

INVESTMENTS INTO ENERGY AND  
RESOURCE EFFICIENCY WITH A  
MEASURABLE IMPACT



Carnot Funds are Impact Investments | Research Paper 2.0 | December 2019



In cooperation with:



**BlueOrchard**  
Impact Investment Managers



**PRI** | Principles for  
Responsible  
Investment

# Impact. Beyond ESG.

IMPACT INVESTING IN NUMBERS

## 50%

of the turnover of the portfolio companies promotes the defined SDGs

## 0%

of the portfolio companies are active in controversial activities

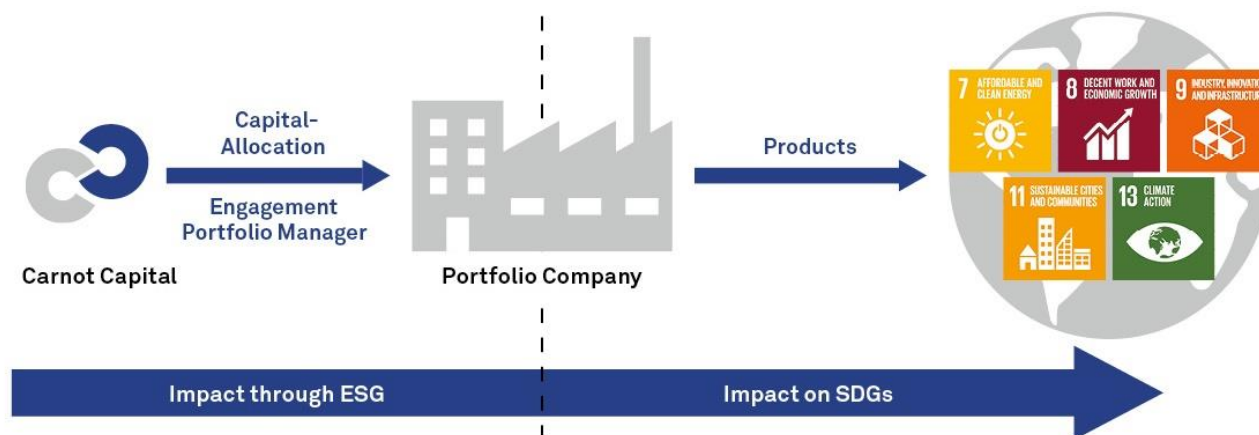
## 5.5%

of the portfolio companies' sales are invested in research and development of Impact products

FIVE SDGS ARE IN THE FOCUS OF THE CARNOT EFFICIENT ENERGY FUND



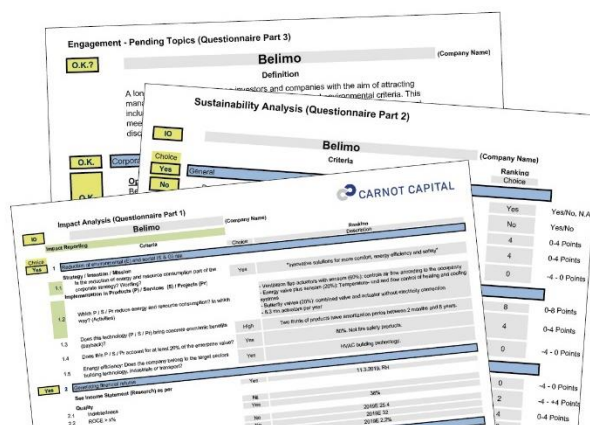
## The Carnot Impact Investing Process



Carnot Impact Investing comprises a targeted allocation of capital to companies with positive effects as well as a commitment by the portfolio manager. Source: Carnot Capital

## Carnot Impact Investing since 2007

- integrates ESG sustainability as a bottom-up process into impact analysis
- sees the fight against climate change as a business model with attractive opportunities
- does not demand a renunciation of consumption
- initiates active engagement in personal dialogue with the companies
- finds the innovative and promising companies





## Executive Summary: Carnot Impact Investing

Carnot Impact Investing addresses the consumption reduction of natural resources. The focus is on products, technologies and services that conserve natural resources or make more efficient use of them as production factors. Concrete fields of application are the topics of energy and natural resources.

1) Carnot Impact Investing promotes the reduction of energy and natural resource consumption.

In-depth financial analysis evaluates the return potential and ensures that financial return is a priority. Positive investment returns and positive societal impacts (sustainability<sup>1</sup>) are compatible.

2) Carnot Impact Investing prioritizes the financial return with the maximum possible consideration of positive social impacts (sustainability through impact).

In addition to a value approach with proven financial analysis, as a supervised "Independent Asset Manager of Collective Investment Schemes" and a specialist in equities an active selection utilizing a sustainability analysis (ESG filter) is used.

3) Carnot Impact Investing combines a value approach with a sustainability analysis (ESG filter) to a "blended approach" for active impact investors.

The sustainability analysis does not only comprise a negative screening (exclusion lists) but also uses a positive screening (ESG Rating) which is qualitatively deepened several times. Furthermore, the impact of products (external effects) are included in the qualitative and quantitative reporting by means of SDG mappings<sup>2</sup>.

4) Carnot Impact Investing uses SDG mappings to document the impact (sustainability of external effects) of selected portfolio companies in a qualitative and quantitative report.

### Reduction of energy consumption (= energy efficiency)

- 7. Affordable and clean energy
- 8. Decent work and economic growth
- 9. Industry, innovation and infrastructure
- 11. Sustainable cities and communities
- 13. Climate action



### Reduction of the consumption of natural resources (= resource efficiency)

- 2. Zero hunger
- 3. Good health and well-being
- 6. Clean water and sanitation
- 7. Affordable and clean energy
- 8. Decent work and economic growth
- 9. Industry, innovation and infrastructure
- 11. Sustainable cities and communities
- 12. Responsible consumption and production
- 13. Climate action
- 14. Life below water



Carnot Impact Investing is a blended approach, which differentiates itself through

- financial as well as
- socio-ecological

performance by combining these two qualities and revealing the positive effects they have achieved (impact on SDGs & from ESG).

<sup>1</sup> See Enquete Commission: Protection of Humanity and the Environment (1998), 3 Pillar-Model.

<sup>2</sup> United Nations (2015), Sustainable Development Knowledge Platform, SDGs.



## Abbreviations

CAPM	Capital Asset Pricing Model
CDP	Carbon Disclosure Project
COP	Conference of the Parties (UN-Climate conference)
CSR	Corporate Social Responsibility
EBIT	Earnings Before Interest and Taxes
ESG	Environmental, Social, Governance
EV	Enterprise Value (Capitalization + Net Debt – Net Cash)
EVPA	European Venture Philanthropy Association
FNG	Forum Nachhaltige Geldanlagen (Forum for Sustainable Investments)
GHG	Greenhouse gas
GIIN	Global Impact Investing Network
GRI	Global Reporting Initiative
HNWI	High Net Worth Individuals
IFC	International Finance Corporation (World Bank Group)
MDGs	Millennium Development Goals
PDC	Portfolio Decarbonization Coalition
ROCE	Return on Capital Employed
ROI	Return on Investment
SASB	Sustainability Accounting Standards Board SASB
SDGs	Sustainable Development Goals
SRI	Socially Responsible Investment
TBL	Triple Bottom Line
UNEP FI	United Nations Environment Programme Finance Initiative
UNFCCC	United Nations Framework Convention on Climate Change
UN PRI	UN Principles for Responsible Investment



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## 1. Definitions

### 1.1 Sustainability

The term is used in many ways but seems contradictory and often overused.

#### 1.1.1 Semantic Analysis

Sustainability means planning, maintaining balance acting responsibly.

Others understand it to mean humility, mindfulness, grandson suitability or just “doing the right thing”.

If something is sustainable, it is durable, sensible, preserving, enduring, environmentally friendly. But it can also be **effective**, incessant, long-lived, symbiotic, persistent, severe or profound.

#### 1.1.2 Scientific Definition<sup>3</sup>

The term sustainability comes from the forestry industry of the pre-industrialization age. As understood by "sustainable use" no more trees should be cut down than could regrow.

This economic understanding was developed along a discourse in research on "sustainable development" and started with the study by Meadows (1972, "The Limits of Growth" for The Club of Rome organisation). Maslow's Hierarchy of Needs (1970) brought a hierarchical and socio-psychological dimension of human needs into the discussion, with ecological goals predominating for the time being.

However, a general concept of "sustainability" did not materialize until 1987 in “Our Common future” also known as the Brundtland Report<sup>4</sup>: ***A development is sustainable if it "satisfies the needs of the present without risking future generations being unable to satisfy their own needs"***.

At the United Nations Conference on Environment & Development (UNCED)<sup>5</sup> in Rio de Janeiro in 1992, **Agenda 21** defined a global **vision for sustainable development**. In the interests of sustainable development, industrial policy must be adapted in the industrialized countries, since the industrialized countries consume considerably more resources in relation to the total population.

