**



## 3.3 Security, Resilience & Independence



### How the portfolio supports resilient infrastructure systems

Infrastructure systems in Central and Eastern Europe remain characterised by historical under-investment in north-south transport corridors, uneven development of domestic energy generation capacity, and limited availability of modern digital infrastructure in some markets. Assets that are capable of serving more than one country, or that form part of cross-border supply chains, may contribute to improved system resilience by increasing redundancy, diversification, and interoperability. The portfolio therefore includes assets whose operations extend beyond a single domestic market or that support regional connectivity between Member States.

Resilience in infrastructure systems can arise from several characteristics, including diversification of energy supply sources, the availability of alternative transport routes, localised digital capacity, and the presence of long-term contractual arrangements that support continuity of service. Because infrastructure networks are inherently interconnected, investments in one country may support the functioning of wider regional systems where assets are designed to operate across borders or serve international users.

### Energy

Enery and R.Power develop and operate solar photovoltaic generation assets in several EU Member States, including Poland, Romania, Czechia, Slovakia, and other CEE markets. These assets form part of national electricity systems that have historically relied on coal, gas, and nuclear-fired generation, although the status of individual projects may vary by country.

Solar photovoltaic generation relies on a domestic energy resource and does not require imported fuel and therefore may contribute to diversification of the electricity supply mix. Where solar PV capacity supplements or replaces gas-fired generation, it may reduce the relative share of electricity dependent on imported natural gas, depending on the scale of installed capacity within the national generation mix.

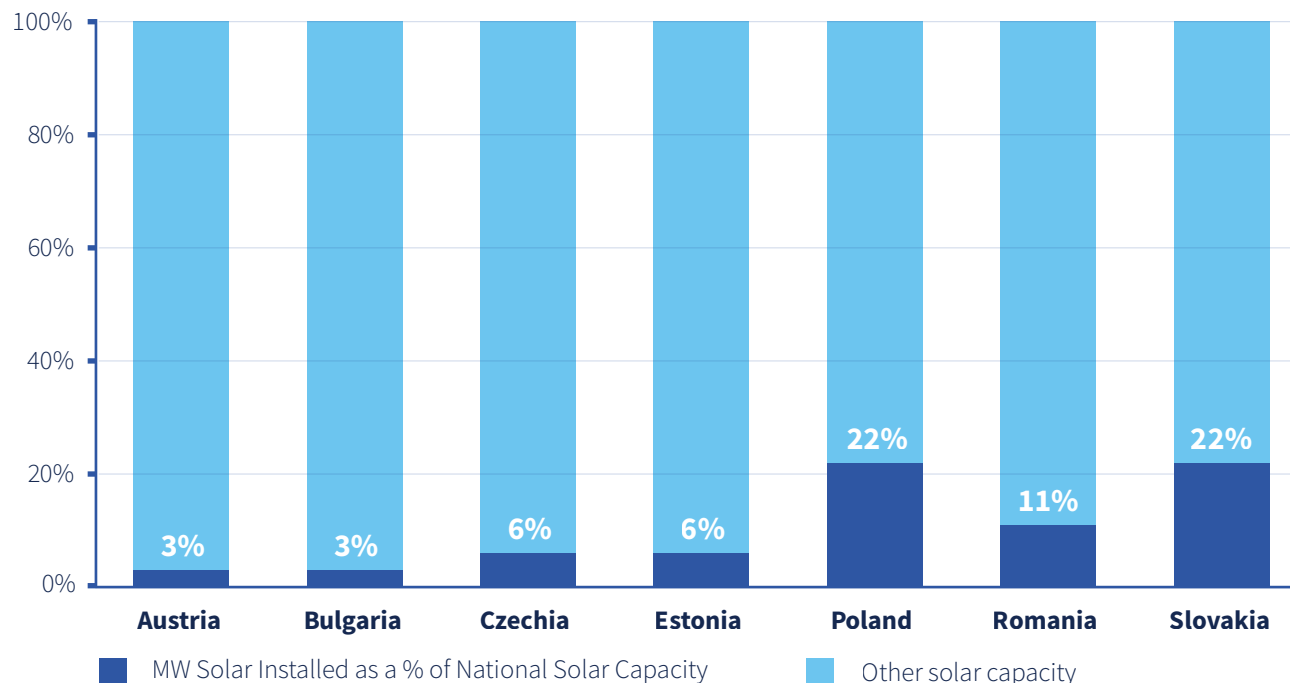
Both platforms operate across more than one jurisdiction, providing exposure to generation capacity that is not concentrated in a single market. Multi-country development pipelines may offer geographic diversification across regulatory regimes and electricity market structures and may support regional supply stability where electricity systems are interconnected. Renewable generation assets are also commonly supported by long-term power purchase agreements, which may contribute to operational stability by linking generation capacity to predictable demand.

**1,072** MW

**Renewable energy capacity installed since 3SIIF investment**

**3,238** GWh

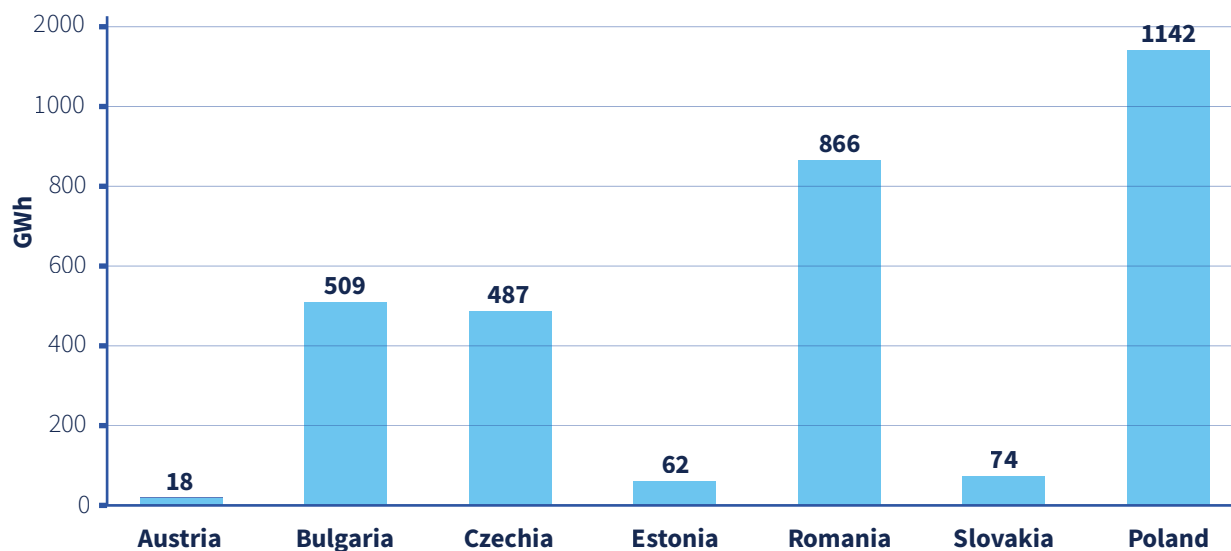
**Renewable energy generated since 3SIIF investment**



**Chart 7. Solar PV capacity installed by Portfolio Companies 3SIIF's investment, as a percentage of national solar PV capacity.<sup>1</sup>**

3SIIF's energy portfolio companies have established themselves as a meaningful contributor to renewable energy capacity in Three Seas countries, with solar PV installations representing a material share of national solar capacity in several markets. The footprint is particularly significant in Poland and Slovakia where, since 3SIIF's made its respective investments into Enerly and R.Power, the solar capacity deployed accounts for 22% of each country's total installed solar PV base. In Romania, it represents 11% of national capacity, together generating over 2,000 GWh of renewable electricity since 3SIIF made its respective investments. Across Czechia and Estonia, this solar PV capacity deployment represents a 6% share of national solar capacity, while it is approximately 3% in Austria and Bulgaria.

**Chart 8. Total renewable energy generated by Portfolio Companies since 3SIIF's investment**



In aggregate, the Fund's energy assets have generated approximately 3,158 GWh of renewable energy since it made its investments. This increasingly helps the Three Seas' countries to reduce each country's dependence on fossil fuels for electricity generation. This breadth of deployment as shown in Chart 7, spanning seven national grids at meaningful ownership stakes, also helps to support energy system resilience, diversifying generation assets geographically and reducing the concentration risk inherent in centralised, fossil fuel-dependent power infrastructure.

<sup>1</sup> National solar PV capacity for 2024 sourced from source: [https://ec.europa.eu/eurostat/databrowser/view/nrg\\_inf\\_epc\\_\\_custom\\_19693235/default/table](https://ec.europa.eu/eurostat/databrowser/view/nrg_inf_epc__custom_19693235/default/table)

## Transport

BMF Port Burgas operates port terminal infrastructure on the Black Sea, providing access to international shipping routes and serving cargo flows between Southeastern Europe and other markets. Port infrastructure located on international corridors may support resilience of transport networks by providing alternative entry points for goods and bulk commodities, particularly where trade flows depend on a limited number of routes.

# 51%

**BMF's share in container throughput in Bulgaria**

# 87%

**Of total freight kms using electric locomotives**

Cargounit provides locomotives certified for operation across multiple European rail systems. Multi-system rolling stock may contribute to network interoperability by allowing freight and passenger operators to run services across borders without requiring changes of equipment at national boundaries. The availability of locomotives capable of operating in several jurisdictions can support redundancy within the rail network and may reduce operational constraints on cross-border freight transport.

# c.12,450,000

**Annual freight km by Cargounit's locomotives**

Taken together, exposure to port infrastructure and cross-border rail equipment provides participation in transport systems that are not limited to a single domestic network and that may support continuity of supply chains where alternative routes are required.

## Digital

Data centres located within the European Union may support digital system resilience by providing local hosting capacity for enterprise, cloud, and telecommunications services. Localised data processing and storage can reduce dependence on facilities located outside the region and may contribute to continuity of digital services in the event of disruptions affecting external infrastructure.

# 6,200 MWh

**Renewable energy consumed**

# 1.62

**Power Usage Effectiveness**

Greenergy Data Centers' facilities are designed to operate with high energy efficiency and are supplied with electricity from renewable sources where available. Energy-efficient data centre infrastructure may reduce exposure to energy price volatility and may support stable operation in markets where electricity supply conditions vary. The presence of regional data centre capacity may also support compliance with data localisation and security requirements applicable in certain jurisdictions.



Energy

Three Seas countries with  
active portfolio presence

**10 of 13**

Across transport, energy,  
and digital infrastructure

## 3.4 Regional Cooperation

### How regional cooperation creates benefits

Regional cooperation creates benefits by enabling infrastructure assets to serve multiple national markets rather than operating solely within domestic networks. The portfolio focuses on infrastructure across CEE particularly assets that form part of cross-border transport, energy, and digital corridors, where historic underdevelopment of north-south connectivity has limited market integration. Investments with regional relevance can improve efficiency by supporting shared networks that link several Member States.

3SIIF investments span different countries and sectors but typically support infrastructure systems that operate across borders, such as ports connected to international trade routes, locomotives certified for multiple rail networks, renewable generation platforms active in more

than one country, or data centres serving regional clients. Assets of this type may achieve higher utilisation and operational efficiency because demand is drawn from a wider geographic area, while interoperable infrastructure can reduce duplication of capacity and strengthen cross-border supply chains.

