

# CARNOT EFFICIENT ENERGY

## IMPACT REPORT 2023



In cooperation with:

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# CARNOT EFFICIENT ENERGY

The Carnot Efficient Energy Fund is an impact investment fund. It invests in listed companies that develop and produce energy efficient products and technologies reaching people all around the world. In addition to the financial return, the fund investor, as co-owner of the portfolio companies, generates a substantial positive effect in terms of the UN's sustainable development goals. This impact report aims to illustrate and quantify this effect. Carnot Capital's full impact investing approach also relies on engagement to map, measure and create impact.

*The new disclosure requirements on sustainability in the financial services sector (SFDR, Sustainable Finance Disclosure Regulation) and the nomenclature on sustainability (EU taxonomy) require an addition to the Carnot Impact Report. We now disclose the proportion of taxonomy-compliant revenues of the companies in the fund and include the adverse sustainability impacts (PAI, Principal Adverse Impacts) in the SDG mapping.*

Carnot Impact Investing is a blended approach, which differentiates itself through the combination of financial as well as social and environmental performance. The effects (impact) are created in seven steps:

1. Topic of energy efficiency
2. Controversial activities (ESG top-down analysis)
3. Financial analysis
4. Sustainability (ESG bottom-up analysis)
5. Impact validation
6. Engagement
7. Negative Impact: New, with Heatmap per SDG & Investment (Principal Adverse Impact PAI)

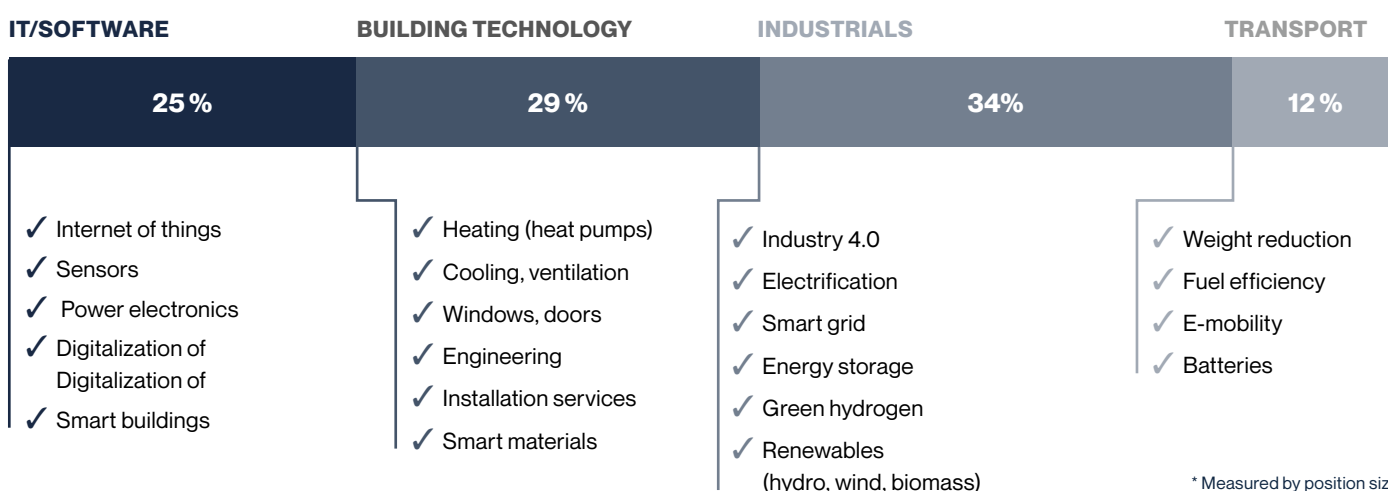
In the appendix, the report is supplemented by examples, external reports on sustainability and the carbon footprint as well as information on Carnot Capital memberships and publications.

## 1. Topic of Energy Efficiency

The Carnot Efficient Energy Fund invests exclusively in companies with products, services and development projects that reduce energy consumption. The reduction of energy consumption must be part of a company's strategy. Such companies can be found in the building technology, industry and transport sectors. IT and software companies are important in all areas, but are reported as a separate segment.

### 1. Fields of Activity of the Portfolio Companies\*

as of 31/12/2023



\* Measured by position sizes

## 2. Controversial Activities

Potential portfolio companies are examined for controversial activities and excluded if necessary due to their negative impact (negative screening). For certain activities, a turnover tolerance threshold is applied.