In emerging and developing countries, Agenda 21 focuses more on poverty reduction, population policy, education, health, drinking water and sanitation, sewage and waste management, and rural development. **Thus, the social dimension is placed globally as an equal goal alongside ecology and economy.**

#### 1.1.3 Definition today: The Three Pillars of Sustainability<sup>6</sup>

(1) The pillar of **economic** sustainability includes an economy that does not exploit natural resources, is sustainable in the long term, and is the foundation of general prosperity.

(2) The pillar of **environmental** sustainability deals with the preservation of nature and the environment for the next generation.

(3) The pillar of **social sustainability** relies less on intergenerational justice than justice between the north and south of the world. The basic needs of all people are to be secured and the access to the resources of this world needs to be distributed fairly.

### 1.2 UN Initiatives on Sustainability

In 1992, the United Nations (UN) launched the **Agenda 21** initiative (see 1.1.2) as a first global initiative on sustainable development. Agenda 21 is also criticized in some areas. The main points of criticism are the divergence of vision and reality, lack of transparency in agenda goals and implementation processes, use of ambiguous buzzwords, lack of democratic processes, cooperation with large corporations, the lack of debate on nuclear and genetic engineering and globalization and adherence to the "growth ideology". The UN reacts with new initiatives.

#### 1.2.1 Initiative 1999: Global Compact (Ten Principles)<sup>7</sup>

United Nations Global Compact is a global pact concluded between companies and the United Nations to make globalization **more social and ecological**. In it, a company declares that it will strive to meet certain minimum social and environmental standards in the future:

<sup>3</sup> See Wikipedia (2017) Keyword: Sustainability.

<sup>4</sup> See “Our Common Future” also known as the Brundtland Report (1987).

<sup>5</sup> See UNCED (1992), Agenda 21.

<sup>6</sup> See Enquete Commission: Protection of Humanity and the Environment (1998).

<sup>7</sup> United Nations (UN) Global Compact (1999).



### Human Rights

- Businesses should support and respect the protection of international human rights.
- Businesses should ensure that they are not complicit in human rights abuses.

### Work

- Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.
- Businesses should fight for the abolition of child labour.
- Businesses should work for the elimination of discrimination in hiring and employment.

### Environment

- Businesses should follow precautionary principles when dealing with environmental problems.
- Businesses should take initiatives to promote greater environmental awareness.
- Businesses should accelerate the development and diffusion of environmentally friendly technologies.

### Anticorruption

- Businesses should oppose all forms of corruption, including extortion and bribery.

It is criticized when the companies involved make no commitment to the Global Compact but abuse it as an advertising tool (green / blue washing). They benefit from the reputable reputation of the UN, without adhering to social and ecological minimum standards.

### 1.2.2 Initiatives after 2015: Sustainable Development Goals (SDGs)<sup>8</sup>

The Sustainable Development Goals are political objectives of the UN aimed at ensuring sustainable economic, social and environmental development. In transforming our world with the 2030 Agenda for Sustainable Development, the design of the goals emphasizes the importance of those who are at the center of sustainable development, and specially the protection of human rights. To better target people with the goals, the implementation of the

SDGs has strong regional or local aspects. This enables the realization of sustainable development into concrete activities.

### The 17 Sustainable Development Goals (SDGs)<sup>9</sup>:



<sup>8</sup> United Nations (2015), Sustainable Development Knowledge Platform, SDGs.

<sup>9</sup> EDA (n.d.), 2030 Agenda for Sustainable Development.



### 1.3 ESG-Sustainability: Lists 28/45 according to RepRisk<sup>10</sup>

Categorization proposal for ESG (Environmental, Social, Governance) topics (approximately 28), which can be classified according to the 10 UN Global Compact principles:

Environment	Social		Governance
<b>Environmental Footprint</b> Global pollution (incl. climate change and GHG emissions) Overuse and wasting of resources Impacts on ecosystems and landscapes Local pollution Waste issues Animal mistreatment	<b>Community Relations</b> Human rights abuses, corporate complicity Impacts on communities Local participation issues Social discrimination	<b>Employee Relations</b> Forced labour Child labour Freedom of association and collective bargaining Discrimination in employment Occupational health and safety issues Poor employment conditions	<b>Corporate Governance</b> Corruption, bribery, extortion, money laundering Fraud Tax evasion Tax optimization Misleading communication Anti-competitive practices Executive compensation issues
<b>Cross-Cutting Issues</b> Controversial products and services Products (health and environmental issues) Violation of international standards Violation of national legislation Supply chain issues			

Source: RepRisk

A published list of 45 conflicting ESG topics can serve as a checklist for ESG-related issues:

Abusive / Illegal fishing	Agricultural commodity speculation	Deep sea drilling	Nuclear power	Pornography
Coral reefs	Land grabbing	Conflict minerals	Coal-fired power plants	Predatory lending
Endangered species	Illegal logging	Diamonds	Fracking	Genocide / Ethnic cleansing
Genetically modified organisms (GMO)	Forest burning	Drones	Oil sands	Involuntary resettlement
Monocultures	High conservation value forests	Automatic and semi-automatic weapons	Hydropower (dams)	Human trafficking
Soy	Protected areas	Land mines	Water scarcity	Migrant labor
Palm oil	Mountaintop removal mining	Cluster munitions	Gambling	Indigenous people
Animal transportation	Arctic drilling	Depleted uranium munitions	Tobacco	Negligence
Rare earths	Sea-bed mining	Asbestos	Alcohol	Privacy violations

Source: RepRisk

<sup>10</sup> RepRisk (2017), Page 4.

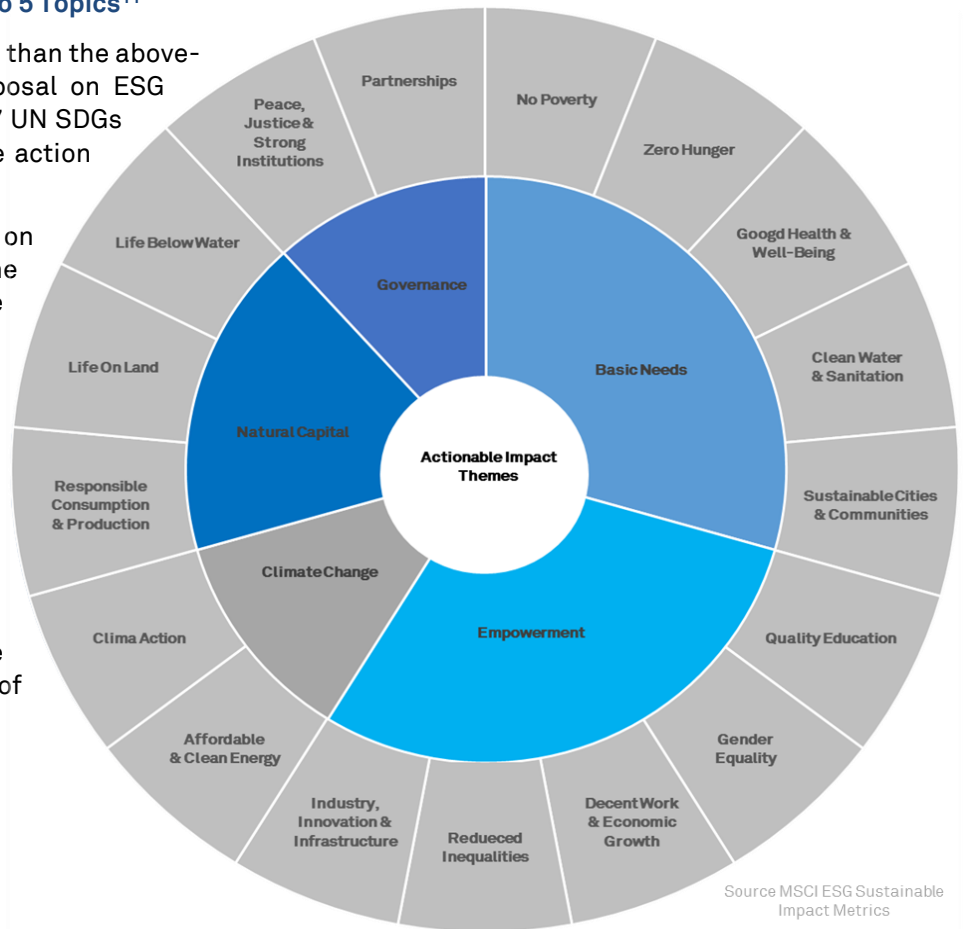


#### 1.4 MSCI: 17 SDGs reduced to 5 Topics<sup>11</sup>

MSCI uses a different approach than the above-mentioned categorization proposal on ESG topics. MSCI starts from the 17 UN SDGs and summarizes them into five action and impact-oriented topics:

Due to the strong emphasis on ESG goals or the focus of the SDGs on the well-being of the individual, the goal of a financial return seems to be an immoral contradiction. Without financial incentives, however, capital will not flow into such projects and thus the prosperity-promoting power of the market economy will remain unused.