A geographically diversified portfolio also allows capital to be deployed where infrastructure gaps are greatest while still supporting demand from neighbouring markets. As transport corridors, electricity systems, and digital networks increasingly operate on a regional basis, investments in one Member State may contribute to economic activity across the wider Three Seas region, reflecting the role of regional connectivity in supporting trade, energy security, and digital development.

Distinct cross-border  
infrastructure corridors

**3**

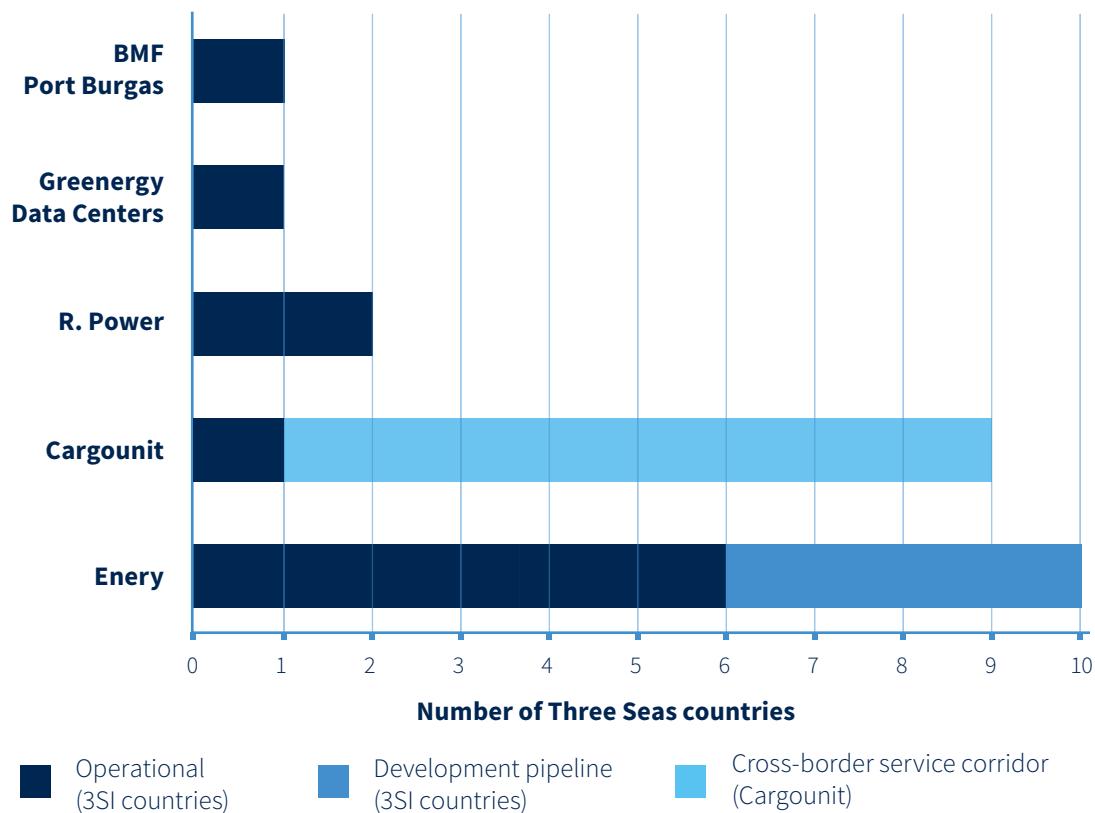
Black Sea maritime, CEE rail  
freight, multi-country  
renewables

Portfolio investments oper-  
ating across more than one  
region

**100%**

All 5 assets serve or connect  
multiple Three Seas countries

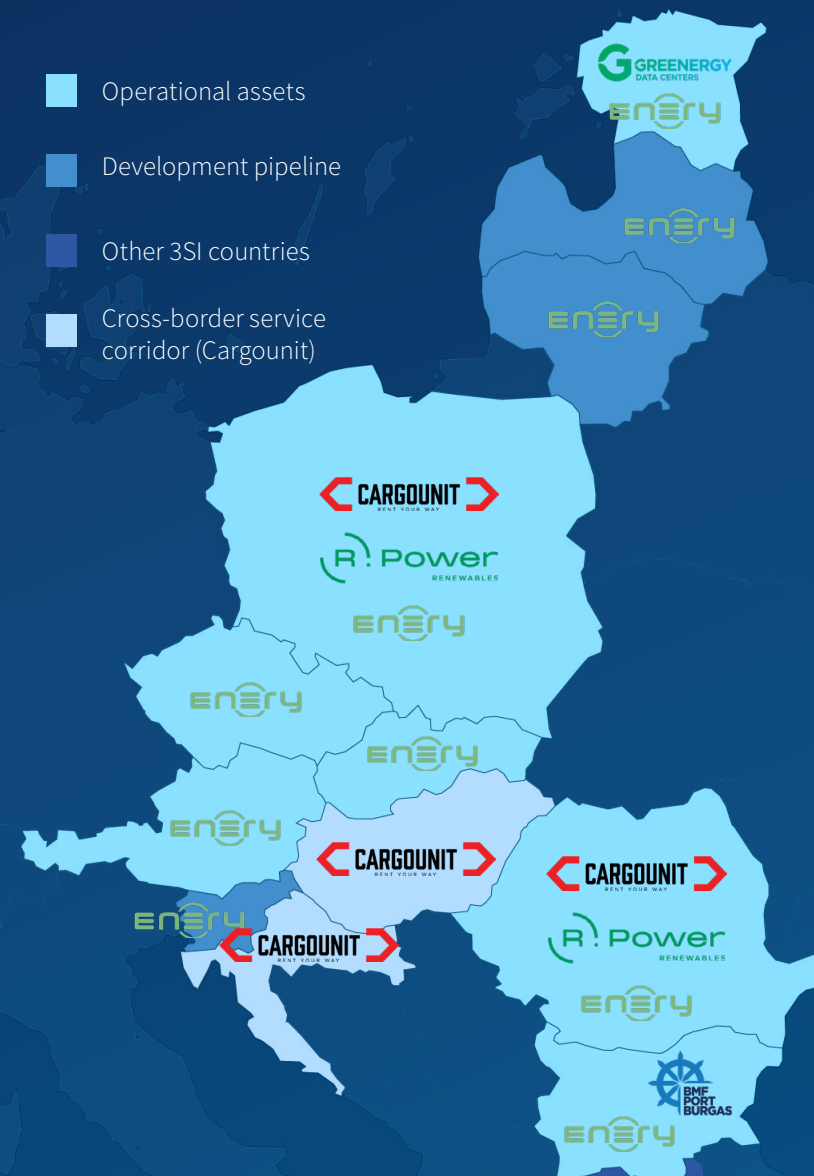
**Chart 9. Three Seas country coverage by asset**



\*Country counts based on publicly available company disclosures. Operational = assets in commercial service. Pipeline = confirmed active development. Cargounit cross-border corridor reflects documented Vectron MS locomotive certification countries within the 3SI region (Hungary, Croatia, Slovenia, Czechia, Slovakia, Romania, Bulgaria); this denotes certified operational reach, not confirmed active commercial service in each country.

Non-3SI EU markets (e.g. Germany, Portugal for R.Power) excluded.

- Operational assets
- Development pipeline
- Other 3SI countries
- Cross-border service corridor (Cargounit)



**Sources:** 3SIF / Amber Infrastructure public disclosures. Map boundaries: Natural Earth via world-atlas@2. Cargounit cross-border corridor reflects documented Vectron MS locomotive certification countries within the 3SI region. Development pipeline includes confirmed active project development only.

## Case Study: Enery

3SIIF's investment in Enery represents one of the clearest examples in the portfolio of a platform designed to operate across multiple Three Seas markets simultaneously. The company's operating assets in Bulgaria, Czechia, Slovakia, Estonia, Austria and Romania combined with a development pipeline spanning Slovenia, Lithuania, Latvia and Poland, create a structure capable of transferring technical, financing, and operational expertise across jurisdictions.

This multi-country approach is particularly relevant in a region where renewable deployment remains uneven and regulatory frameworks differ significantly between Member States. Expanding utility-scale solar generation across several Three Seas countries contributes to diversification of electricity supply and reduces dependence on fossil-fuel-based generation, including sources historically imported from outside the region.

The investment therefore supports regional energy integration not through physical interconnection alone, but through the development of a renewable generation platform able to operate across national boundaries.

## Case Study: Cargounit

3SIIF's investment in Cargounit supports cross-border rail freight mobility through the expansion of a locomotive fleet designed for multi-system operation across European rail networks. The company's Vectron MS locomotives are certified in multiple Three Seas Member States, enabling freight operators to run services across borders without locomotive changes, a key constraint on rail efficiency in CEE.

By financing rolling stock capable of operating across different signalling and electrification systems, the investment directly facilitates integration of national rail networks into a more continuous regional transport system. The company's framework agreement with Siemens Mobility for additional locomotives further extends this capability and increases the potential for cross-border freight flows.

Given the importance of rail for bulk goods, intermodal transport, and energy-related cargo, improved locomotive interoperability has direct implications for trade efficiency across the Three Seas region.

**546** MW  
installed capacity  
across 6 countries

Development pipeline of  
**~10** GW cross 10 countries

**12** countries  
on one locomotive platform

The Vectron platform  
itself is approved in  
**20** European countries

# 4

## Economic Impact

4.0 Economic Impact	44
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## 4.0 Economic Impact

This section presents the assessment of the economic impact generated by **capital expenditure (CAPEX)** and **operational expenditure (OPEX)** undertaken by five portfolio companies supported by the Three Seas Initiative Investment Fund (3SIIF): Cargounit, R.Power, Enery, BMF Port Burgas, and Greenergy Data Centers (GDC). Through its financial support, 3SIIF enables these companies to implement and scale both their investment programmes and ongoing operational activities across 11 European countries.

The economic footprint of these portfolio companies extends well beyond their own direct operations. While their activities generate direct contributions to **GDP**, employment and tax revenues, their broader impact on national economies materialises through a set of wider transmission channels triggered by CAPEX- and OPEX-related spending supported by 3SIIF.

First, the companies stimulate supply chains. Their demand for intermediate goods and services creates

upstream effects, encouraging additional production, employment and fiscal revenues across a wide range of sectors throughout the economy. These indirect and induced effects amplify the initial impulse generated by the portfolio companies' own activities.