## 3. Financial Analysis

In our opinion, sustainability and the impact are only guaranteed if the company has a solid financial basis. We expect

- a) a strong balance sheet,
- b) an economic benefit of the products for the buyers,
- c) a good return on capital employed (ROCE).

A high ROCE promotes growth and innovation, which in turn reinforces the positive impact.

## 4. Sustainability Analysis

In the sustainability analysis of portfolio candidates, we investigate the strategic significance of sustainability and assess

- a) environmental (products, production, supply chain),
- b) social (suppliers, employees, employer, customers) and
- c) corporate governance issues.

2. Controversial Activities		31/12/2023	31/12/2022
	Tolerance Threshold	Portfolio Share	Portfolio Share
Weapons (systems, components)	5 %	0.1%	0.1%
Nuclear energy (power plants, technology)	5 %	0.2 %	0.3 %
Extraction of fossil fuels	0 %	0 %	0 %
Land mines, cluster munitions	0 %	0 %	0 %
Genetic engineering	0 %	0 %	0 %
Addictive substances (tobacco, alcohol)	0 %	0 %	0 %
Sex trade	0 %	0 %	0 %
Gambling	0 %	0 %	0 %

3. Relevant Financial Figures	31/12/2023	31/12/2022
Average debt-equity ratio (net debt/EBITDA)	0.7 x	0.3 x
Average return on capital employed (ROCE)	37.3 %	35.4 %

4. Sustainability (Bottom-Up)	31/12/2023	31/12/2022
Share of sustainable companies in the portfolio	100 %	100 %
Average number of points	78	76
Scale from 0-100, considered sustainable from 50 points		
EU taxonomy-eligible turnover	57.5 %	38.4 %
EU taxonomy-aligned turnover	5.1 %	n.a.



## b) Portfolio Share of Impact Companies

The strict focus on energy efficiency means that all positions have a positive environmental impact (excluding cash portion).

## c) Share of Revenues of Companies with Impact Products

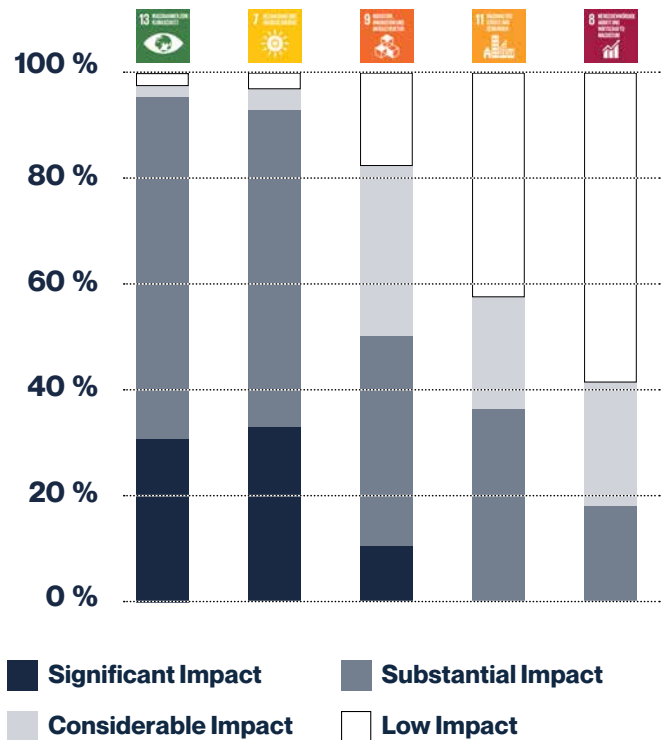
In our impact analysis, we determine which part of a company's revenue has a positive impact. On average, the portfolio companies generate more than half of the turnover with products, services and projects

with a positive impact (see table for details). A fund investment of CHF 1 million accounts for approximately CHF 0.4 million of revenues with a positive environmental impact. Part of this revenue has a social impact at the same time, as outlined (SDGs 9.4 and 11.2).