Poverty reduction remains to be viewed as a traditional means of development aid.



#### 1.5 Impact Investing (Definition Attempts)

In 2009, the Monitor Institute, a Monitor Group<sup>12</sup> company based in Cambridge, MA, coined the term "impact investing" in its "Investing for Social and Environmental Impact" study, which subsequently gained international acceptance:

*"Impact investments generate both social and environmental benefits as well as financial returns."*

Definition according to J.P. Morgan<sup>13</sup>/Global Impact Investing Network (GIIN), 2010:

*"Impact investments are investments that have a positive social impact in addition to financial returns."*

Definition according to Instituto de Estudios Superiores de la Empresa (IESE)<sup>14</sup>, Barcelona, 2012:

*"Impact investing is any for-profit investment that deliberately generates measurable benefits to society."*

Die European Venture Philanthropy Association (EVPA)<sup>15</sup> defines it as:

*"Impact Investments and Venture Philanthropy want to intelligently close the tension between donation and exclusive profit orientation by solving social problems with entrepreneurial models."*

At its core, it is not just about avoiding negative external effects of entrepreneurial activity, but also about consciously achieving **positive external effects**. The conventional pattern of the capital asset pricing model (CAPM) and the financial return orientation based on it neglect external effects. **Impact Investing integrates external effects into business investment decisions.**

<sup>11</sup> MSCI (2017) MSCI ESG Sustainable Impact Metrics

<sup>12</sup> Monitor Institute (2009), Page 3.

<sup>13</sup> J.P. Morgan (2010), S.7, in cooperation with GIIN Global Impact Investing Network.

<sup>14</sup> See Instituto de Estudios Superiores de la Empresa (IESE), Barcelona (2012): Grabenwarter, Uli und Liechtenstein, Heinrich.

<sup>15</sup> See EVPA (n.d.).

The Monitor Institute has coined the term "impact investing", emphasizing that it is an **active investment strategy** that contributes to the emergence of new business models. Impact investing is therefore more than a new asset class. **It is a way of thinking and acting in the consciousness of what you want to do with your own resources and forces in the world.**

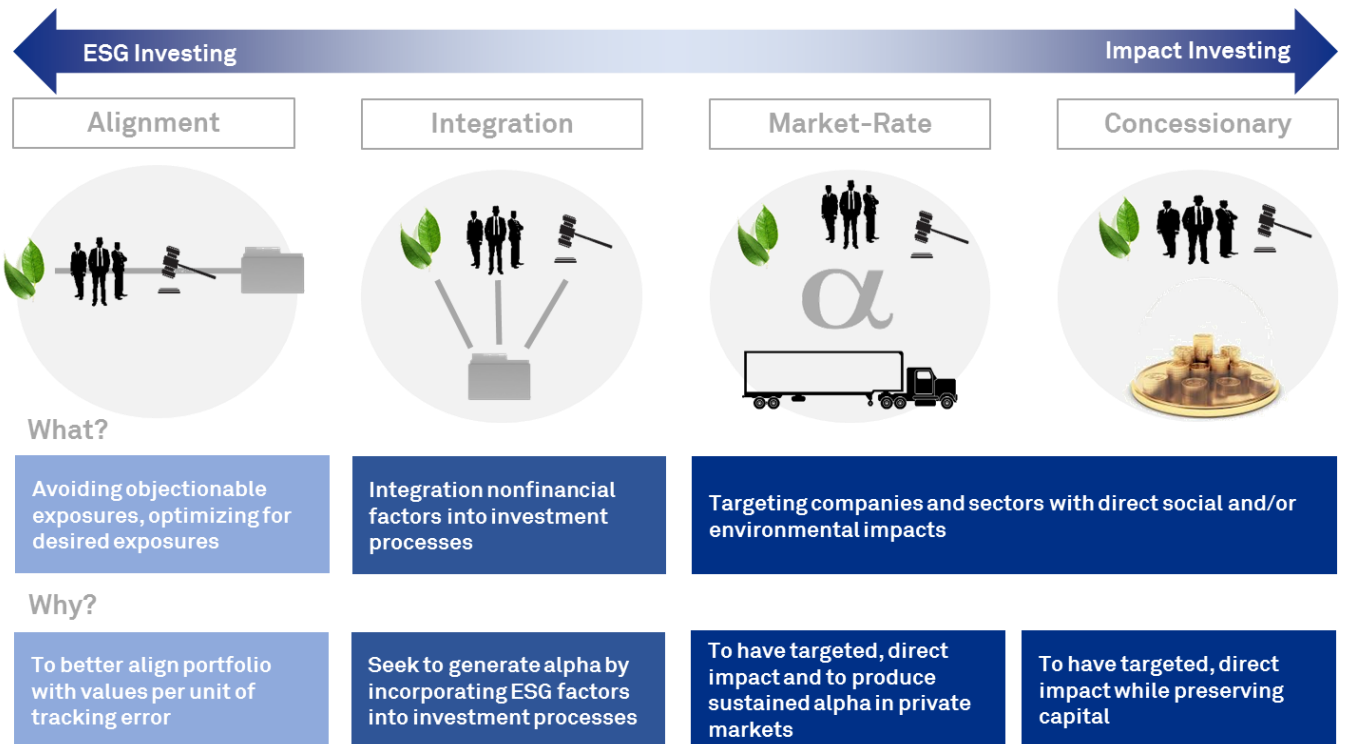
Impact investing isn't,

- a **CSR** (Corporate Social Responsibility) **marketing measure**, unless investments with social and / or environmental effects are explicitly pursued.
- a **charity measure for dole recipients** through donations.

### 1.6 Delimitation of Impact Investing

Traditional investments can be clearly distinguished from sustainable investments by focusing on financial returns and ignoring other factors.

One possible differentiation within sustainable investments is proposed by Goldman Sachs Asset Management<sup>16</sup>:



Source: Goldman Sachs Asset Management

**Impact Investing**  
 is a strategy, which guides assets and capital to investments that both...  
 - generate an attractive financial return and  
 - have a measurable positive social and environmental impact

The implementation of the ESG analysis is the prerequisite for the impact investing strategy.

<sup>16</sup> See Goldman Sachs Asset Management (n.d.)



## 2. Positioning of Carnot Impact Investing

### 2.1 Sustainability

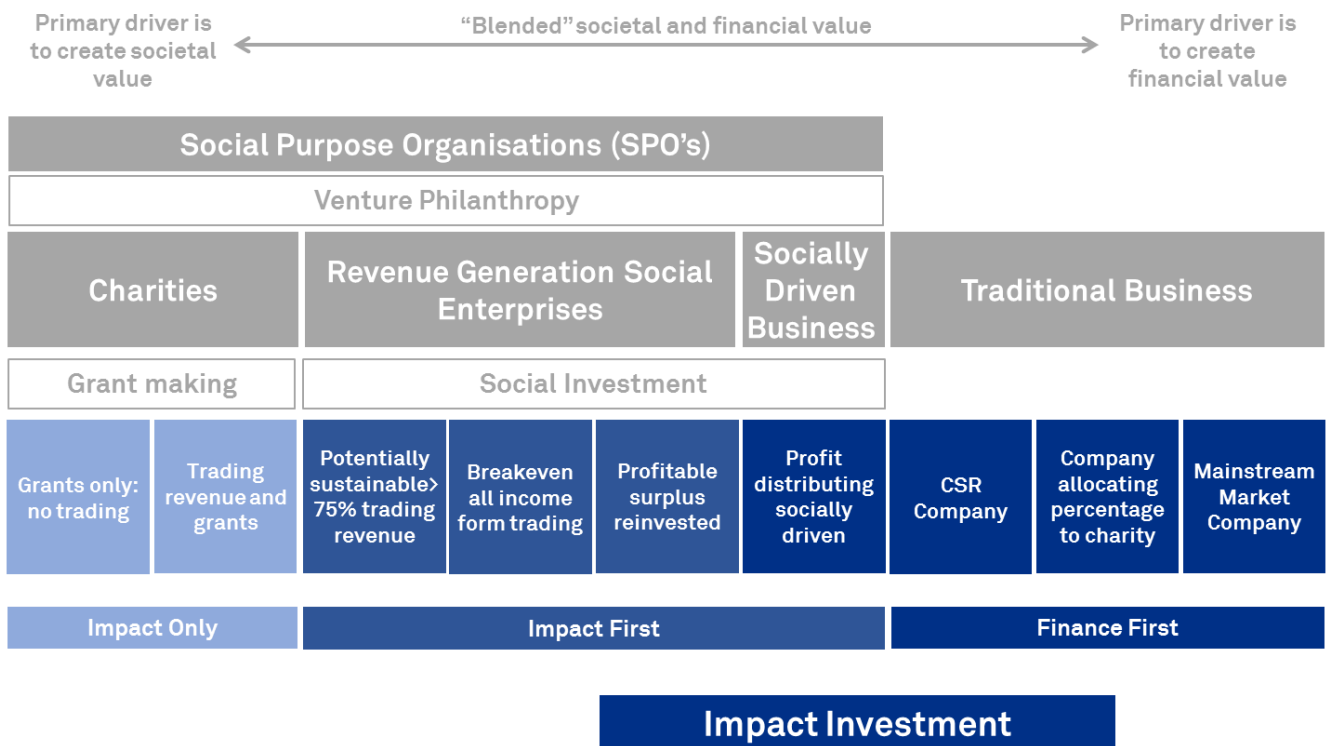
Sustainable investments supplement the traditional criteria of profitability, liquidity and security with environmental, social and ethical aspects. The proportion of the individual aspects can be very different, a distinction does not follow the black-and-white scheme but is fluid.