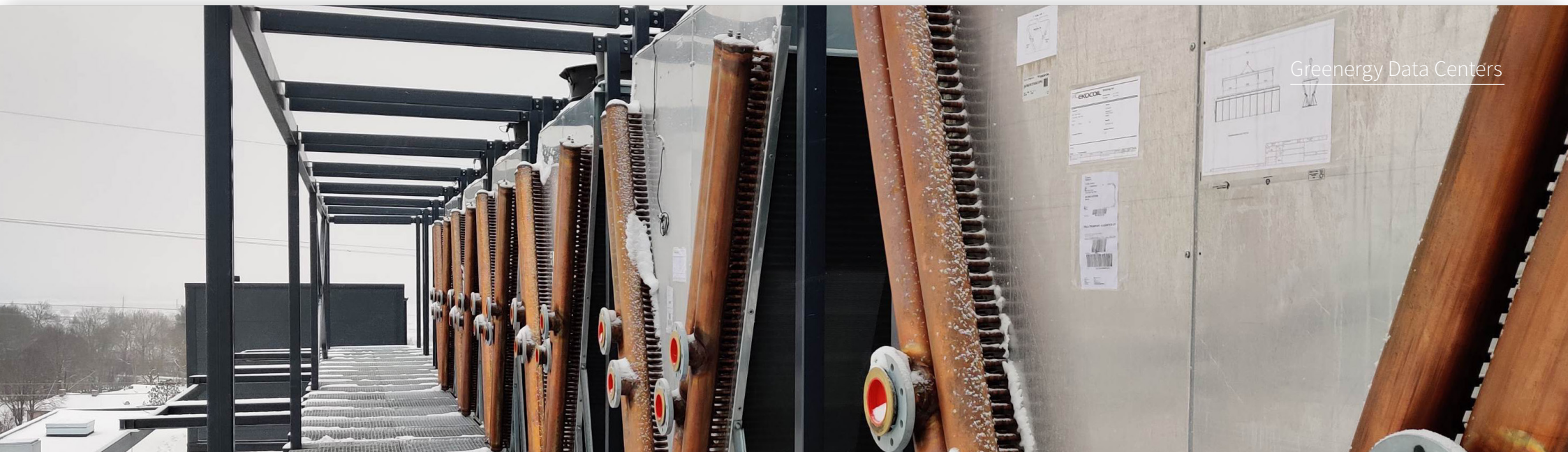
Second, CAPEX and OPEX spending can act as catalysts for further investment by suppliers. Increased demand along the supply chain may incentivise suppliers to expand production capacity, upgrade technologies, and improve the quality and efficiency of goods and services delivered. Such responses are typically realised through additional private investment, reinforcing the overall economic impact.

Third, the activities of the five portfolio companies contribute to long-term supply-side effects. Companies operate primarily in areas critical to economic development, including digital, transport and energy infrastructure. Investments in these sectors generate lasting benefits for the host economies, for example by im-

proving investment attractiveness, reducing transport and energy costs, enhancing productivity, and supporting the digital transformation of economic activity.

In this context, 3SIIF plays a pivotal enabling role. By providing long-term financing, the Fund facilitates the implementation of investment and operational activities that would otherwise be more limited in scale, timing or scope. In doing so, 3SIIF indirectly supports the generation of wider economic effects that go beyond the immediate boundaries of the portfolio companies themselves.

Capturing these interconnected and multi-layered impacts requires the application of advanced macroeconomic modelling frameworks, capable of tracing direct, indirect, induced and longer-term effects across sectors and countries. The analysis presented in this section is designed to reflect this broader economic context, highlighting how 3SIIF-supported activities translate into tangible and sustained benefits for national economies.



Greenergy Data Centers

## 4.1 Supply Chain-related Effects

The analysis quantifies the economic effects enabled by 3SIIF through its support for five portfolio companies operating across 10 countries. It covers both the 2020-2025 period, in which economic effects are driven predominantly by investment-related activity (CAPEX), and the 2026-2035 period, when impacts arise mainly from ongoing operational activity (OPEX).

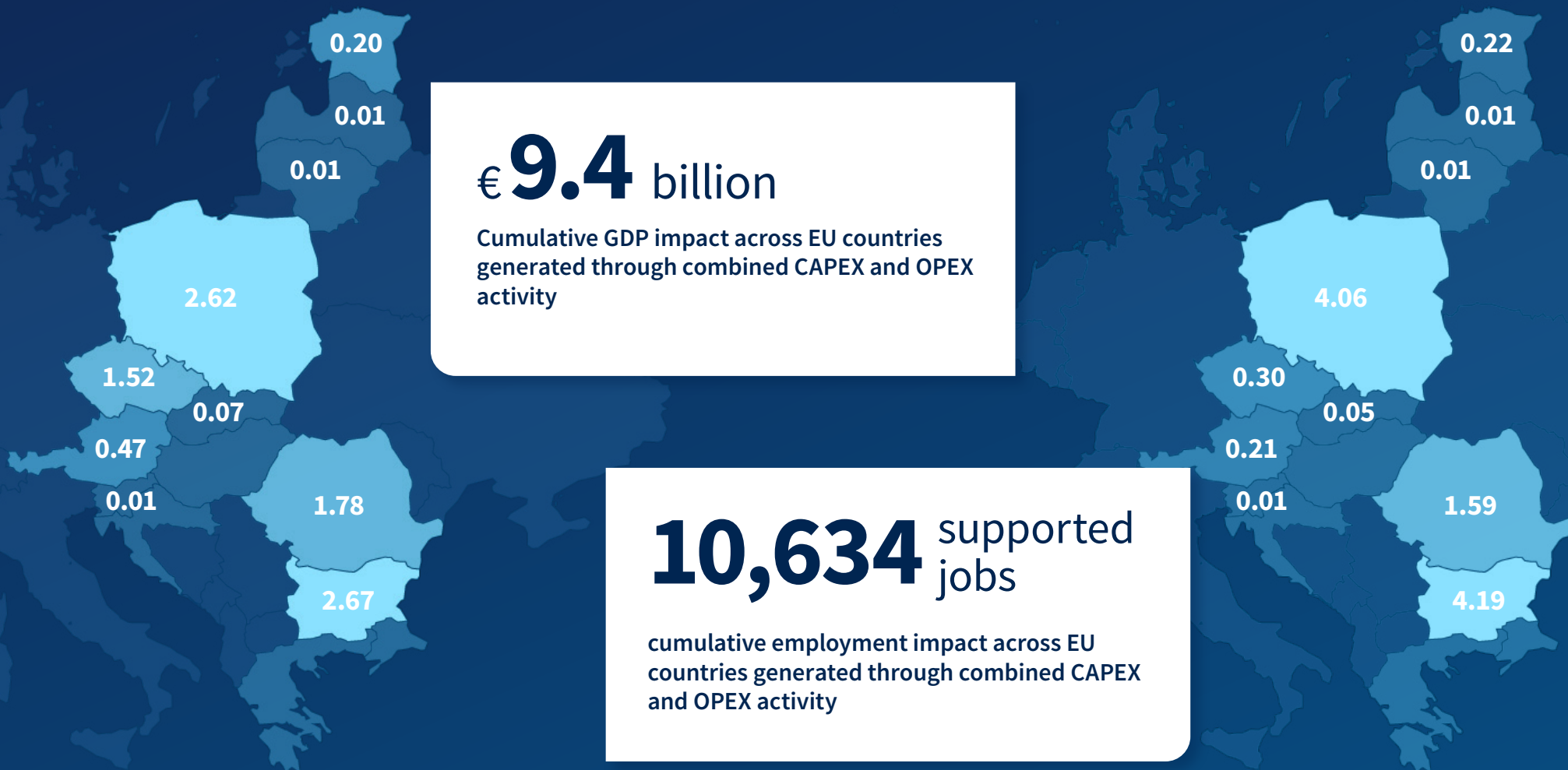
### The results show that:

- ✓ **€1.1 billion** invested by 3SIIF acted as a key enabling factor, allowing investments to be implemented and subsequently transformed into sustained economic activity.
- ✓ Over the period 2020-2035, these activities generated a cumulative impact on GDP of **€9.4 billion** (constant

2025 prices), including **€1.7 billion** in the 2020-2025 historical period.

- ✓ By adopting a long-term analytical horizon, the assessment captures the lasting effects of infrastructure investments in transport, digital and energy sectors supported by 3SIIF, which materialise primarily during the operational phase.

- ✓ As a result, long-term operations drive GDP, employment (an average of **10.6 thousand** jobs supported annually) and cumulative tax revenues of **€2.3 billion**, highlighting the Fund's role in enabling durable economic benefits rather than one-off investment effects.



The investment (CAPEX) and operational (OPEX) activities undertaken by the 3SIF portfolio companies affect the economies of the countries in which they operate through several interrelated channels. These effects arise not only from the companies' own production activities,

employment and tax payments (the direct effects), but also from the broader economic interactions that are triggered in the course of implementing investments and running day-to-day operations.

To carry out their investment programmes and operational activities, portfolio companies must purchase intermediate goods and services from other firms, such as construction services, equipment, energy, transport, ICT solutions, professional services and maintenance. These suppliers, in turn, need to source inputs from their own suppliers in order to meet this demand. As a result, additional production, employment and tax revenues are generated throughout the entire supply chain, spreading the economic impact well beyond the portfolio companies themselves. These spillovers are commonly referred to as indirect effects.

However, economic transmission does not stop at the level of production networks. Portfolio companies, their direct suppliers, and the suppliers further upstream all employ workers. Part of the income earned by these employees as a result of CAPEX and OPEX related activities is subsequently spent on consumer goods and services, such as food and beverages, housing, transport, household equipment, recreation and personal services. This additional consumption creates further demand across the economy, supporting new rounds of production, employment, and public revenues. These are known as induced effects.

Taken together, direct, indirect and induced effects capture the full set of supply chain-related mechanisms through which the activities of the portfolio companies supported by 3SIIF translate into broader economic outcomes. In this section, these effects are quantified in terms of:

- **GDP**, which is approximated by gross value added which represents the main component of gross domestic product (GDP) and can be interpreted as the

value of goods and services produced in the economy after accounting for intermediate inputs;

- **Employment**, measured as the number of jobs supported across the economy as a result of CAPEX and OPEX activities; and
- **Tax revenues** generated at different stages of production and income generation.

The analysis covers both a historical period (2020-2025), characterised by a strong role of investment processes (CAPEX), and a forward-looking projection period (2026-2035), based on the financial plans of the portfolio companies, in which regular operational activity (OPEX) plays a dominant role. Adopting a longer time horizon is essential in the case of transport, digital and energy infrastructure, where investments are by definition long-term in nature and their economic relevance extends well beyond the moment of implementation. 3SIIF enables these investments, and by doing so creates the conditions for sustained operational activity that is planned and executed over many years. Presenting the effects over an extended time perspective allows the analysis to capture the full scale of the Fund's role, which is not limited to the short-term impacts generated during the investment phase, but above all reflects the period in which completed investments begin to translate into lasting economic effects through ongoing operational activity.



## 4.2 Private Sector Investment Mobilisation

The previous section demonstrated how the investment activity of 3SIIF stimulates economic activity through supply chain linkages, generating additional production, employment, and fiscal revenues across a broad range of sectors. These demand effects incentivise suppliers to expand production capacity, upgrade technologies, and improve the quality and efficiency of the goods and services they deliver. Such adjustments are typically realised through additional private investment, thereby reinforcing and extending the overall economic impact of 3SIIF-supported activity.

To quantify these investment spillovers, we estimate the extent to which higher profitability translates into additional capital formation, i.e. investments. Our econometric analysis indicates that, on average, approximately 25% of incremental profits measured by Gross Operating Surplus (GOS), is reinvested by firms operating in EU countries. This estimated reinvestment rate is applied to the additional GOS generated by 3SIIF-enabled economic activity, allowing us to derive the associated investment spillovers attributable to both CAPEX and operational OPEX.

The analysis quantifies investment spillovers enabled by 3SIIF through its support for five portfolio companies operating across 10 countries. Overall, spending supported by 3SIIF generates significant secondary investment effects along the supply chain, as firms benefiting from the Fund's activity expand capacity and upgrade operations. In total, these dynamics are estimated to result in approximately **€600 million** (constant 2025 prices) in additional investment over the 2020-2035 period.