### 5. b) Portfolio Share with Impact as of 31/12/2023

**Carnot Efficient Energy** **100 %**  
**Portfolio share with environmental impact** **100 %**

	<b>Climate Action</b>	<b>97.6 %</b>
	<b>Affordable and Clean Energy</b>	<b>96.9 %</b>
	<b>Industry, Innovation, Infrastructure</b>	<b>82.4 %</b>
	<b>Sustainable Cities and Communities</b>	<b>57.6 %</b>
	<b>Responsible Consumption and Production</b>	<b>41.5 %</b>



5. c) Revenues with Impact Products	31/12/2023	31/12/2022
Impact products* revenue per CHF 1 million investment amount	CHF 365'000**	CHF 328'000**
As % of total sales revenue of the portfolio companies	62.8 %	61.1 %
** Price/Sales	1.72	1.86

\*pure environmental Impact

#### d) Research & Development of Impact Products

A significant positive impact results from the research and development expenses of the portfolio companies. Measured by the turnover of the companies, the expenditure amounts to about 3.7%. On a fund investment of CHF 1 million, Twentyone thousand francs of development expenditure are spent to improve energy efficiency.

#### 6. Engagement

Carnot uses its numerous contacts with the executives of the portfolio companies to stimulate changes in the interests of sustainability. The basis for this engagement is primarily derived from the impact analyses. In 2023, we primarily discussed focusing on circular economy issues and corporate governance aspects. The most important engagements are as follows:

- With a chemical sector company, we continued the discussion with top management on the topic of recycled plastics and plastics made from biological material. We recommended, with a detailed rationale, to invest more in the development of bioplastics.
- With a component manufacturer for commercial vehicles, we discussed the trends in electromobility and recommended focusing specifically on the electrification of buses.
- At an automotive supplier, we advocated for good corporate governance and demanded measures in corporate management to ensure the success and preservation of jobs.

#### 7. Negative Impact (Principal adverse impact (PAI))

The European Union (EU) regulation on sustainability-related disclosure requirements in the financial services sector (SFDR) defines 18 core indicators that can have an adverse impact. Mirroring the Positive Impact (considerable, substantial, significant impact), the Negative Impact (adverse, negative, strong negative impact) describes opposite consequences.

The Carnot Impact process focuses on reducing consumption by making better, i.e. more efficient, use of the product factors employed. Concrete fields of application are the topics of energy and natural resources. Focusing on the issue of reducing consumption is an effective filter, so that most companies with significant adverse impacts in climate indicators and other environment-related indicators do not even enter the investment universe. By verifying and documenting that sustainability is part of the company's strategy, the likelihood of significant adverse impacts in the areas of social and employment issues, respect for human rights, and combating corruption and bribery is greatly reduced. By excluding companies with controversial activities, the adverse impacts are further reduced. Finally, portfolio companies are screened individually for significant adverse impacts (PAIs) using an ESG bottom-up analysis, taking into account the industry-specific profile of environmental and social risks. PAIs are examined, recorded, commented on, and assessed against the SDG grid. At the portfolio level, PAIs are reduced through engagement and through non-investment or divestment.






<b>5. d) R &amp; D Expenditure for Impact Products</b>	<b>31/12/2023</b>	<b>31/ 12/ 2022</b>
<b>R &amp; D expenditures per CHF 1 million investment amount</b>	CHF 21'000*	CHF 20'000*
<b>As % of total sales revenue of the portfolio companies</b>	3.7%	3.7%
<b>* Price/Sales</b>	1.72	1.86

<b>6. Engagement</b>	<b>31/ 12/ 2023</b>	<b>31/ 12/ 2022</b>
<b>Opened engagement initiatives</b>	<b>1</b>	<b>1</b>
Closed cases	2	3
<b>Pending cases</b>	<b>7</b>	<b>8</b>

The table 7. a) explains how adverse sustainability impacts (PAIs) are mapped to the relevant SDGs in the Carnot Impact process (SDG Mapping).

The adverse impacts are now presented in a heat map in the same way as positive ones, but with reversed signs from adverse to negative to strong negative impact (see Table 7. b).