#### 2.1.1 Green / Philanthropic<sup>17</sup>

The **non-financial objective is at the centre**. In its most extreme form, interest and repayment of capital is waived entirely.

For Carnot, financial return is the essential and measurable part of fund performance. Pure environmental or social objectives at the expense of the financial return are excluded. All of Carnot's selected investments will continue to be subjected to a fundamental value analysis using financial measures.

In addition to the financial objective, the inclusion of environmental and social aspects can be very different. The degree of sustainability is an important factor in terms of the quality. The demarcation does not follow the black-and-white scheme, as with the financial objective, but is also fluid and requires systematization.<sup>18</sup>



Source: The EVPA Spectrum

<sup>17</sup> See EVPA (n.d.), The EVPA Spectrum

<sup>18</sup> IFZ Sustainable Investments Study (2017), Page 27 ff.



### 2.1.2 Sustainability in a wider, broader sense (ESG-Top down)<sup>19</sup>

Sustainable investments, by definition and in the broader sense, are investments that do not meet the ESG criteria, but are either through a (1.) simple screening (one or two exclusion criteria that are norm- or value-based), (2.) commitment too or (3.) through integration pursue the ESG criteria.

(1.) **Norm-Based Screening** (these standard catalogues include): United Nations **Global Compact**, OECD Principles of Corporate Governance, OECD Guidelines for Multinational Enterprises, Universal Declaration of Human Rights, Guiding Principles on Business and Human Rights, Children's Rights and Business Principles, ILO Conventions on Labour Standards, Rio Declaration on Environment and Development, Convention on Corruption, Convention on Cluster.

(2.) **Engagement:** A long-term dialogue between investors and companies with the aim of attracting management to the consideration of social, ethical and ecological criteria. This includes voting at general meetings, shareholder motions and questions at general meetings, joint initiatives, direct contact with companies and decision-makers, discussions with other organizations and decision-makers from business and politics.

(3) **Integration:** Explicit inclusion of social, ethical and environmental risks, as well as corporate governance risks in the traditional financial analysis by means of **exclusion list**<sup>20</sup>. Most of the companies surveyed come from special armaments sectors, which are generally not invested in and for which therefore no engagement process is initiated. Classic examples

are at the product level (e.g., military, tobacco, alcohol, pornography, nuclear, betting, etc.) or at the job level (e.g., coal mining, petroleum extraction, etc.).

The so-called **broader sustainability approach** uses **asset overlays**<sup>21</sup> to consider those investments with product-independent criteria or strategies.

**Around three quarters of the investment funds that identify as sustainable<sup>22</sup> limit their process to this asset overlay. For Carnot's understanding of sustainability or impact investing this is the first step in the screening process, with more to come. In addition, it is foreseeable that in the future pure exclusion lists will not suffice as a sustainability competence.**



<sup>19</sup> FNG Market Review Sustainable Financial Investments (2017), Page 9.

<sup>20</sup> See Nordea Asset Management (2017) Exclusion list, October 2017.

<sup>21</sup> Nordea (n.d.) Responsible Investments (RI) Process, Page 2.

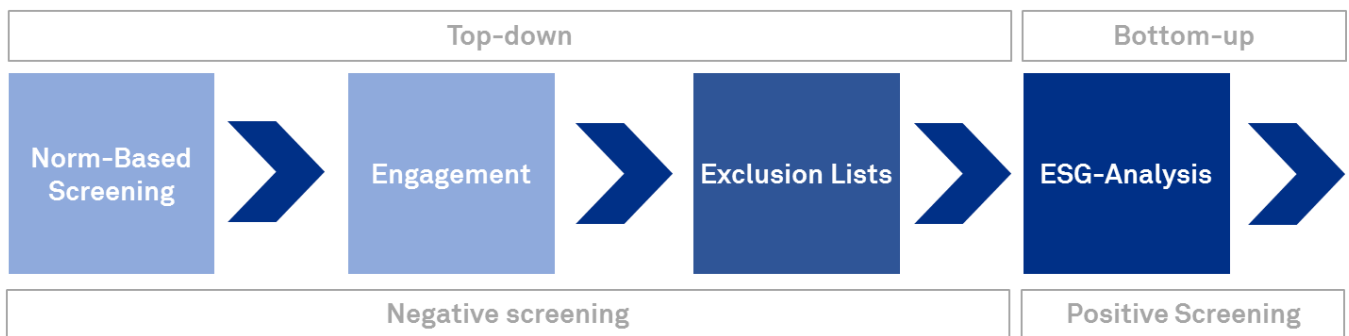
<sup>22</sup> IFZ Sustainable Investments Study (2017), Page 45.



### 2.1.3 Sustainability in a more demanding, narrow sense (ESG-Bottom up)<sup>23</sup>

Sustainable investments in the narrower sense are made up as follows (combinations possible): **Negative screening:** value / ethically based exclusions and / or norm-based exclusions (three or more criteria) of companies **and positive screening** (including best in class & SRI themed funds).

**Positive screening** is based on the investable universe (asset overlay via top down) and implements another second ESG process based on the first: "A **Bottom-up analysis uses ESG criteria** in financial analysis to make a positive selection (rating of companies according to A, B, C criteria<sup>24</sup>)."<sup>25</sup>



Source: Nordea Asset Management

The investment funds that build on the second ESG investment process are positioned and marketed as sustainable and invest only in companies with a rating.

**For Carnot's understanding of sustainability or impact investing, this second filter with the ESG analysis is an essential step in the investment process towards high sustainability competence. The deeper study of the E, S and G factors also allows a new dimension of risk optimization.**

### 2.1.4 Risk reduction through ESG filter, factor premium.

With this selection process one achieves a **double bottom line of added value: a better social-ecological performance and a better financial performance.**

**"ESG as a factor premium: The alpha hunter"**<sup>26</sup> (marketing slogan) is understood as a positioning idea, "that the fund provider includes ESG

elements in the investment process primarily as a means of risk-adjustment to achieve an excess return compared to the benchmark or the market. Here the inclusion of ESG factors is understood as a source of generation of alpha. The financial materiality of sustainable investment strategies or individual ESG factors is emphasized from this perspective and their positive influence on the risk-return characteristics of funds is highlighted: The systematic reduction of the risk of an investment (e.g. reduction of volatility) or the achievement of a higher return at comparable risk (e.g. through active involvement or consciously pursuing ESG opportunities).

ESG investments are considered as an investment style that promises a long-term and systematic factor premium - like known evidence factors for

equities such as "value", "momentum", "size" or "quality" in capital market research.

Excursion:

*"In the context of the discussion on the performance of sustainable investments, the importance of the question of the materiality of ESG factors is increasingly growing. [...] The debate on the materiality of sustainable investments has recently led to the development of different approaches to material and immaterial ESG differentiating factors. These approaches can be very helpful in advising and distributing sustainable investment solutions in two ways: Firstly, they help to distinguish between the diversity of sustainability approaches to important and unimportant ones - materially relevant ESG factors from non-material ESG factors. Secondly, they help to identify and justify causal relationships between ESG factors and the performance of sustainable investments.*

*An important approach in this context is the SASB Materiality Map of the Sustainability Accounting Standards Board (SASB)<sup>27</sup>. [...] The SASB matrix combines*

<sup>23</sup> FNG Market Review Sustainable Financial Investments (2017), Page 9.

<sup>24</sup> Nordea (n.d.) Responsible Investments (RI) Process, Page 4.

<sup>25</sup> IFZ Sustainable Investments Study (2017), Page 29.

<sup>26</sup> IFZ Sustainable Investments Study (2017), Page 80 f.