Investment spillovers associated with OPEX are driven by the sustained demand generated during the operational phase of 3SIIF-supported assets. The largest effects are observed in Bulgaria and Romania, where estimated spillovers amount to approximately €94-95 million each (in 2025 prices), followed by Czechia and Poland. This pattern highlights the importance of ongoing operational activity in countries where 3SIIF-financed assets generate stable and recurring demand for intermediate goods and services, supporting profitability and encouraging reinvestment among local suppliers over time.

In smaller economies, OPEX-related spillovers are more limited in absolute terms, reflecting the scale of domestic supply chains. Nevertheless, positive investment effects are still observed throughout the operational phase, indicating that 3SIIF activity contributes to capital deepening across all participating economies, albeit to varying degrees.

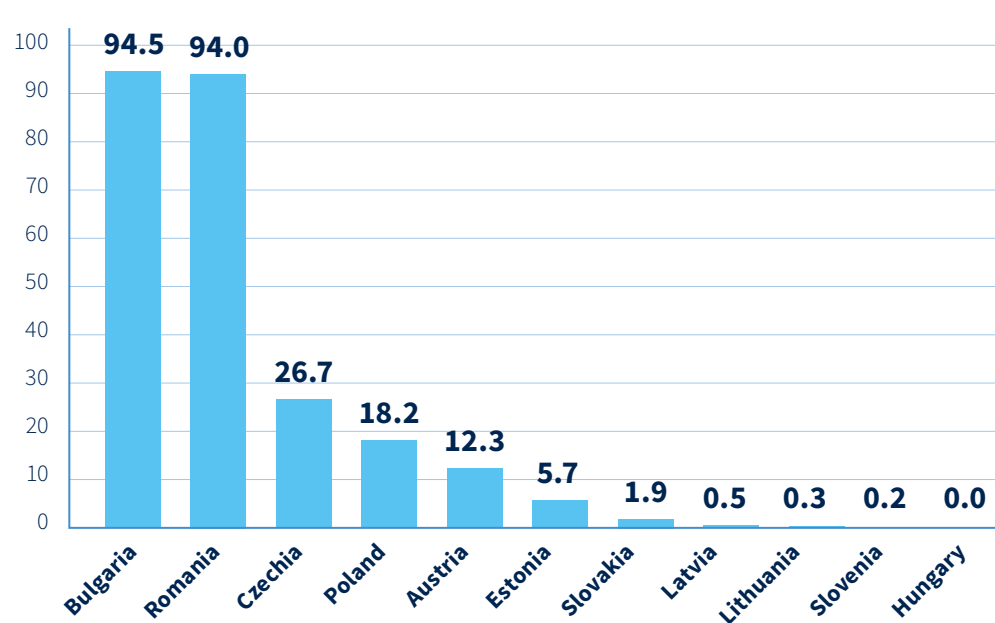
In contrast, CAPEX-related investment spillovers are more concentrated and unevenly distributed across countries. These effects are clearly dominated by Poland, where estimated spillovers exceed €200 million (in 2025 prices). This reflects the scale and structure of capital investment associated with 3SIIF-supported projects, as well as Poland's relatively large and diversified domestic supplier base, which is well positioned to respond to investment-driven demand by expanding productive capacity.



Energy

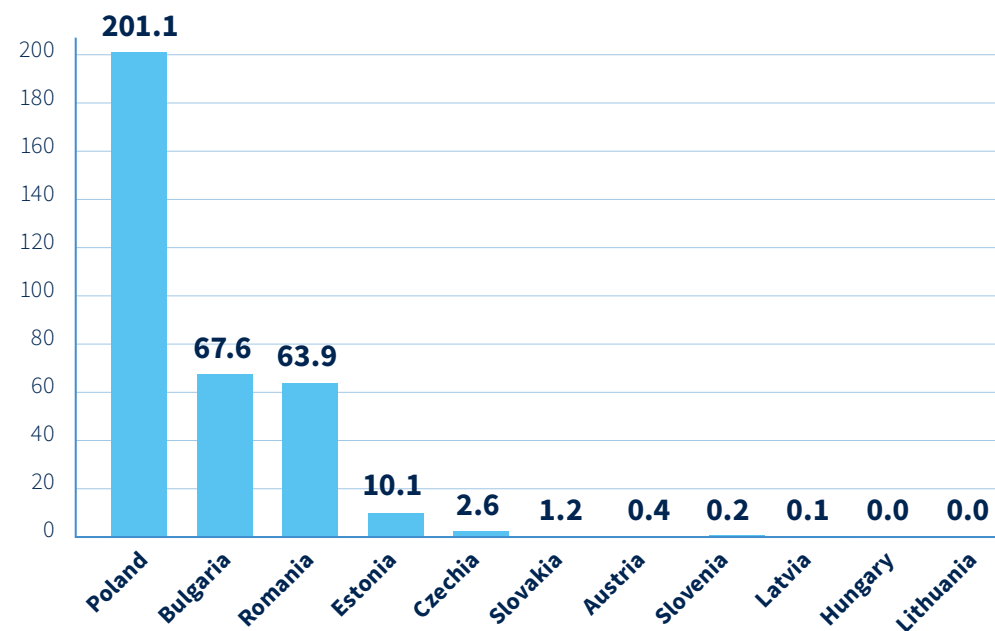
**Chart 10. Estimated investment spillovers generated by 3SIIF-supported OPEX expenditures in 2020-2035**

(€ million, 2025 prices)



**Chart 11. Estimated investment spillovers generated by 3SIIF-supported CAPEX expenditures in 2020-2035**

(€ million, 2025 prices)



Source: EY calculations based on 3SIIF data

## 4.3 Supply-side Effects

Investments implemented in Poland in 2020-2025, enabled by financing from 3SIIF, generate economic effects that extend far beyond the investment phase. The combined demand- and supply-side effects of these investments are estimated to contribute **€1,431 million to Poland's GDP** over the period 2020-2036, with almost **60% of this impact attributable to supply-side effects**.

These supply-side effects reflect long-term improvements in productivity, cost efficiency and competitiveness resulting from enhanced transport, energy and digital infrastructure. By strengthening the structural foundations of the economy, they support investment and sustain employment for many years after the completion of the 3SIIF-supported investments, ensuring durable economic benefits even in the absence of additional investment activity after 2025.

In the previous parts of this section, attention was focused on the demand-side impact on the upstream economy. In other words, the results presented so far have shown how portfolio companies, through their CAPEX and OPEX, stimulated GDP and employment across their supply chains. This channel, via purchases from suppliers and spending by employees, is an important transmission mechanism, but it is not the only one.

Financial support from 3SIIF enables investments in areas that are critical for the functioning of the economy not only from a supply chain perspective, but also in terms of improving the overall efficiency of economic activity. In particular, this concerns investments in transport, energy and digital infrastructure,

which shape the productive capacity of the economy over the longer term.

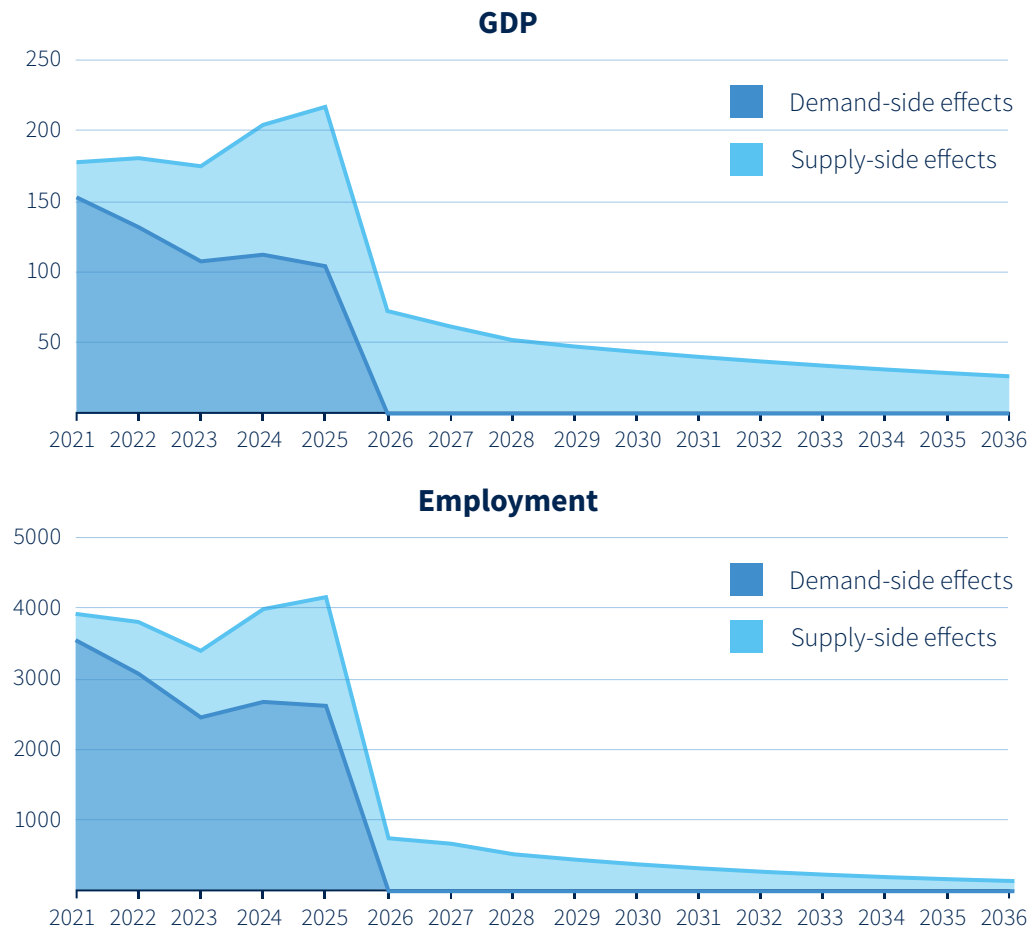
In this context, when assessing the broader impact of initiatives supported by 3SIIF, it is necessary to go beyond demand-side effects associated with expenditure flows—such as purchases of intermediate goods or consumption spending by employees—and to consider supply-side effects. While demand-side impacts are typically short-lived and concentrated around the investment period, supply-side effects operate over a longer horizon and influence the structural performance of the economy.

In the case of 3SIIF-supported activities in transport, digital and energy infrastructure, supply-side effects arise through several channels. First, improved infrastructure reduces operating costs for firms, for example by lowering transport costs or increasing access to reliable and affordable energy. Second, it enhances productivity, as firms can operate more efficiently within better-functioning networks. Third, it increases the competitiveness of domestic companies, enabling them to expand into new markets and scale production. Finally, it strengthens the country's investment attractiveness, as high-quality infrastructure is a key factor in location decisions by both domestic and international investors. Importantly, unlike demand-side effects, these supply-side benefits persist over time, even after the initial investment impulse has faded.