<b>7. a) Carnot Impact Process: Principal Adverse Impact (PAI) and SDG Mapping</b>		
<b>Adverse sustainability indicator</b>	<b>SDGs affected</b>	<b>Summary remarks</b>
<b>1. GHG emissions</b>		The GHG emissions Scope 1/2/3 of portfolio companies are assessed. Companies with significant GHG emissions are assigned a negative impact with regard to SDG 13. The investment guidelines exclude the particularly problematic producers of fossil raw materials. Operators of coal-fired power plants are only considered if their overall generation mix has a low carbon footprint. Companies with other critical activities, such as airline operations, chemicals, steel or cement production, are only considered for investment if they undertake extraordinary efforts, particularly in research and development, to make the company and the industry as a whole more CO2-friendly.
<b>2. Carbon footprint</b>		See PAI 1
<b>3. GHG intensity of investee companies</b>		The GHG intensity of the companies is analysed and compared to the GHG reduction effects of the products in the Energy Efficiency theme - Carnot Capital's main investment theme. When assessing PAI, not only the effective emission intensity is evaluated, but also the efforts to reduce emissions, especially in the area of R+D. Portfolio companies outside the energy efficiency theme are assigned a negative score on SDG 13 if they produce energy intensively.
<b>4. Exposure to companies active in the fossil fuel sector</b>		Companies that extract fossil raw materials are excluded from the investment universe. Companies that offer technologies and services for such companies are not excluded in principle. For such companies, the GHG impact of the technologies and services (as in other industries) is compared with the GHG impact of the industry standard technology.
<b>5. Share of non-renewable energy consumption and production</b>		Electricity producers with fossil power plants are only considered as an exception (see PAI 1). Energy intensive companies with a high share of fossil energy and no positive impact in energy efficiency receive a negative SDG 13 rating.
<b>6. Energy consumption intensity per high impact climate sector</b>		A high energy intensity is assessed negatively in relation to SDG 13 if the products have no or only a low energy saving effect or if the proportion of fossil energy in the energy mix is above average.



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**7. Activities negatively affecting biodiversity-sensitive areas**



A negative assessment with regard to SDG 14 & 15 is given to companies whose emissions significantly pollute water or soil, and companies whose products impair biodiversity and promote monocultures. Particularly critical are fertilizer manufacturers, manufacturers of pesticides, soil cultivation machines, plants for the pulp industry, river power plants, and shipping companies with ships without ballast water treatment.

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**8. Emissions to water**



Portfolio companies are screened for emissions to water and assessed negatively, if applicable, if they belong to a process industry (chemicals, food, waste recycling, recycling, etc.). In the case of companies in the fishing industry, efforts to prevent emissions are assessed and positive consideration is given to the fact that the industry produces animal proteins with low water consumption.

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**9. Hazardous waste and radioactive waste ratio**



Companies with nuclear power plants are excluded from the investment universe, except for shareholdings that are smaller than the exclusion threshold or activities in trading. Other companies are screened to determine whether hazardous waste is generated in production and whether it is treated without significant adverse effects. The PAI analysis also considers whether the products themselves generate hazardous waste, e.g. PVC.

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**10. Violations of UN Global Compact principles and Organisation for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises**



Companies known to have violated the OECD Guidelines for Multinational Enterprises are ranked with a negative impact on SDG 8. Particular caution is required for companies with substantial operations in countries with a poor ranking on the Corruption Index.

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**11. Lack of processes and compliance mechanisms to monitor compliance with UN Global Compact principles and OECD Guidelines for Multinational Enterprises**



Carnot checks whether the portfolio companies monitor compliance with the OECD Guidelines for Multinational Enterprises and whether they handle complaints. An assessment with regard to SDG 8 is negative (only) if the company does not document any efforts in terms of the concerns in the OECD Guidelines.

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**12. Unadjusted gender pay gap**



Carnot takes note of the companies' reporting on gender distribution and earnings gaps. However, we do not derive any strong negative or negative impacts in terms of the SDGs from this.

**13. Board gender diversity**



Cannot take note of gender diversity in governance bodies, but does not infer strong negative or negative impacts in terms of the SDGs.

**14. Exposure to controversial weapons (anti-personnel mines, cluster munitions, chemical weapons and biological weapons)**



Companies involved in controversial weapons are excluded from the universe. For other weapons, a tolerance threshold of 5% applies. These companies will be assigned a negative score on SDG 16.