<sup>27</sup> See Sustainability Accounting Standards Board SASB (2017) and Khan et al. (2015).





*fundamental sustainability factors with financial valuation, using specific indicators. The SASB matrix is an evidence-based tool that helps to gauge the size and likelihood of ESG risks with their potential financial impact on an entity's earnings, costs, assets, liabilities, and capital costs. The SASB matrix makes it possible to pinpoint the impact that selected ESG factors in an industry are likely to have on the future performance of companies".<sup>28</sup>*

**For Carnot's understanding of sustainability or impact investing, this approach is very plausible and coincides with the previous concept of the value approach as an investment process, which requires an active investment style.**

### **2.1.5 Micro & macro analysis of sustainable investments: Sustainability and Impact Investing**

The ESG bottom-up analysis provides a detailed picture of the socio-environmental positions and achievements of a company. Generally accepted methods of detection and various private providers with comprehensive company-related analysis and ratings ensure, at least qualitatively, compliance with selected minimum standards. In addition, quantitative reporting is already produced by many companies (social and environmental reports). Like the financial reporting, this information and data is closely related to the individual company and shows its state through a business perspective. From an economic point of view, these companies have been selected based on **microanalysis** in the investment universe of sustainable investments. But what about their products, processes or social-ecological achievements, which influence the outside world, with their external effects, with their impact?

The capture and quantification of external effects can be categorized as a **macro analysis of sustainable investments** to stay within the macroeconomic perspective. However, this macro analysis is not intended to be an aggregate representation of corporate performance in a global ESG report. **The impact of these companies' investments** in context of their E-, S- and G-factors on the environment and population is sought worldwide. Thus, it requires indicators that do not report primarily from the perspective of companies, but assessment criteria and metrics that capture or measure the sustainability of the beneficiaries, the consumers, nature etc.

One possible set of measurement indicators is the United Nations Sustainable Development Goals (SDGs)<sup>29</sup>, which aim to ensure sustainable economic, social and environmental development. In transforming our world, the design of the goals emphasizes the importance of the people who are at the centre of sustainable development. An evidence-based link to the SDGs can reflect the sustainable performance of companies.

For Carnot's understanding of sustainability or impact investing, the existing investment process (including the ESG filter) will provide a solid foundation for combining sustainability-focused business performance with the SDGs. The **mission** to promote sustainable consumption reduction of energy and resources is compared with the SDGs. Consistent goals are determined and assigned to the individual topics. This compound allows the qualitative and quantitative assessment of the impact of the Carnot Funds on the SDGs. This means **consistent mapping of the SDGs**.

### **2.1.6 Carnot Impact Investing**

Carnot Impact Investing addresses the reduction of natural resource consumption. The focus is on products, technologies and services that conserve natural resources or make more efficient use of them as production factors. Concrete fields of application are the topics of energy and natural resources, which in turn are divided into the four elements fire, water, earth and air.

#### **1) Carnot Impact Investing promotes the reduction of energy and natural resource consumption.**

An in-depth financial analysis evaluates the return potential and ensures that financial return is a priority. Positive investment returns and positive societal impacts (ESG, sustainability) are compatible.

#### **2) Carnot Impact Investing prioritizes the financial return with the maximum possible consideration of positive social impacts (ESG, sustainability).**

In addition to a value approach with proven financial analysis, as a supervised "Independent Asset Manager of Collective Investment Schemes" and a specialist in equities Carnot Capital uses an active strategy. The value approach based on financial ratios is combined with a sustainability analysis (ESG filter) and extended to a **"blended approach"** of an active investor.

<sup>28</sup> IFZ Sustainable Investments Study (2017), S.34 f.

<sup>29</sup> United Nations (UN) (2015), Sustainable Development Knowledge Platform.



**3) As an equity specialist, Carnot Impact Investing combines a value approach with a sustainability analysis (ESG filter) on the "blended approach" for active impact investors.**

The sustainability analysis is not only created through a negative screening (exclusion lists) but also with a positive screening (ESG Rating) qualitatively deepened several times. Furthermore, external effects are included in the qualitative and quantitative reporting by means of an SDG mapping.

**4) Carnot Impact Investing uses an SDG mapping to document the sustainability of external effects of**

**selected portfolio companies in a qualitative and quantitative reporting.**

**Carnot Impact Investing** is a blended approach, which differentiates itself through...

- financial as well as
- socio-ecological

performance and by combining these two qualities and revealing the positive effects they have achieved (impact from ESG & SDG mapping).



### 3. Historical investment process of Carnot Impact Investing

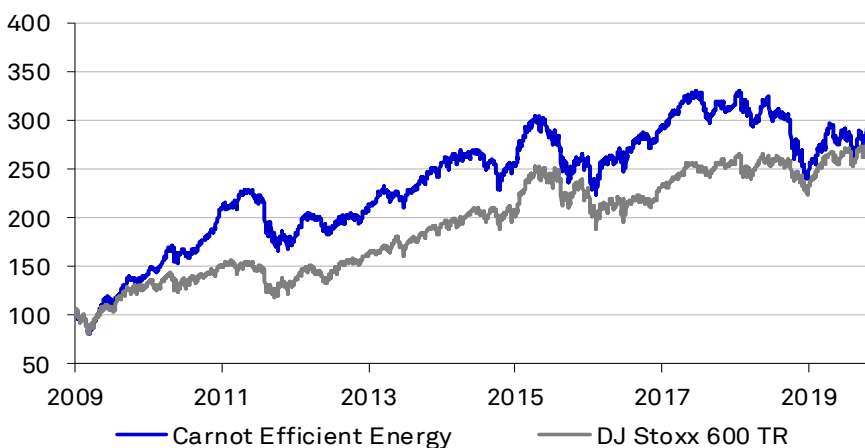
#### 3.1 Sustainability since 2007

**Sustainable investments** supplement the traditional criteria of profitability, liquidity and security with **environmental, social and ethical aspects**. The idea of the Carnot Efficient Energy Fund is based on the French physicist Nicolas Léonard Sadi Carnot (1796 - 1834), who postulated the maximum efficiency (Carnot efficiency) with a heat engine:  $\eta_C = (T_1 - T_2) / T_1$ . A high efficiency corresponds to a good ratio in the conversion of primary energy into useful energy, which is also defined as high energy efficiency. The size of the energy and climate problem is directly linked to the growth of useful energy production. The growing energy demand can be met by increased production or **more efficient use of available energy**.

##### 3.1.1 Carnot Efficient Energy Fund

Since its inception in 2007, the sustainability approach of the Carnot Efficient Energy Fund has been based on **reducing the consumption of energy**. The investment process focuses on energy efficiency by implementing the active selection of companies that produce products, technologies or services that can reduce consumption of energy.

##### 3.1.1.2 Track record



##### 3.1.1.1 Criteria

The investment universe is narrowed according to the following criteria:

##### 1. Topics / Sectors

- Building Technology
- Industrials
- Transport

##### 2. Value-Approach

- Quality
  - Established and proven technology
  - Attractive market, good position
  - Strong balance sheet
  - Solid, strong and crisis-proof cash flow
  - High return on capital employed
- Valuations
  - Low EV/EBIT
  - Opportune P/E
  - Attractive dividend yield

##### 3. Sustainability Rating

- yourSRI MSCI Report on fund level: A rating
- Active selection for the area E = Environment
- S = Social and G = Governance partially active



### 3.1.2 Carnot Efficient Resources Fund

Since 2007, the sustainability approach of the Carnot Energy Efficiency Fund has been based on **reducing energy consumption**. Since 2015, the same process has been used for positive screening (ESG bottom up) for the Carnot Efficient Resources Fund. The investment process focuses on resource efficiency through the active selection of companies that produce products or services that can reduce the consumption of natural resources.

#### 3.1.2.1 Criteria

The investment universe is narrowed according to the following criteria:

##### 1. Topics / Sectors

- Energy
  - Building Technology
  - Industrials
  - Transport
- Drinking Water
  - Drinking water
  - Sewage water
  - Irrigation, watering
- Earth / Planet
  - Agricultural land, oceans
  - Food
  - Soil, land
- Clean Air
  - Toxic fumes
  - Fossil fuels

##### 2. Consumption Criteria

- 1<sup>st</sup> question: Does the company have technology, or does it provide a service that reduces the consumption of natural resources?

- 2<sup>nd</sup> question: Does this technology or service bring concrete economic benefits (payback)?
- 3<sup>rd</sup> question: Does this technology or service account for at least 20% of the enterprise value of the company?