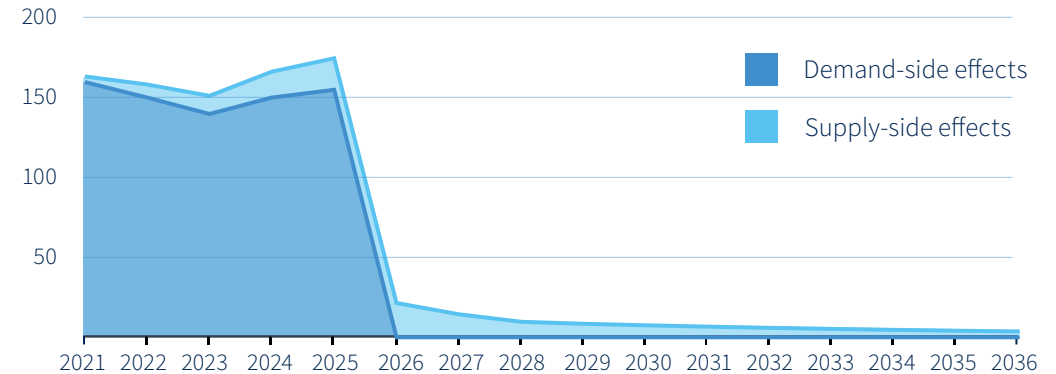
To illustrate the importance of these mechanisms, this part of the report focuses on the impact of 3SIIF support in Poland, delivered through the activities of its portfolio companies, Cargounit and R.Power. The analysis examines how 3SIIF support in the period 2020-2025 contributed to stimulating the Polish economy not only through short-term demand effects, but—more importantly—through supply-side effects that extend well beyond the period of direct financial support.

The charts below present the estimated impact on GDP (in constant prices), employment, and investment in Poland over the period 2021–2036. The dark blue parts represent demand-side effects associated with the direct expenditure of funds by Cargounit and R.Power supported by 3SIIF. The light blue parts, in turn, capture the component of their impact that reflects long-term supply-side effects.

**Chart 12-14: The effects of 3SIIF-supported investments (2020-2025) on GDP, investment (€ million, 2025 prices), and employment in Poland**



## Investments



Source: EY calculations based on 3SIIF data

As expected, during the implementation phase of support (2020-2025), demand-side effects dominate. This is typical for investment-driven interventions, where the immediate impact is driven by spending on goods, services and labour. However, already during the 2020–2025 period, supply-side effects begin to emerge and gradually strengthen as newly created infrastructure becomes operational and starts influencing the efficiency of the economy.

It is important to emphasise that after 2025, when demand-side effects subside (for the purpose of clearly isolating supply-side dynamics, the analysis assumes that new expenditure by portfolio companies ceases after 2025), the supply-side effects continue to operate. In the case of Cargounit, this reflects the continued availability of modern rolling stock, which lowers effective transport costs, improves reliability and increases the capacity of the rail system—thereby facilitating trade, supporting logistics efficiency and strengthening market integration. In the case of R.Power, the operation of renewable energy assets and energy storage contributes to lower and more stable energy costs, improving conditions for industrial activity and supporting long-term investment decisions across sectors. Together, these effects translate into sustained improvements in productivity and competitiveness of the Polish economy.

The observed decline in supply-side effects after 2025 does not reflect a loss of productive capacity, but rather the disappearance of complementary demand impulses that amplify the utilisation of newly created infrastructure during the investment phase. Over time, however, supply-side effects gradually diminish. This is due to the assumption about the absence of additional investment after 2025: infrastructure created in the 2020-2025 period undergoes progressive depreciation, and without further expansion or modernisation, its relative contribution to economic performance declines.

**The total impact on Poland's GDP over the period 2020-2036 amounts to €1,431 million (in constant prices), of which 57% (€821 million) is attributable to supply-side effects. In the case of investment in Poland, the total impact reaches €907 million, with supply-side effects accounting for 17% (€151 million).**

The total impact on Poland's GDP over the period 2020–2036 amounts to €1,431 million (in constant prices), of which 57% (€821 million) is attributable to supply-side effects. In the case of investment in Poland, the total impact reaches €907 million, with supply-side effects accounting for 17% (€151 million). The relatively lower share of supply-side effects in investment reflects the fact that infrastructure improvements primarily enhance the efficiency of existing capital and production pro-

cesses, rather than directly generating new investment outlays on a comparable scale.

During the investment period, when demand-side and supply-side effects operate jointly, the impact on the labour market is relatively strong, amounting on average to 3,864 supported jobs per year. After the investment phase has concluded, supply-side effects alone continue to support employment, contributing to an average of 374 jobs per year over the period 2026-2036. In other words, the effects generated in the period 2020-2025 by the infrastructure-related activities of the portfolio companies support the Polish economy in the long term, even in the absence of additional investment activities by these firms after 2025.

Overall, the results demonstrate that while demand-side effects provide an important short-term stimulus, it is the persistent supply-side impact of infrastructure investment-enabled by 3SIIF that plays an important role in shaping long-term economic performance.



# 5 Environmental and Social Risk Management

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# 5.1 ESMS Framework and Monitoring

Energy

## Overview

3SIIF maintains a formal Environmental and Social Management System (ESMS) governing the identification, assessment, management, and monitoring of environmental and social (E&S) risks across its investment portfolio. The ESMS ensures that E&S considerations are embedded throughout the investment lifecycle - from initial screening through to exit - and that the Fund's activities remain aligned with applicable Development Finance Institution (DFI) requirements, including the IFC Performance Standards and DFC Policy Covenants.

## Governance Structure

The Fund is managed by ONE Fund Management S.A. and advised by Amber Fund Management Limited (Amber), whose asset management

and ESG team holds primary responsibility for E&S oversight at the fund level. At the portfolio company level, dedicated E&S functions – typically a Head of ESG or ESG Coordinator – are responsible for day-to-day management and reporting, with board-level accountability maintained for material E&S matters. Certain E&S actions are designated as Board Reserved Matters, ensuring senior governance oversight where required. Portfolio companies are also subject to oversight by relevant national regulatory bodies across their operating jurisdictions.

## Screening and Due Diligence

Exclusion Screening Prior to investment, 3SIIF applies a formal exclusion screen. Prohibited activities include illegal products or activities, hazard-

ous substances, weaponry, nuclear and coal-fired power generation, tobacco, gambling, exploitative labour practices, and commercial logging, among others.

## E&S Categorisation

Each investment is assessed and categorised in accordance with the IFC's environmental and social categorisation process, reflecting the nature, scale, and potential E&S impacts of each portfolio company's operations.

Technical Due Diligence Independent technical advisers are appointed for each transaction to conduct Environmental and Social Due Diligence (ESDD). The scope typically encompasses: environmental risk and permitting review; corporate E&S policy assessment; supply chain and human rights risk evaluation; EU

Taxonomy compliance assessment; and Principal Adverse Impact (PAI) indicator identification. The ESDD reference framework draws on Amber's ESG Policy, applicable local legislation, IFC Performance Standards, and World Bank Group EHS Guidelines where relevant. Ultimately, ESDD serves to safeguard long-term investor value by ensuring that the Fund's portfolio companies remain resilient, operationally efficient, and adaptable within an increasingly complex global risk landscape.

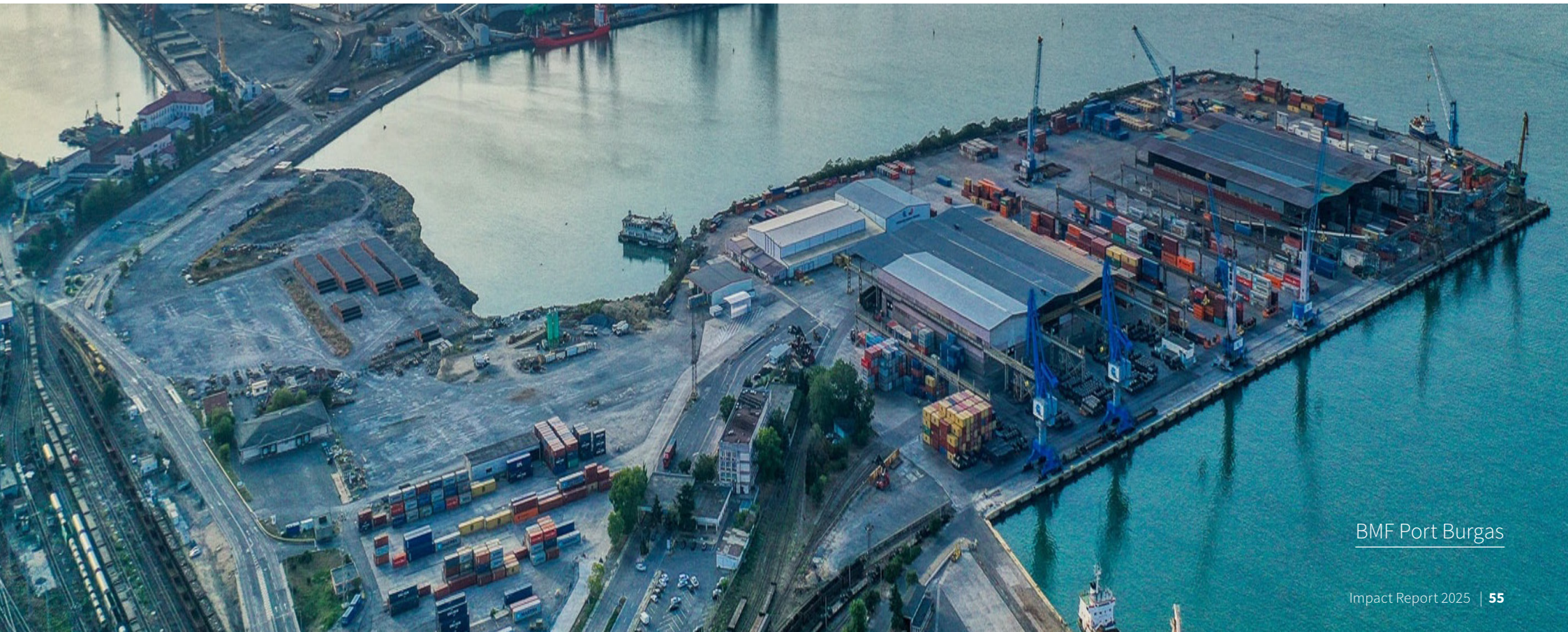
E&S Action Plans Material ESDD findings are translated into Environmental and Social Action Plans (ESAPs), incorporated into shareholder agreements as binding or best-efforts commitments. ESAPs specify actions, reference standards, responsible parties, and timelines, and are reviewed throughout the holding period.

## Monitoring and Reporting

**Ongoing Engagement:** Amber’s asset management and ESG team engages with portfolio companies on a regular basis through video conference calls, document review, and periodic site visits. This includes formal annual review of sustainability reports and review of monthly and quarterly operational reports covering hazards, incidents, inspections, training, and key E&S metrics.

**Incident and Grievance Reporting** Significant Adverse E&S incidents are reported to DFC in line with the Facility Agreement. External grievances are tracked, documented, and reported; no external grievances were recorded during the reporting period.

**ESG Data Collection** E&S data is collected from portfolio companies on an ongoing basis and reported against the 14 core PAI indicators in Annex 1 of the EU SFDR Regulatory Technical Standards (RTS). Metrics include GHG emissions (Scopes 1-3), carbon footprint, energy mix, biodiversity exposure, water emissions, hazardous waste, United Nations Global Compact (UNGP)/OECD compliance, and board gender diversity. Financed emissions are calculated in accordance with the Partnership for Carbon Accounting Financials (PCAF) Part A – Financed Emissions Third Addition (2025) and the GHG Protocol, with carbon intensity reported using PCAF and TCFD recommended methodologies.



## 5.2 Portfolio Sustainability Risk Indicators

Energy

The Fund considers the PAIs of its investment decisions on sustainability factors. The table below outlines the consolidated PAI indicators of its portfolio for the reference period from 1 January 2025 to 31 December 2025 and is aligned with the SFDR RTS.