**15. GHG intensity**

Not applicable (Investments in sovereigns and supranationals)

**16. Investee countries subject to social violations**

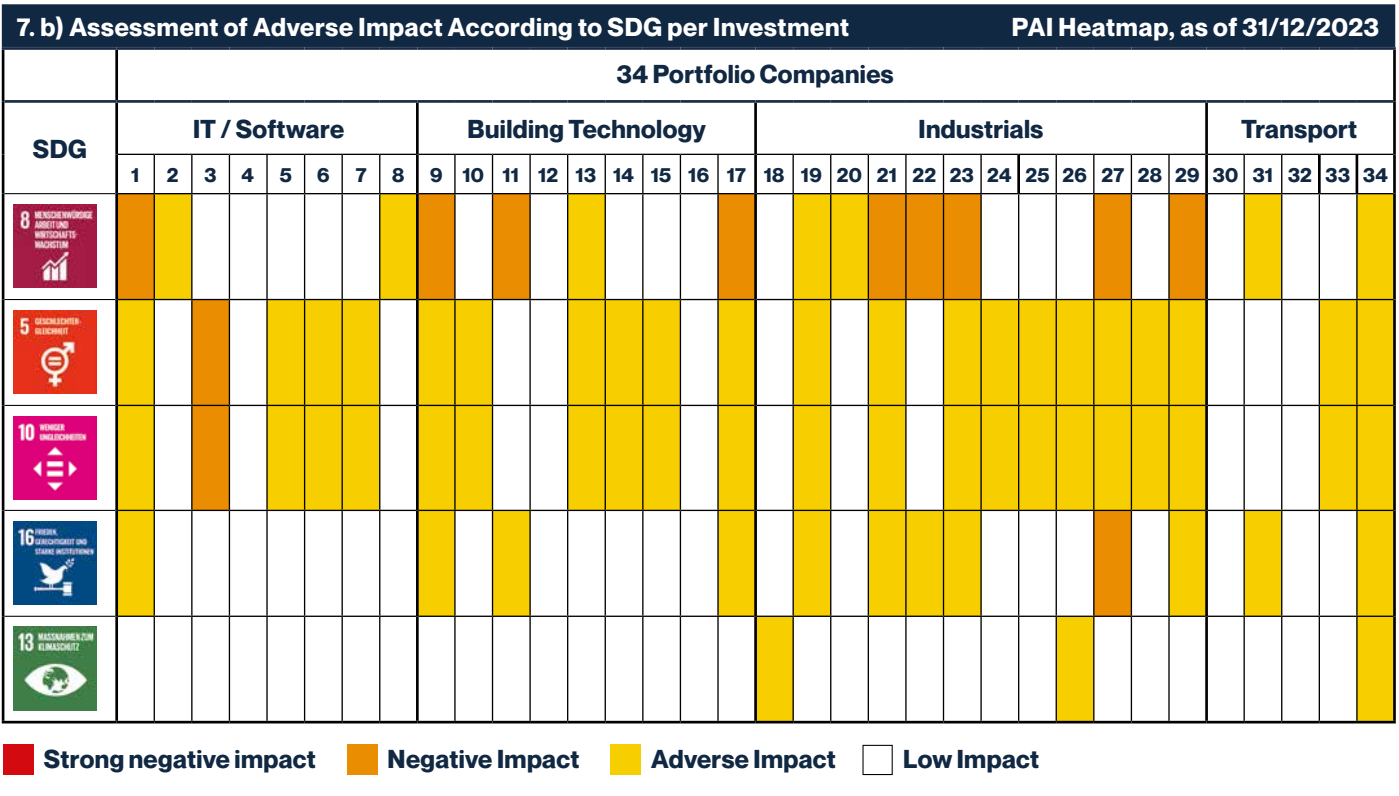
Not applicable (Investments in sovereigns and supranationals)

**17. Exposure to fossil fuels through real estate assets**

Not applicable (Investments in real estate assets)

**18. Exposure to energy-inefficient real estate assets**

Not applicable (Investments in real estate assets)



Adverse Impact Heatmap – Carnot Efficient Energy - December 2023

# APPENDIX

## Company and Products with Impact

### Details

\* Scale: significant, substantial, considerable, insignificant

## NEMETSCHEK GROUP



Resource-saving redesign of an old building

### IT/Software

Portfolio weight	2.4 %
Share of revenue from energy efficient products	90 %
ROCE	> 50 %
Net debt	0 x
R&D expenditure (% revenue)	21.6 %
Sustainability (0-100)	73
Environmental impact*: SDG 7/13	substantial
Social impact*: SDG 11	substantial

With Nemetschek software, energy-efficient buildings can be engineered and existing buildings can be redesigned while conserving existing structures. This saves energy, avoids waste and increases the quality of life in cities.