##### 3. Value-Approach

- Quality
  - Indebtedness, debt ratio
  - High return on capital employed
- Valuations
  - Low EV/EBIT

##### 4. Attractiveness ranking list

##### 5. Sustainability rating ESG at stock level

- Industry contribution
  - Ecological footprint: Resource consumption, Emissions, Waste
  - Social footprint: working conditions, social conflict potentials
- Business contribution
  - Environment: supply chain, production, products
  - Social: suppliers, employees, society, customers
  - Business management
- Exclusion criteria
  - Arms
  - Nuclear energy
  - "Green" gene technology
- Active selection for the area E = Environment
- S = Social and G = Governance partially active

#### 3.1.2.2 Track Record





### 3.2 Carnot Impact Investing since 2007: Sustainability

The approach includes many elements of impact investing. The consistent restriction of the investment universe to listed companies, which helps reduce energy and resource consumption, generates the desired positive effect on the end user. The Value approach always focuses on the financial quality of the business, thereby upholding the return potential. Sustainability is integrated with the application of an ESG screening not only through exclusion lists (ESG top down) but also through sustainability in the more demanding, narrower sense (ESG bottom-up). The implementation of an Impact Investing Mapping based on the SDGs (see Chapter 6: Carnot Impact Mapping Tables) on the selected securities is combined with the qualitative and quantitative reporting of the positive impact.

#### 3.2.1 Fulfilled criteria

##### Intention / Goals / Mission:

**The Carnot investment strategy promotes the reduction of energy and natural resource consumption.**

##### Implementation:

Listed companies with products, technologies and services that meet the reduction of energy and natural resources consumption are selected.

##### Financial Returns:

The value approach only invests in companies that have a high quality (strong balance sheet) and that

have the required return potential (attractive valuation). A track record of more than 10 years proves the performance.

##### Sustainability:

Exclusion lists (top down) & ESG screening (bottom up):

- Sustainable ESG rating at the company level or your SRI MSCI report at the fund level
- Active selection for the area E = Environment
- S = Social and G = Governance partially active

The application of the ESG sustainability analysis is implemented in the investment process.

#### 3.2.2 Under Construction

##### Reporting:

At present, reporting is limited to the positive effects listed and mentioned in individual company reports (e.g. eco-balance, environmental & social report), i.e. on a **microeconomic** information level.

For **macroeconomic** reporting of the beneficial effects, e.g. on the SDGs, a framework with measurement and performance indicators needs to be defined. This new report praises investors about the usefulness of their investments by showing the **impact they have generated**. The concept of sustainability is also emphasized as an **inter-generational contract** between the investors and their descendants (parents think of sons and daughters and their children).



## 4. Current Investment Process of Carnot Impact Investing

### 4.1 Sustainability and Impact Investing

In the existing investment process (including the ESG filter), the concept of sustainability in the narrower sense (ESG Bottom-up) is considered extensively. The focus here is on the identification and avoidance of negative effects, resp. a reduction of ESG risks (as a factor premium).

In the **Impact Investing extended sustainability analysis**, the screening for positive impact is an additional dimension to achieve positive social and environmental impacts in addition to financial returns.

**Impact Investing is an active investment strategy that contributes to the emergence of new business models. Impact investing is therefore more than a new asset class. It is a mindset and acting in the consciousness of what you want to do with your own resources and forces in the world.**

At the beginning of 2016, the United Nations established Sustainable Development Goals (SDGs) aimed at combating climate change and increasing inequality, eradicating poverty, and limiting non-sustainable production and consumption patterns. 17 goals and 169 specific targets have been identified, which are to be achieved by 2030. These goals can be integrated as a framework in the investment process. This makes it possible to assess impact investing in qualitative and quantitative terms.

### 4.2 Impact Investing Process

Impact investing is not a matter of pure philanthropy. The selection of companies by means of impact criteria can be carried out in the context of the previously mentioned investment process, but in addition to basic data, a qualitative analysis of the companies, must also be carried out to find attractive investment opportunities. Using financial analysis tools as well as the environmental, social and governance (ESG) analysis are now the basic tool of financial analysts. The new analysis procedures and criteria of the impact investing process<sup>30</sup> must be defined:

#### 4.2.1 Impact Investing - Intention

Impact Investing offers excellent opportunities to further the goals of the SDGs. To generate a

financial return, capital is invested in stocks of companies where social and environmental goals are central to the business strategy - so-called **mission-oriented companies**<sup>31</sup>.

**Does the company pursue a clear strategy to mitigate societal and environmental issues through its activities?**

This is the basic criterion for inclusion in an impact investing portfolio. The company's strategy must directly target company performance that contributes to the achievement of sustainable development goals. There must also be quantitative evidence for strategic financing of this strategy. Random effects, e.g. savings from replacement investments are not enough.

#### 4.2.2 Impact Investing - Implementation

Implementation should assess the effectiveness of a company's strategy, plans as well as research and development efforts in relation to the intended positive effects. A company that moves from the strategic memorandum of understanding to implementation will see strong sales growth in products and services that contribute to one or more SDGs. The external positive effects on the outside world (for example product applications) are to be weighted higher than positive effects on the enterprise itself.

Nevertheless, in the investment process the fundamental data of the enterprise are of central importance. For inclusion in the Impact Investing portfolio, the three following steps (1st Financial Analysis / 2nd Impact Analysis / 3rd Impact Reporting) must be completed:

##### 4.2.2.1 Financial Analysis<sup>32</sup>

Every active investment process is based on a comprehensive company analysis. Corporate strategy, financial metrics, and relationships with management form the fundamental study of a potential investment. The result of this analysis is a pool of attractive investment opportunities. The purpose of financial research is to develop a personal and unique assessment of the prospective opportunities for revenue growth and profitability and to assess the company's strategy relative to the competition. Financial implications also have environmental and social problems,

<sup>30</sup> See. Standard Life Investments (2017), Page 3 ff.

<sup>31</sup> Standard Life Investments (2017), Page 4.

<sup>32</sup> See Standard Life Investments (2017), Page 6.



which are also part of a full assessment of the company's financial prospects.

#### 4.2.2.2 Impact Analysis (Mission / Intentions / Goals)<sup>33</sup>

Although meeting ESG criteria does not guarantee impact investing, ESG analyses are a key component of the impact process. It must be ensured that the activities of the company are ESG-compliant, and the responsibility is respected. The ESG performance analysis is preferably conducted on a global scale, considering macroeconomic sector trends, future regulation and company-specific risks.

The impact of a business also includes the quality of corporate governance and how it deals with its environmental and social risks and opportunities. The implemented standards and behaviours are helpful indicators for the company's approach to ESG issues and are included in the risk and stability assessment of the company.

In the impact process, the negative impact of business activities must also be analysed and considered to ensure that the positive environmental and social impacts are not recouped. A responsible company is not just defined by the positive effects of its products, services and projects.

#### 4.2.2.3 Impact Reporting

To ensure credibility, create investor confidence and attract more capital, benchmarks are identified to clarify and assess the magnitude of the positive effects. The 169 performance indicators of the UN's SDG's provide the necessary framework. These performance indicators measure the scope and help illustrate the impact process. They allow companies creating positive impact to produce accurate, consistent and standardized reports.

The impact reporting of companies consists of qualitative and quantitative criteria. The most promising method requires that the **results of a company's behaviour** be measured, not just its (economic) performance.

In assessing each fully developed impact strategy, we assess the scale and scope of a company's products, services and projects<sup>34</sup>:

- Sales of dedicated products

- Number of people (e.g. customers, employees) being reached / cared for
- Investments into research, development and innovation

The task is to go beyond the presentation of these performance indicators as individual services and to demonstrate the direct participation of the Carnot funds in the achievement of the SDGs. Based on these performance indicators, the significance of the impact can be shown and a concrete connection (mapping) to the SDGs can be made. A broad application of the SDGs makes impact investing portfolios more attractive, as they aim to solve many of the world's problems.

#### Example:

**Intention / Strategy:** Manufacturing products in the "Pumps" segment of application, which enable improved energy efficiency (Goals 7 & 13 of the SDGs).

**Implementation:** Product evaluation, revenues, growth of activities aimed at improving energy efficiency, e.g. R & D expenses.

#### Impact Significance:

- **Energy savings:** 7.3 By 2030, the global rate of increase in energy efficiency is expected to double
- **CO<sub>2</sub> reduction:** 13.2 Include climate change measures in national policies, strategies and plans

### 4.3 The Link from ESG-Sustainability Investing to Carnot Impact-Investing

For years, the sustainability approach of Carnot's investment strategy has been based on reducing the consumption of energy (= energy efficiency) and natural resources (= resource efficiency). The positive impact potential of Carnot's investment strategy on the SDGs is quantified below.

#### 4.3.1 Are there any positive effects of the Carnot investment strategy on the SDGs?

The 17 Sustainable Development Goals (SDGs)<sup>35</sup> outlined in section 1.2.2 are very comprehensive and not all are served by the Carnot investment strategy. Impact Investing also does not require full coverage. Concentrating on individual goals or target groups implements the idea as well.