Total fleet size	Metric	Unit	31 December 2025
Greenhouse gas emissions	Scope 1 GHG emissions <sup>1</sup>	tCO <sub>2</sub> e	2,597
	Scope 2 GHG emissions <sup>1</sup>	tCO <sub>2</sub> e	3,011
	Scope 3 GHG emissions <sup>1</sup>	tCO <sub>2</sub> e	84,476
	Total GHG emissions <sup>1</sup>	tCO <sub>2</sub> e	90,084
	Carbon Footprint <sup>1</sup>	tCO <sub>2</sub> e/€m invested	53
	GHG intensity of investee companies <sup>1</sup>	tCO <sub>2</sub> e/€m revenue	489
	Share of investments in companies active in the fossil fuel sector <sup>2</sup>	%	0
	Share of non-renewable energy consumption of investee companies from non-renewable energy sources compared to renewable energy sources, expressed as a percentage of total energy sources impact climate sector <sup>2</sup>	%	41
	Share of non-renewable energy production of investee companies from non-renewable energy sources compared to renewable energy sources, expressed as a percentage of total energy sources impact climate sector <sup>2</sup>	%	0

<sup>1</sup> Attributed based on the Company's share of each investments' total equity and debt

<sup>2</sup> Share of investments based on fair value

Total fleet size	Metric	Unit	31 December 2025
	Energy consumption intensity per high impact climate sector: Transportation and storage	GWh/€m	0.13
	Energy consumption intensity per high impact climate sector: Electricity, gas, steam and air conditioning supply	GWh/€m	0.026
<b>Biodiversity</b>	Share of investments in companies active in the fossil fuel sector <sup>2</sup>	%	-
<b>Water</b>	Tonnes of emissions to water generated by investee companies per million € invested, expressed as a weighted average <sup>1</sup>	Tonnes/€m	0
<b>Waste</b>	Tonnes of hazardous waste and radioactive waste generated by investee companies per million € invested, expressed as a weighted average <sup>1</sup>	Tonnes/€m	0.01
<b>Social and employee matters</b>	Share of investments in investee companies that have been involved in violations of the UNGC principles or OECD Guidelines for Multinational Enterprises <sup>2</sup>	%	0
	Share of investments in investee companies without policies to monitor compliance with the UNGC principles or OECD Guidelines for Multinational Enterprises or grievance / complaints handling mechanisms to address violations of the UNGC principles or OECD Guidelines for Multinational Enterprises <sup>2</sup>	%	0
	Average unadjusted gender pay gap of investee companies <sup>1</sup>	%	23
	Average ratio of female to male board members in investee companies, expressed as a percentage of all board members <sup>1</sup>	%	11
	Share of investments in investee companies involved in the manufacture or selling of controversial weapons <sup>2</sup>	%	0

1 Attributed based on the Company's share of each investments' total equity and debt

2 Share of investments based on fair value

## 5.3 Cross-Portfolio E&S Observations

### Emissions profile

The portfolio's Scope 1 emissions of 2,597 tCO<sub>2</sub>e are low relative to the scale of operations, reflecting the asset mix: renewable energy generation, rolling stock leasing (where fuel combustion occurs in the operator's fleet rather than Cargounit's), and data centre colocation. Scope 3 emissions of 84,476 tCO<sub>2</sub>e are the dominant emissions category, consistent with an infrastructure portfolio where the most material carbon exposures sit in supply chains and customer operations rather than in directly controlled activities. The carbon footprint of 53 tCO<sub>2</sub>e/€m invested and GHG intensity of 489 tCO<sub>2</sub>e/€m revenue are presented in the PAI table on the previous page and have been calculated in accordance with PCAF and GHG Protocol methodologies.

### Energy mix

41% of portfolio energy consumption is sourced from non-renewable sources, reflecting the current energy mix of grid electricity in the markets where assets operate, particularly Estonia and Bulgaria where renewable grid penetration remains partial. Where portfolio companies procure certified renewable electricity directly, this is reflected in the Scope 2 market-based calculation.

### Workforce and social indicators

The average unadjusted gender pay gap across the portfolio is 23%, and female board representation stands at 11%. These figures reflect the industrial composition of the portfolio – port operations, rolling stock maintenance, and utility-scale energy are among the most male-dominated sectors in the European economy. They are disclosed here as PAI indicators and are monitored at portfolio company level.

No violations of UNGC principles or OECD Guidelines for Multinational Enterprises were recorded during the reporting period. No external grievances were recorded. All portfolio companies have policies in place to monitor compliance with UNGC principles and OECD Guidelines, and grievance mechanisms are operational.



## 5.4 Case Study: Cargounit

Since 3SIIF's acquisition in November 2020, the fleet has grown from 175 to over 240 locomotives, with its composition shifting significantly toward modern electric and multi-system units.

That shift is a response to structural market and regulatory risk. Diesel-dependent rolling stock faces an increasingly well-defined set of headwinds: the revised TEN-T Regulation mandates electrification of core network corridors by 2030, rail operators are under growing pressure to reduce emissions from their own customers and regulators, and capital markets are progressively pricing fossil fuel exposure into financing terms. For a leasing platform, these forces translate directly into residual value risk on diesel assets and demand risk on diesel-only fleets. Cargounit's own risk analysis, published in its 2024 ESG Report, identifies regulatory tightening on environmental standards and limited access to renewable energy as material threats to the business.

The strategic response – growing the electric and multi-system fleet while reducing diesel exposure – therefore serves both the commercial and risk management objectives of the platform. The profile of the fleet follows from that direction.

Metric	2022	2023	2024
<b>Total fleet size</b>	<b>187</b>	<b>222</b>	<b>235</b>
<b>Electric locomotives (% of fleet)</b>	<b>58%</b>	<b>60%</b>	<b>65%</b>
<b>Modern mainline electric (% of fleet)</b>	<b>19%</b>	<b>28%</b>	<b>39%</b>
<b>Electric assets (% of revenue)</b>	<b>78%</b>	<b>82%</b>	<b>84%</b>
<b>Annual freight km - electric traction</b>	<b>6,900,000</b>	<b>8,500,000</b>	<b>10,700,000</b>



## Fleet Trajectory Since Acquisition

The table below shows the evolution of the fleet's composition and electrification profile over the 3SIIF holding period. These are operational characteristics of the asset and are not presented as sustainability outcomes attributable to the Fund.

## GHG Profile

Cargounit's 2024 company-level GHG disclosure records Scope 1 and 2 emissions of 131 tCO<sub>2</sub>e from directly controlled sources (offices and company vehicles). Scope 3 totals 142,500 tCO<sub>2</sub>e, of which 99.9% is Category 13 – emissions from the operation of leased locomotives by customers – reflecting that the material emissions exposure of a rolling stock lessor sits in the use phase rather than in company operations. Fund-level PAI figures, attributed using PCAF equity share methodology, are disclosed in the PAI table at Section 5.3 and differ from these company-level totals accordingly.

## Sustainability-Linked Loan

In March 2025, the Company signed the incremental facility for €150m to support the investments in modern electric locomotives.

**In 2023, Cargounit secured PLN 1.5 billion (c.€338 million) in Sustainability Linked Loan financing from a consortium of 10 financial institutions. Two KPIs are embedded in the facility:**

KPI	2024 Target	2024 Achieved
Share of modern mainline electric locomotives in fleet	30%	39%
Share of women in the workforce	39%	46%

Cargounit



# 5.5 Case Study: BMF Port Burgas

## CORE PORT EXPANSION & DEEPWATER CAPACITY (REBIRTH28) Burgas West Terminal Modernisation

The REBIRTH28 project at BMF Port Burgas is a flagship infrastructure investment, completing a new deepwater container berth (Berth 28) and integrating advanced multimodal logistics solutions, including direct rail connections to the Sofia ICD Bozhuriste dry port. This development forms part of the EU's Orient / East-Med Core Network Corridor, strengthening Bulgaria's role as a strategic gateway within European-Asian trade flows.

The investment responds to structural changes in European maritime logistics, including vessel upsizing and increasing

concentration of container flows into fewer deepwater hub ports with higher berth productivity requirements.

Container port competitiveness is increasingly determined by water depth, vessel size compatibility, and berth productivity per call, with infrastructure constraints directly influencing participation in main carrier rotation loops.

REBIRTH28 removes key physical constraints by enabling deep-water access and accommodation of larger container vessels, improving throughput per call and strengthening operational efficiency at the terminal level.

### REBIRTH28 – Delivery & Funding Milestones

- **CEF Transport co-funded infrastructure project**
- **Total Project value:** €63.86m
- **EU grant:** €39.83m
- **Construction completed:** January 2025
- **Official inauguration:** April 2025
- **Delivered on schedule within EU funding framework**
- **Recognised as the largest port infrastructure investment in Bulgaria in ~20 years**



Co-funded by  
the European Union

### REBIRTH28 – Key Technical Parameters

Category	Metric
Quay length	270 m
Water depth	-15.5 m
Max vessel length (LOA)	~290 m
Vessel capacity	~80,000 DWT / ~4,500 TEU
Terminal type	Deepwater container berth
Cargo focus	Container / multimodal

## HINTERLAND CONNECTIVITY & MODAL SHIFT (FE2WC) From East 2 West Connections (Rail + ICD Sofia)

BMF Port Burgas has further strengthened its logistics system through the **FE2WC (“From East to West Connections”)** programme, a CEF Transport co-funded initiative supporting improved rail-based connectivity and operational efficiency within the port’s existing multimodal system.

Following the **REBIRTH28 deepwater expansion**, which addressed maritime capacity constraints and improved vessel handling efficiency at berth, FE2WC supports the broader system by ensuring more efficient integration between port operations and established rail-based distribution routes, reinforcing customer expectations for reliable, lower-carbon logistics chains.

A key component of this system is the **Sofia ICD Bozhuriste dry port (€5.93m investment)**, which operates as a fully functional inland extension of the Burgas logistics platform. It provides an integrated rail-based solution enabling efficient consolidation, storage, and redistribution of containerised cargo to and from Sofia and wider European markets, forming a stable and scalable inland logistics node within the corridor.

### Intermodal links to and from the Port of Burgas



BMF Port Burgas





BMF Port Burgas

The investment reflects structural shifts in European freight logistics under the TEN-T framework, where policy and market dynamics are driving a gradual modal shift from road-based transport toward rail-supported intermodal systems, improving emissions intensity, reducing congestion exposure, and enhancing overall supply chain efficiency.

Together with the broader Burgas logistics cluster, this creates a well-established maritime-rail logistics system that improves port throughput efficiency while responding to evolving regulatory requirements and market expectations from carriers and cargo owners across the value chain.

### FE2WC – Delivery & Funding Milestones

- **CEF Transport co-funded rail & logistics corridor programme**
- **Project:** 23-BG-TC-FE2WC – “From East 2 West Connections”
- **EU financing instrument:** Connecting Europe Facility (CEF – Transport)
- **TEN-T aligned infrastructure programme**
- **Focus:** rail connectivity + inland logistics integration
- **Construction completed:** December 2025
- **Official inauguration:** April 2026
- **Total Project value:** €11.24m
- **EU Grant:** €9.15m



### Hinterland Performance (Rail Modal Shift)

Metric	2021	2022	2023	2024
<b>Total volumes</b>	<b>6.9</b>	<b>6.8</b>	<b>7.2</b>	<b>7.6</b>
<b>Rail freight volume</b> (m tonnes)	<b>2.6</b>	<b>3.1</b>	<b>2.9</b>	<b>3.5</b>
<b>Rail modal share</b>	<b>38%</b>	<b>46%</b>	<b>41%</b>	<b>45%</b>
<b>Rail wagons handled</b>	<b>49.0</b>	<b>57.9</b>	<b>57.0</b>	<b>63.8</b>

## OPERATIONAL DECARBONISATION & ENERGY TRANSITION

Alongside capacity expansion, BMF Port Burgas is improving the environmental efficiency of its terminal operations through electrification and on-site renewable energy deployment.