Engineering of a sawmill and biomass plant. Full digitalization, own electricity production from waste, CO<sub>2</sub> negative.

### Industry/renewable energy

Portfolio weight	2.3 %
Share of revenue from energy efficient products	70 %
ROCE	41 %
Net debt	2.5 x
R&D expenditure (% revenue)	20 %
Sustainability (0-100)	92
Environmental impact*: SDG 7/13/8	substantial
Social impact*: SDG 9	substantial

AFRY provides strategic advice to companies and cities on resource efficiency, is a planning partner at project level and carries out development assignments at product and technology level. Important topics are emission reduction in process industries, water and waste in cities, green buildings, trading systems for green energy and emission rights, transport planning or emission reduction in vehicles.



Analog semiconductors and sensors

### Transport/consumption reduction

Portfolio weight	4.3 %
Share of revenue from energy efficient products	33 %
ROCE	> 50 %
Net debt	0 x
R&D expenditure (% revenue)	11.1 %
Sustainability (0-100)	67
Environmental impact*: SDG 7/13/8	substantial
Social impact*: SDG 9/11	considerable

“Downsizing” the engine saves around 15 % on fuel. Melexis (Belgium) manufactures temperature sensors for cars with such engines as well as electric cars. Other Melexis sensors are used for the variable speed motor drives of cooling systems, which reduce power consumption by about 40 %.

## 1. Examples

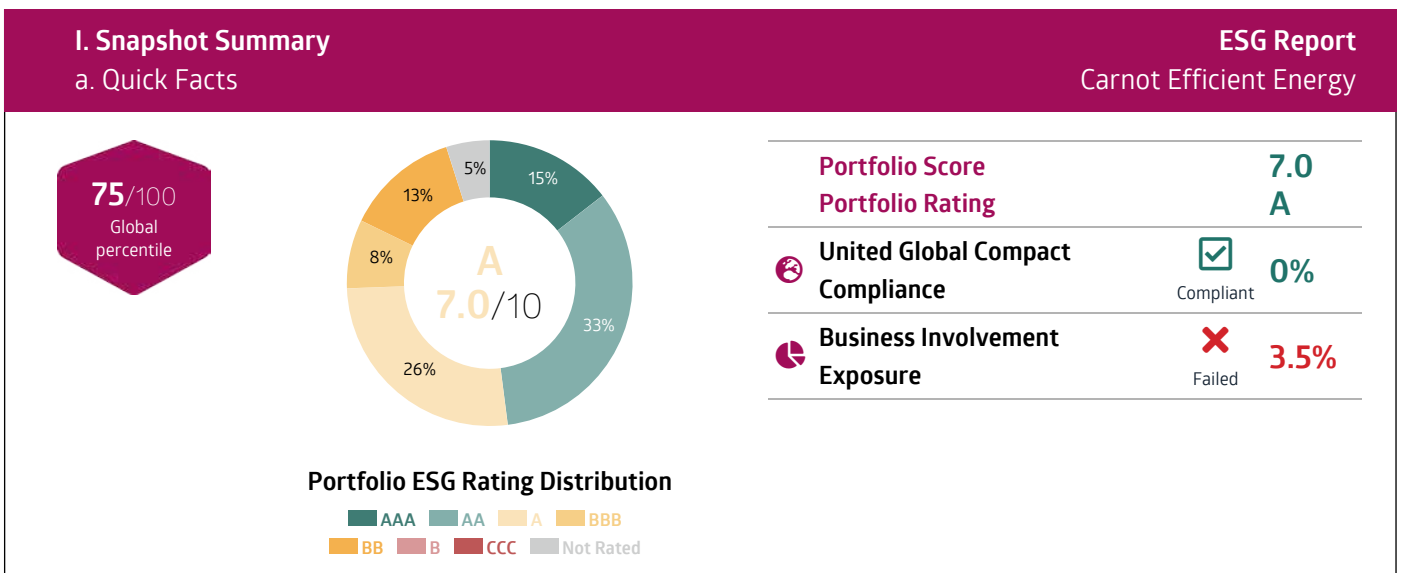
## 2. External Sustainability Assessment

We have the Carnot Efficient Energy Fund's sustainability reviewed externally by yourSRI. The analysis is based on the very comprehensive database of MSCI. The most important results are shown in the following overview (Snapshot Summary). It shows the sustainability rating (Portfolio Rating, maximum AAA), the ranking in the entire universe (global percentile), the rank in the peer group (peer percentile), the compliance with the United Nations Global Compact (United Global Compact Compliance) and the portfolio share of companies with controversial activities. The result of the external report corresponds to our internal assessment.