<sup>33</sup> See Standard Life Investments (2017), Page 8.

<sup>34</sup> Standard Life Investments (2017), Page 7.

<sup>35</sup> EDA (n.d.), Agenda 2030 for Sustainable Development.



A contribution can be made with the Carnot sustainability approach to the following objectives without analysing the 169 targets in detail:

Reduction of energy consumption (= energy efficiency)

- 7. Affordable and clean energy
- 8. Decent work and economic growth
- 9. Industry, innovation and infrastructure
- 11. Sustainable cities and communities
- 13. Climate action



Reduction of the consumption of natural resources (= resource efficiency).

- 2. Zero hunger
- 3. Good health and well-being
- 6. Clean water and sanitation
- 7. Affordable and clean energy
- 8. Decent work and economic growth
- 9. Industry, innovation and infrastructure
- 11. Sustainable cities and communities
- 12. Responsible consumption and production
- 13. Climate action
- 14. Life below water



The first preliminary analysis shows that there are enough SDGs on which the Carnot investment strategy has an impact. The complete mapping is found under section 6 (Carnot Impact Mapping Table).

As a result, the methodology used to narrow down the Carnot universe is suitable for both ESG sustainability investing and impact investing.

**4.3.2 Decision about inclusion in the Carnot investment universe**

The following questions are asked for the limitation of the Carnot universe:

1. Does the company have technology, or does it provide a service that reduces the consumption of natural resources?
2. Does this technology or service bring concrete economic benefits (payback)?
3. Does this technology or service account for at least 20% of the enterprise value of the company?
4. Does the company belong to the target sectors of building technology, industry or transport regarding energy efficiency?

**4.3.3 Financial Returns**

The value approach only invests in companies that have a high quality (strong balance sheet) and that have the required return potential (attractive valuation). A track record of more than 10 years proves the performance.

The return on capital employed (ROCE) is a suitable measure of the attractiveness of the market and the strength of the company. A high ROCE means low fixed costs and low capital requirements for organic growth.

The valuation based on the enterprise value (EV) takes the entire balance sheet structure into account and is based on the cash flow (EV / EBIT).

VALUE APPROACH	
Quality	Valuations
<ul style="list-style-type: none"> <li>• Established and proven technology</li> <li>• Attractive market, good position</li> <li>• Strong balance sheet</li> <li>• Solid, strong and crisis-proof cash flow</li> <li>• High return on capital employed</li> </ul>	<ul style="list-style-type: none"> <li>• Low EV/EBIT</li> <li>• Opportune P/E</li> <li>• Attractive dividend yield</li> </ul>
<p>"It's far better to buy a wonderful company at a fair price than a fair company at a wonderful price." W. Buffet</p>	

ATTRACTIVENESS RANKING	
Quality (Indebtedness, ROCE)	Valuation (EV/EBIT)
<p><b>Balance Sheet Reappraisal</b></p> <ul style="list-style-type: none"> <li>• Cash, payments</li> <li>• Net working capital</li> <li>• Financial assets, investments</li> <li>• Pension liabilities</li> <li>• Minorities</li> </ul>	<p><b>Income Statement Reappraisal</b></p> <ul style="list-style-type: none"> <li>• Pro forma group consolidation</li> <li>• Amortization of acquired intangible assets</li> <li>• Value adjustments, profits from sales</li> <li>• Imputed taxes</li> </ul>





### 4.3.4 Sustainability, ESG Filter

Method:

- Assess the environmental and social footprint of an industry
- Analysis of the environmental and social risks of the industry and the company

Value added:

- Identification of good leadership and good corporate culture
- Reduction of risks
- Contribution to a sustainable economy

Exclusion lists (Top down) & ESG screening (Bottom up)

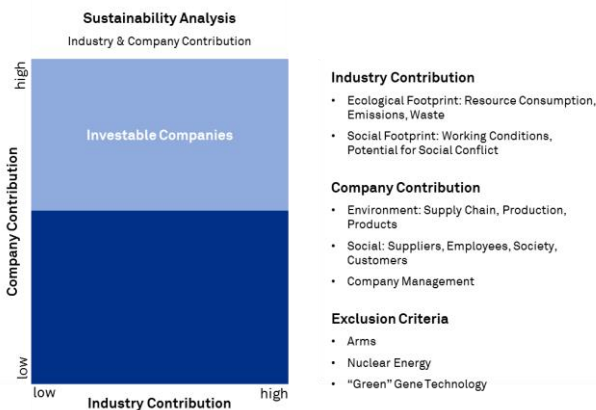
- Sustainable ESG rating at the company level or your SRI MSCI report at the fund level
- Active selection for the area E = Environment
- S = Social and G = Governance partially active



yourSRI: Sustainability Classification: „A – minor ESG risks“  
 Scale AAA-C based on MSCI ESG data  
 No investments with increased ESG risk  
 Regular ESG review of the portfolio

**Positive Selection**  
 E: Energy efficient products and technologies  
 S: Transparency, stability, earning power  
 G: Quality of Management

**Exclusion**  
 Weapons, nuclear technology, genetic engineering, narcotics  
 (up to 10%) - countries with significant corruption and poor social conditions



### 4.3.5 Application of the Impact Process

The selected, **listed companies** with products and services that meet the reduction of energy and natural resources consumption, have the financial return potential and have passed the ESG sustainability filter, are examined for their impact at the end of the investment process. Only these companies undergo the Carnot Impact process:

#### 4.3.5.1 Impact Analysis: Intention / Goals / Mission

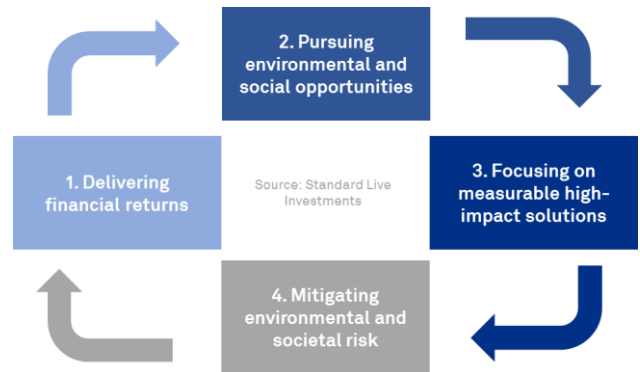
Question: Do the companies or funds have a recognizable impact intention?

**Answer:** Carnot's investment strategy promotes the reduction of energy and natural resources consumption. The individual companies are tested and documented for their mission with the Carnot Impact questionnaire.

#### 4.3.5.2 Implementation via Questionnaire

A systematic review of the impact portfolio companies by means of **questionnaires** records the **positive effects qualitatively**. The assignment of the companies and their activities (products, services, projects) to the SDGs (mapping) takes place after completion of the questionnaire analysis. At the same time, the minimum compliance is ensured through a negative comparison of the ESG screening. A company is not necessarily a responsible company just because its products, services and projects have a positive impact.

Once the products, services and projects have been mapped, the positive effects can be assessed quantitatively. For qualitative effects the impact is determined if a plausible measurement of the performance indicators is possible.



Ensuring investor confidence is key. Therefore, the Carnot Impact Investing process is a controlled one. The internal "**Impact Investing Office**" reviews the questionnaires and the **Chief Impact Officer** authorizes and approves the Carnot Impact Investing universe (Impact Controlling, Annex questionnaire) on the questionnaire.

#### 4.3.5.3 Reporting

The reporting of the **positive impact** is not limited to the individual reports of the companies (e.g. eco-balance, social and environmental report), a microeconomic information level. Measurement and performance indicators are defined that