This reflects structural EU regulatory pressure on maritime emissions, port air quality standards, and increasing energy transition requirements across logistics infrastructure.

For port operators, this translates into increasing exposure to energy cost volatility, emissions compliance obligations, and growing customer preference for low-carbon logistics corridors.

In response, the port has integrated design provisions for photovoltaic generation and **shore-side electricity infrastructure at key berths, creating the technical and spatial conditions to enable their future deployment and operational use.**

### Energy Performance

Metric	2023	2024	2025	Total
Grid electricity (MWh)	9,934	8,836	8,420	27,19
PV generation (MWh)	346	1,194	1,067	2,607
Total consumption (MWh)	10,280	10,031	9,487	29,798
PV share	3%	12%	11%	~9% avg

# 6

## Looking Ahead

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# Looking Ahead

## Marcin Prusak | Chairman of the Management Board

Since the Fund's first investment in November 2020, 3SIIF has built a portfolio of five investments and has now almost fully deployed its approximately €1.1 billion of committed capital. The portfolio is already delivering tangible results, including support for over 10,000 jobs annually and a cumulative GDP impact of €9.4 billion across EU countries.

Looking ahead, we believe the portfolio is well positioned to benefit from the same long-term structural trends that underpinned the Fund's original investment thesis, many of which have strengthened further over the deployment period.

First, the acceleration of Europe's energy transition continues to provide a supportive backdrop for renewable generation and related infrastructure. The EU's Fit for 55 package, the REPowerEU programme, and the broader reorientation of European energy security have reinforced the investment case for scalable renewable energy platforms across the Three Seas region, where the need for new capacity remains substantial.

Second, the modernisation of transport infrastructure across Central and Eastern Europe is increasing demand for more efficient, interoperable and lower-emission logistics solutions. The revised TEN-T Regulation, including electrification and ERTMS deployment requirements across core network corridors, provides an important long-term framework for rail infrastructure upgrade and fleet modernisation. Together with the shifting geography of European manufacturing and trade flows, this supports the long-term relevance of the Fund's rail and port-related assets.

Third, demand for digital infrastructure in the region continues to strengthen. Structural constraints in some of Western Europe's most established data centre markets are increasingly directing attention toward Central and Eastern Europe, where improving infrastructure availability and access to renewable power create a favourable environment for further development. This trend is further supported by the EU Digital Decade Policy Programme 2030, the Gigabit Infrastructure Act, and broader European investment in secure and resilient digital connectivity.

More broadly, the institutional and geopolitical relevance of the Three Seas region has become more pronounced since the Fund was established. The continued evolution of the 3SI, alongside wider European efforts to strengthen connectivity, resilience and strategic autonomy, has improved the long-term context in which the Fund's portfolio companies operate.

**Looking ahead, we believe the portfolio is well positioned to benefit from the same long-term structural trends that underpinned the Fund's original investment thesis, many of which have strengthened further over the deployment period.**

Taken together, these developments reinforce our conviction that the Fund's portfolio is positioned to remain both resilient and relevant in the years ahead. As the region continues to close its infrastructure gap, we believe 3SIIF's assets are well placed to contribute to that process while continuing to generate lasting economic and strategic value across the Three Seas region.

*Mon Przew*



# 7 Annexes

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Greenergy Data Centers

# 7.1 Technical Definitions and Terminology

## Capital Expenditure (CAPEX)

Expenditure incurred by portfolio companies on the construction, acquisition or upgrading of fixed assets such as transport infrastructure, energy generation facilities or digital infrastructure. In the economic modelling, CAPEX primarily drives short-term demand-side effects during the investment phase.

## Operational Expenditure (OPEX)

Recurring expenditure associated with the ongoing operation and maintenance of assets, including labour, energy, materials and purchased services. OPEX generates sustained economic effects over the operational lifetime of the assets and is the dominant driver of long-term economic impacts.

## Direct Effects

Economic effects generated by the portfolio companies' own activities. These include the companies' direct contribution to gross value added, employment and tax revenues arising from their investment and operational activities.

## Indirect Effects

Economic effects arising along the supply chain as a result of purchases of intermediate goods and services by portfolio companies and their suppliers. Indirect effects capture additional production, employment and tax revenues generated in upstream sectors of the economy.

## Induced Effects

Economic effects generated by increased household consumption financed by labour income earned by employees of portfolio companies and firms within their supply chains. This consumption supports further rounds of production, employment and tax revenues across the economy.



### Supply Chain-related Effects

The combined set of direct, indirect and induced effects generated through production networks and household consumption as a result of CAPEX and OPEX undertaken by portfolio companies supported by 3SIIF.

### Demand-side Effects

Short- to medium-term economic effects driven by expenditure flows associated with CAPEX and OPEX. These effects operate primarily through Keynesian multiplier mechanisms, whereby an initial increase in spending leads to successive rounds of income generation and economic activity.

### Supply-side Effects

Long-term economic effects reflecting improvements in productive capacity, productivity, cost efficiency and competitiveness. Supply-side effects arise from investments in transport, energy and digital infrastructure and persist beyond the investment phase, supporting economic performance even after expenditure has ceased.

### Gross Domestic Product (GDP)

A measure of the total value of goods and services produced in the economy. In the modelling, GDP impacts are approximated using gross value added generated across sectors and countries.

### Gross Value Added (GVA)

The value of output produced by a sector after deducting the value of intermediate inputs. GVA is the main building block of GDP and the primary indicator used to measure economic activity in the modelling framework.

### Employment Supported

The number of jobs sustained across the economy as a result of direct, indirect and induced effects associated with CAPEX and OPEX. Employment figures are expressed as average annual jobs supported.

### Tax Revenue Effects

Additional public-sector revenues generated as a result of economic activity stimulated by CAPEX- and OPEX-related effects, including value-added tax (VAT), personal income tax, corporate income tax, social security contributions and excise duties.

### Investment Spillovers

Additional private-sector investment induced by higher profitability generated through economic activity enabled by 3SIIF-supported investments. In the analysis, spillovers reflect reinvestment by firms benefiting from increased demand and improved operating conditions.

### Gross Operating Surplus (GOS)

A national-accounts measure of operating profits, defined as gross value added less compensation of employees and production taxes (net of subsidies). GOS is used as a proxy for profits when estimating investment spillovers.

### Counterfactual Analysis

An analytical approach used to assess the impact of an intervention by comparing a scenario with the investment to a hypothetical scenario without it. Differences between the two scenarios represent the economic effects attributable to the intervention.

### Input-Output Model

A quantitative framework describing inter-industry relationships within an economy. Input-output models trace how changes in final demand affect production, value added, employment and income across sectors through supply-chain linkages.

### Macroeconomic Modelling

A framework analysing economy-wide relationships between production, income, consumption, investment and trade. In this report, macroeconomic modelling is used to estimate cumulative economic impacts across countries and over time.

### **HERMIN Macroeconomic Model**

A large-scale macroeconometric model used to assess the short- and long-term economic impact of public and private investment programmes. In this report, HERMIN is applied to quantify long-term supply-side effects associated with infrastructure investments.

### **SCOPE 1**

Direct emissions from owned or controlled sources.

### **SCOPE 2**

Indirect emissions from the generation of purchased energy.

### **SCOPE 3**

All indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

### **SFDR**

The EU Sustainable Finance Disclosure Regulation 2019/2088.

### **GHG Greenhouse Gas**

ESG Environmental, Social and Governance.

### **PAI**

Principal Adverse Impacts.

### **ESMS**

Environmental & Social Management System - a formal system governing how 3SIF identifies, assesses, manages and monitors environmental and social (E&S) risks throughout the investment lifecycle.

### **E&S**

Environmental and Social

### **ESAP**

Environmental & Social Action Plan – a binding or best-endavours plan defining required environmental and social actions, timelines and responsibilities for portfolio companies.

### **ESDD**

Environmental and Social Due Diligence

### **DFI**

Development Finance Institution

### **IFC**

International Finance Corporation

### **DFC**

U.S. International Development Finance Corporation

### **Carbon Footprint**

Total GHG emissions per euro invested (tCO<sub>2</sub>e/€m invested).

### **GHG Intensity**

Tonnes of CO<sub>2</sub>e emitted per euro of revenue (tCO<sub>2</sub>e/€m revenue).

### **PCAF (Partnership for Carbon Accounting Financials)**

Partnership for Carbon Accounting Financials ('PCAF') Part A - Financed Emissions Third Addition (2025).

### **UNGC**

United Nations Global Compact.

### **OECD**

Organisation for Economic Co-operation and Development.



BMF Port Burgas

## 7.2 Methodology & Data Sources

### 1. EY SPECTRUM (used in section 4.1)

The tool that is most commonly used for the quantitative assessment of the sector's impact on the economy is the input-output model. This methodology was first proposed by Wassily Leontief, a Nobel prize laureate in economics. It allows us to estimate the demand impacts based on the data on the activity of the analyzed sector, as well as the information provided by statistical offices, the so-called input-output tables.

These tables describe, in a statistical manner, the relationships between particular sectors of the economy. First, they distinguish the industries from which a given sector purchases goods and services required to generate its own production. Second, they show how the products generated by a given sector are used by other industries in their production process.

**EY Spectrum model is based on the input-output model and it allows distinguishing the following types of effects:**

- Direct effect in the form of the portfolio company's own value added, employment as well as taxes paid;
- Indirect effect arising from the demand for goods and services provided by other companies along the whole supply chain (suppliers of the first and subsequent orders) and
- Induced effect as a result of consumer spending of persons employed directly by the portfolio company, as well as those working in companies be-

longing to its supply chain, which leads to yet additional production, value added, employment, and government revenues. One major limitation of the input-output tables is that for the vast majority of countries, such tables are only available at the national level, which does not allow us to directly track the linkages between firms and industries at more disaggregated, regional levels.

Moreover, EY Spectrum is an extended input-output model that also allows distinguishing the regional economic effects. The model takes into account not only what other sectors supply to a given sector, but also where the suppliers are located. It establishes the spatial spread of economic effects by tools of spatial panel econometrics. What it ultimately determines, for each pair of sectors, is the geography of the regional trade. Two key factors are taken into account:

- The distance between regions – in some sectors, e.g. basic services, enterprises are less willing to purchase from remote suppliers, long-distance transportation costs and options vary across different kinds of products,
- Limitations on the availability of certain types of goods/services in some geographic areas – e.g. some industries are often clustered regionally.

### Induced effects in EY SPECTRUM

The calculation of induced effects in EY Spectrum requires the IO table to be extended. We expand the A matrix (input-output matrix) by adding a new sector representing households. Its row represents the households' income, which is based on the compensation of employees, reduced by the fraction of household income that amounts to the tax wedge and savings rate (because these parts of the household income do not constitute the income that will generate additional induced effects for the economy). This vector of values (for each sector of the economy) shows how much households employed in a given sector spend in the economy. Next, this vector is divided by each sector's global output to calculate the share of income of households employed in a given sector

in the global output of the sector.