## 3. CO<sub>2</sub> Foot Print

The carbon footprint was created with Bloomberg, it uses data from ISS Ethix. The carbon footprint of the Carnot Efficient Energy Fund is much smaller than that of the overall market, broken down to a fund investment of EUR 1 million or EUR 1 million in portfolio companies' revenue. This analysis covers the company's CO<sub>2</sub> emissions in the combustion of fuel (Scope 1) and the emissions of the electricity suppliers (Scope 2) as well as the emissions contained in the other services and products purchased (Scope 3).

This analysis does not consider the CO<sub>2</sub> reduction effects that the products, services and projects of the companies generate. These effects are, in our opinion, particularly important under the impact aspect, which is why we make our own assessment (see 5. Impact Validation).



Source: yourSRI.com

Business Involvement Exposure failed: See 2. Controversial Activities, Tolerance Threshold

Carbon Footprint	as of 31/12/2023	
Carbon Footprint	Scope 1 & 2 Greenhouse Gas Emissions per Sales (tCO <sub>2</sub> e / EUR Mio revenue)	Scope 1 & 2 Greenhouse Gas Emissions per EVIC* (tCO <sub>2</sub> e / EUR Mio EVIC*)
<b>Carnot Efficient Energy</b>	45	23
<b>STOXX Europe 600 Index</b>	120	67

\* Enterprise Value including Cash

Source: Bloomberg

## 4. Memberships

Carnot Capital has committed as a signatory to implement the six United Nations Principles for Responsible Investment (UN PRI) in the investment process. Carnot Capital is a member of Swiss Sustainable Finance.

Carnot Impact Investing process follows 9 steps along the “Operating Principles for Impact Management”. The IFC of World Bank Group releases these rules.



## 5. Publications



Carnot Capital AG (December 2019), **Investments into Energy and Resource Efficiency with a Measurable Impact**, [https://25530849.fs1.hubspotusercontent-eu1.net/hubfs/25530849/Downloads/Research\\_Paper\\_Carnot\\_Impact\\_Investing\\_en.pdf](https://25530849.fs1.hubspotusercontent-eu1.net/hubfs/25530849/Downloads/Research_Paper_Carnot_Impact_Investing_en.pdf)



Carnot Capital AG, **Carnot Impact Investing: Overview & Case Study Belimo**, <https://www.carnotcapital.com/hubfs/Carnot%20Impact%20Case%20Study%20Belimo%20EN.pdf?hsLang=en>



Carnot Capital AG, **Carnot Impact Investing: Overview & Case Study Akasol**, <https://www.carnotcapital.com/hubfs/Carnot%20Impact%20Case%20Study%20Akasol%20EN.pdf?hsLang=en>

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# WHO IS CARNOT CAPITAL?

Carnot Capital is an investment management company, specialized in energy and resource efficiency. The company was founded in Zurich in 2007 and received the permission as an asset manager for collective investments by the Swiss Financial Markets Supervisory Authority FINMA in 2013. Carnot Capital manages the equity impact funds Carnot Efficient Energy and Carnot Efficient Resources investing in listed companies with products and technologies that lower the consumption of energy and natural resources. Due to rising scarcity and increasing environmental problems these companies benefit from structural growth. Investments comply with sustainability standards (ESG). Stocks are selected based on a value approach which sets the quality of the company into the centre, particularly profitability and the strength of the balance sheet.

Carnot Impact Investing is a blended approach which differentiates itself through the combination of financial as well as social-ecological performance criteria and the documentation of the positive effects of the companies (impact from ESG & SDG mapping).

The name Carnot Capital refers to the French physicist Nicolas Léonard Sadi Carnot (1796–1834) who was able to define the maximum physical efficiency of a steam engine. Improving energy efficiency is nothing more than increasing the level of efficiency when converting primary energy to useful energy. To a certain extent, we relate maximizing the degree of efficiency to our investment activities, applying strict risk-return criteria. And that's why our creed is: Investments featuring a maximum degree of efficiency.

[www.carnotcapital.com](http://www.carnotcapital.com)



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