Household's sector column represents the households' expenditure and is equal to the household consumption share. This consumption share indicator amounts to the share of final consumption expenditure by households for each sector in the total final consumption expenditure by households, the total being increased by taxes less subsidies on products and the use of imported products (because these parts of the household consumption expenditure do not constitute the amounts that will generate additional induced effects for the economy).

Another modifications to the A matrix involve the addition of a second new sector representing the company/investment project/sector under analysis. The row (income) is a vector of zero values and the column (expenditure) contains a vector of the subject's expenditure in each sector. What is more, in the case of sector analysis, values in the existing row and column corresponding to the given sector need to be changed to zero (in order not to allow for the return of expenditure resulting from the increase in global output in the exogenous sector in the next iterations of the simulation, which would lead to a greater increase in production than the initial impulse).

### Decomposing the direct, indirect and induced effects

Next steps include the calculation of the inverse Leontief matrix:  $\text{inv}(L) = (I-A)^{-1}$ . Impulse vector points to the last sector as the one where the impulse is registered. The multipliers are obtained by the multiplication of the inverse Leontief matrix and the vector of impulse. The multiplier for the households sector should be deducted as it doesn't represent additional economic effects. These multipliers represent total demand effects, i.e. the sum of direct, indirect and induced effects. In order to obtain the induced effects, the process needs to be repeated without the extension of the A matrix by the households sector, which will deliver the indirect effects. Therefore, the induced effects are obtained by deducting the direct and indirect effects from the value of total demand effects.

The description above refers to the calculation of effects in terms of global output. The obtained values are the basis for the calculation of effects on other indicators, e.g. employment or gross value added. Effects on gross value added for each sector are calculated by multiplying the effects on the global output by the share of gross value added in global output in a given sector. The calculation of employment effects also includes a productivity correction in order to account for the change in productivity since the time for which the IO tables are dated.

### **The methodology has been published in peer-reviewed academic journals:**

(Torój A. “Construction of multiregion–multisector input-output tables: a spatial econometric approach for Poland”, *Spatial Economic Analysis*, 2021, and Torój, A. (2024). *Estimating high-resolution interregional input-output tables: a Bayesian spatial approach*. *Economic Systems Research*, 36(3), 353–377. <https://doi.org/10.1080/09535314.2024.2358357>).

## 2. Economic impact of 3SIIF investment operations (econometric panel models used in section 4.2)

Spillover effects on investment are estimated by assessing how economic activity enabled by 3SIIF translates into additional profits for firms operating along the supply chain or benefitting from induced effects that in turn further stimulates the investments.

- In the first step, additional profits generated by 3SIIF-supported activity are approximated at the sector and country level using national accounts data. For each sector in a given country, we multiply estimated increase in value added attributable to 3SIIF (EY Spectrum-based outcomes) by the share of Gross Operating Surplus (GOS – a proxy for profits) in Gross Value Added (GVA).

- In the second step, the analysis translates these additional profits into investment effects. To do so, an econometric model was estimated using a panel of EU countries, linking investment activity to profitability and macroeconomic conditions. The model was estimated using a two-way fixed effects estimator, controlling for both country-specific and time-specific effects. Gross operating surplus (expressed relative to GDP) is included as the key explanatory variable, alongside controls for labour market conditions (unemployment rate) and financing conditions (bond yields).
- The estimation results indicate a statistically significant and economically meaningful relationship between profitability and investment. In particular, the coefficient on GOS suggests that, on average, approximately 25% of additional gross operating surplus is reinvested by firms in EU countries. The estimated effects are robust and consistent with economic intuition, with higher unemployment and higher bond yields associated with lower investment activity.
- This estimated reinvestment rate is then applied to the additional GOS generated by 3SIIF-enabled activity to quantify investment spillovers. These spillovers reflect new investment undertaken by firms that benefit from increased demand, improved profitability, or expanded market opportunities as a result of 3SIIF-supported projects.

## 3. The HERMIN Macroeconomic Model (used in section 4.3)

HERMIN is a large-scale macroeconometric model designed to assess the macroeconomic impact of investment programmes. It is one of the principal analytical tools used within the European Union to evaluate the effects of investment interventions, in particular EU Cohesion Policy, in both the short and long term. The model can be applied to historical analysis as well as to forward-looking, projection-based assessments, making it suitable for ex post and ex ante evaluations.

A key strength of HERMIN lies in its ability to capture not only short-run demand-side effects, but above all long-term supply-side effects of investment. In particular, the model quantifies the impact of investments in core infrastructure, research and development (R&D), human capital, and support for the enterprise sector. These investments raise the productive capacity of the economy by improving labour productivity, enhancing cost competitiveness, fostering innovation, and increasing the efficiency with which labour and capital are utilised.

The HERMIN models are positioned between purely theoretical and purely empirical modelling approaches. They represent a pragmatic compromise between highly theory-driven frameworks, such as Dynamic Stochastic General Equilibrium (DSGE) models, and purely data-driven approaches, such as vector autoregression (VAR) models. At the same time, HERMIN models avoid restrictive theoretical assumptions that are often difficult to accept in policy evaluation, including full economic rationality or the automatic tendency of the economy to converge to a general equilibrium.

### Counterfactual Impact Assessment

The assessment of interventions within the HERMIN framework is conducted through counterfactual analysis. This approach seeks to isolate changes in the development path of a country or region that arise solely as a result of implemented investment. Other potential determinants of economic performance—such as developments in international markets or changes in macroeconomic policy by central authorities—are deliberately excluded. These factors contribute to the so-called apparent effect of an intervention but are not directly linked to investment expenditure.

Two scenarios are constructed: a baseline scenario incorporating analysed investment and a counterfactual scenario in which such intervention does not occur. The differences in the values of key macroeconomic indicators between these two scenarios provide a quantitative measure of the impact of investment.

### Model Structure and Economic Mechanisms

HERMIN distinguishes five sectors of the economy: manufacturing (the main internationally traded sector), market services, non-market services, building and construction, and agriculture. The model is organised into three interdependent blocks—supply, absorption, and income—which together form an integrated system of behavioural and identity equations consistent with the structure of national accounts.

Conventional Keynesian mechanisms constitute the core of the HERMIN framework, particularly in explaining short-term demand-side effects. At the same time, the model incorporates important neoclassical features. Production is determined not only by private and public consumption, but also by the availability and efficient use of production factors. In manufacturing, output depends both on demand conditions and on cost competitiveness.

Factor demand in manufacturing and market services is derived from a neoclassical optimisation process, based on a constant elasticity of substitution (CES) production function and relative factor prices. Wage formation incorporates a Phillips curve relationship through the wage bargaining mechanism, providing an additional channel through which relative prices influence economic outcomes.

### Demand- and Supply-Side Effects

In counterfactual evaluation studies, HERMIN generates two broad categories of effects. Demand-side effects arise through the Keynesian multiplier mechanism. Investments increase the income of programme beneficiaries, leading to higher consumption and investment, greater output across sectors, and further rounds of income generation, ultimately raising GDP.

Supply-side effects emerge primarily in the medium to long term, including after the completion of fund implementation. These effects are associated with the development and modernisation of infrastructure, higher competitiveness and innovativeness in the enterprise sector, and increases in both the quantity and quality of human capital. Their quantification relies on parameters govern-

ing the scale of supply-side spillovers, known as spill-over elasticities. These are specified for output and labour productivity in three key areas: basic infrastructure, human capital, and R&D.

**Detailed methodological discussions of the HERMIN model can be found, *inter alia*, in:**

- *Mogila, Z., Miklošovič, T., Lichner, I., Radvanský, M. and Zaleski, J. (2022), Does Cohesion Policy help to combat intra-country regional disparities? A perspective on Central European countries, Regional Studies, DOI: 10.1080/00343404.2022.2037541.*
- *Mogila, Z. (2019), Development of Macroeconomic HERMIN Models in Poland in the Context of Evaluation Studies, in: Mogila, Z., Zaleski, J., Pokorski, J., Szut, J. and Wyszynska, T. (eds.), The role of macroeconomic modelling in the evaluation of public programmes and policies, Polish Agency for Enterprise Development, Warsaw.*
- *Bradley, J. and Untiedt, G. (2008), The COHESION system of HERMIN country and regional models: Description and operating manual, Version 3, GEFRA, EMDS, Münster.*

## 4. Amber operational data methodology (section 3)

The operational data disclosed in this report has been collected from portfolio companies through a structured data request coordinated by Amber, and cross-checked against the regular monthly reporting submitted by each portfolio company. The request covered operational expenditures, capital expenditures, annual average FTEs, tax and revenues, reported on a country-by-country basis and for the period from the date of 3SIIF's acquisition of each investment to the reporting cut-off date. The data was sourced from portfolio companies' existing internal financial, operational and management reporting systems, without requiring any company to establish new reporting processes solely for the purposes of this report.

The resulting dataset was consolidated by Amber and presented at portfolio level, with geographic disaggregation where available. Differences in reporting scope, accounting treatment and data availability across portfolio companies may affect the completeness and comparability of certain metrics.

## 5. Amber E&S data methodology (section 5.1)

The ESG data disclosed in this report has been collected from portfolio companies and quantified through Amber's bespoke ESG data collection and analysis tool. The data is consolidated according to the same principles as the financial statements. The PAI indicators disclosed in section 5.1 are for the reference period from 1 January 2025 to 31 December 2025 and is aligned with the calculation methodology set out in the SFDR Regulatory Technical Standards ("RTS"). In some instances, data from underlying portfolio companies was not yet available for this reference period, so data from the previous reference period was used as an estimation.

The scope 1, 2 and material 3 emissions of underlying portfolio companies 'attributed' to the fund in accordance with the principles of 'PCAF (2025) The Global GHG Accounting and Reporting Standard Part A: Financed Emissions, Third Edition' as well as the 'Greenhouse Gas Protocol Corporate Standard (2004), Revised Edition'. An operational control approach was applied to define the Company's organisational boundary. Scope 2 emissions have been reported using a market-based approach, in line with the GHG Protocol Scope 2 Guidance (January 2015), which accounts for certified renewable electricity procured by portfolio companies, where applicable.

# Disclaimer

**This Impact Report provides a factual and descriptive overview of The Three Seas Initiative Investment Fund (3SIIF), its portfolio composition and the operational context of assets across transport, energy and digital infrastructure sectors. The information presented supports transparency regarding the Fund's investment activities. This report is non-promotional in nature and does not describe the Fund as pursuing environmental or social objectives or promoting environmental or social characteristics.**

This report is prepared exclusively **for existing Limited Partners of 3SIIF** as a portfolio reference document following full capital deployment. It is not intended for public distribution, marketing purposes, or use in connection with fundraising activities for successor vehicles or other investment products.

This report does not constitute impact reporting and makes no claims regarding attribution of sustainability outcomes or intentional ESG improvement by the Fund. The Fund maintains an SFDR Article 6 classification and has done so throughout its operational period. Operational features described throughout this report – such as installed capacity, connectivity, or technical specifications – **reflect the inherent characteristics of infrastructure assets and the broader system context** in which they operate. They are presented in a descriptive manner and do not imply environmental or social objectives.

Where economic modelling is presented, it has been prepared by EY on an illustrative basis, providing a modelled view of macroeconomic activity associated with investment expenditures (including Gross Value Added, employment, and tax revenue). These outputs are dependent on defined assumptions and should not be interpreted as impact claims or attributions of outcomes to Fund management activities.





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