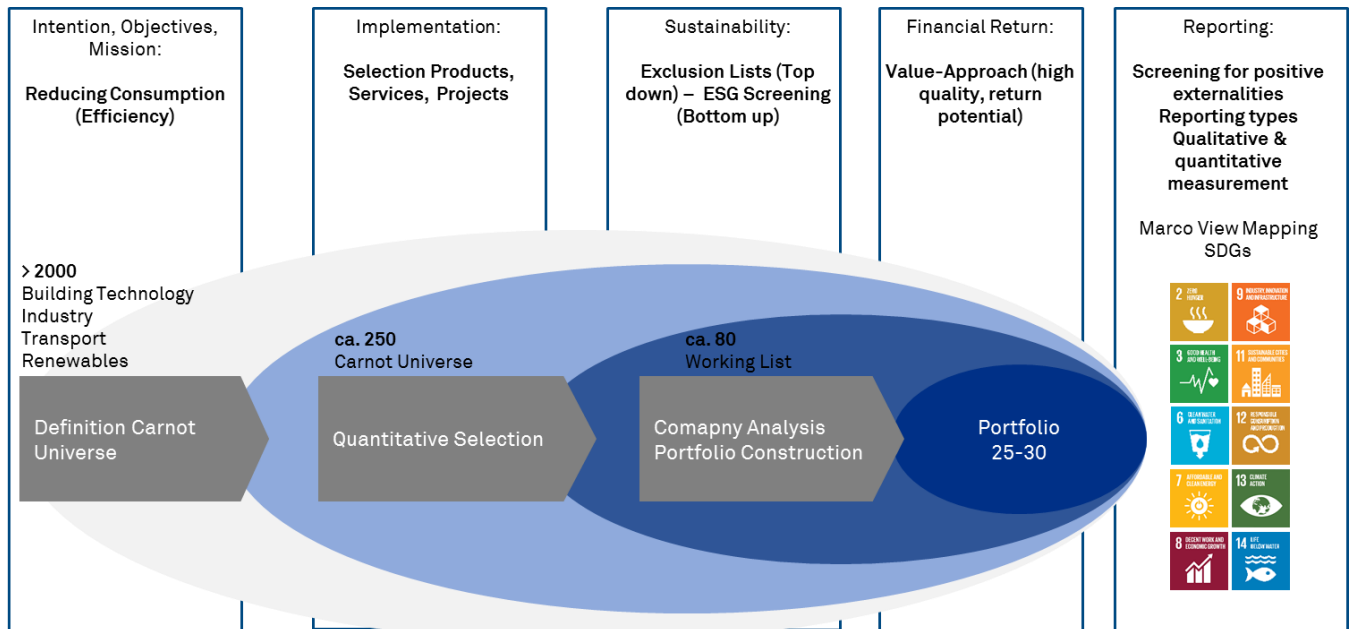


provide macroeconomic coverage of the beneficial effects as well, e.g. to the SDGs.

This requires a **systematic procedure** on how to assess these effects qualitatively and quantitatively based on the SDG mapping created in the implementation process. The assigned performance indicators are interpreted and quantified using calculation examples. This results in a comprehensible report for the investor (see Sections 6, 7 and 8).

Impact investing does not mean that financial return is sacrificed. After all, "it's always about the finances. An impact investing philosophy is based on the recognition that so-called "non-financial

factors, captured in ESG analyses, will ultimately affect economic results".<sup>36</sup>



<sup>36</sup> Standard Life Investments (2017), Page 12.



## 5. Carnot Universe: Specifications to get into the ESG/Impact Investing Pool

The Carnot Impact process addresses the reduction of consumption as a goal by improving the use of production factors and ensuring that they are used more efficiently. Concrete fields of application are the topics of energy and natural resources (four elements).

Both topics are subdivided into sub-topics / target sectors:

### 5.1 Energy Efficiency: Building Technology, Industrials and Transport Sectors

- **Building technology:**
  - Thermal insulation including windows and doors
  - Heating, ventilation and air conditioning technology
  - LED-Lamps
  - Building automation
- **Industrials**
  - Engines, drives and pumps
  - Controllers, Automation, Engineering
  - Power Plant Technology
- **Transport**
  - Metal replacement by plastics
  - Internal combustion engines and gearboxes with higher efficiency
  - Electro-mobility
  - Rail technology

### 5.2 Resource Efficiency: Fire (Energy), Water, Earth and Air

- **Fire (Energy)**
  - Building technology:
    - Insulation
    - Heating
    - Cooling
    - Lighting
  - Industrials
    - Engines, drives, pumps
    - Power electronics
    - Process technology
  - Transport
    - Automotive technology
    - Railway technology

- **Water**
  - Drinking water
    - Preparation
    - De-salination
    - Supply
  - Sewage
    - Drainage
    - Cleaning
  - Irrigation
    - Infrastructure
- **Earth (Ground)**
  - Agricultural land, oceans
    - Plant protection
    - Nutrients
    - Fishing
  - Food
    - Feed and food conservation
    - Packaging
  - Ground
    - Infrastructure
- **Clean Air**
  - Exhaust, fumes, pollution
    - Catalysts
    - Flue gas washing
    - Filters
  - Fossil fuels
    - Low emission fuels

In the following section, the two themes of energy efficiency and natural resource efficiency, with their intention to promote the sustainable reduction of energy and resource consumption, will be compared with the SDGs. Consistent goals are determined and assigned to the individual topics. This comparison allows the qualitative and quantitative assessment of the impact of the Carnot Funds on the SDGs. In technical terms, **the mapping of the SDGs in the investment process** is used to select sustainable investable companies.


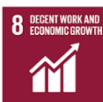





## 6. Carnot Impact Mapping Table

In the Carnot Impact Mapping Table, the topics of the funds, including sub-topics / target sectors, are compared with the content-related goals of the SDGs and linked with qualitative consistency ("mapping"). Rather than finding a literal wording the question to be answered is:

Whether the themes, sub-topics and target sectors of the Carnot investment strategy have an **impact on the achievement of the content-related goals and measures of the SDGs (impact range)?**

### 6.1 Energy Efficiency Impact Mapping Table<sup>37</sup>

Topics	Sub-Topics / Target Sectors	SDGs / Goals	Content Related SDGs / Goals / Measures
<b>Energy</b>	Increase efficiency		7.2: Significantly increase the share of renewable energies in the energy mix.
	Alternative energy		7.3: By 2030, to double the worldwide rate of increase in energy efficiency
	Reduction of CO2 emissions		8.4: Move towards decoupling economic growth from environmental degradation
	Building technology		
	Industrials		9.4: Modernize infrastructure, increase the use of clean and environmentally sound technologies and industrial processes.
	Transport		11.2: Enable access to safe, affordable, accessible and sustainable transport systems for all, through the development of public transport.
			13.2: Include climate change measures in national policies, strategies and plans.











### 6.2 Resource Efficiency Impact Mapping Table<sup>38</sup>

Topics	Sub-Topics / Target Sectors	Target	SDGs / Goals	Content Related SDGs / Goals / Measures
<b>Resources.</b>	Increase efficiency			8.4: Improving resource efficiency and decoupling economic growth from environmental degradation
				9.4: Modernize infrastructure, increase the use of clean and environmentally sound technologies and industrial processes.
				12.2: Achieve sustainable management and use of natural resources by 2030

<sup>37</sup> EDA (n.d.), Agenda 2030 for Sustainable Development.

<sup>38</sup> EDA n.d.), Agenda 2030 for Sustainable Development.



<p><b>Fire (Energy)</b></p>	<p>Increase efficiency</p> <p>Alternative energies</p> <p>Reduction of CO2 emissions</p> <p>Building technology</p> <p>Industrials</p> <p>Transport</p>	  	<p>7.2: Increase the share of renewable energies in the energy mix.</p> <p>7.3: By 2030, to double the worldwide rate of increase in energy efficiency</p> <p>11.2: Enable access to safe, affordable, accessible and sustainable transport systems for all, through the development of public transport.</p> <p>13.2: Include climate change measures in national policies, strategies and plans</p>
<p><b>Water</b></p>	<p>Drinking water</p> <p>Sewage</p> <p>Irrigation</p>	 	<p>3.9: Reduce illnesses due to contamination of air, water and soil.</p> <p>6.1: Achieve universal and equitable access to safe and affordable drinking water for all by 2030</p> <p>6.3: Improve water quality by reprocessing wastewater.</p> <p>6.4 Reduce water scarcity through better efficiency.</p>
<p><b>Earth (Ground)</b></p>	<p>Agricultural land, oceans</p> <p>Food</p> <p>Mineral resources</p>	  	<p>2.1: Access to sufficient and nutritious food</p> <p>2.4: Ensure sustainable food production, increase productivity.</p> <p>12.3: Halve global food waste per capita at retail and consumer levels and reduce food losses along the production and supply chain, including post-harvest losses.</p> <p>12.5: Significantly reduce waste by 2030 through prevention, reduction, reuse and reuse</p> <p>14.7: Sustainable management of fisheries, aquaculture and tourism</p>
<p><b>Air</b></p>	<p>Pollutants, emissions</p> <p>Fossil fuels</p>	 	<p>3.9: Reduce illnesses due to contamination of air, water and soil.</p> <p>11.6: Reduce urban pollution per capita, improve air quality, treat waste</p>



## 7. Implementation: Carnot Impact Analysis via Questionnaires

### 7.1 Using the “Logic Model” to extend the company’s performance towards its impact

To prove the impact of a company and make it comprehensible, a “Logic Model”<sup>39</sup> is used to connect the company and its products, services and projects to its impact.

This model is divided into 5 steps.

#### 1. Input:

On the one hand, input refers to financial, human or other resources that are invested in products, services or projects. But part of the inputs are also concepts (e.g., mission, exclusion lists) that define the goals and direction of services or projects.

**2. Activities / Process:** Planning, developments and fabrication processes, which serve to achieve the goals and are implemented based on the input.

**3. Output / Benefit:** Output is understood as the direct result of the combination of input with the

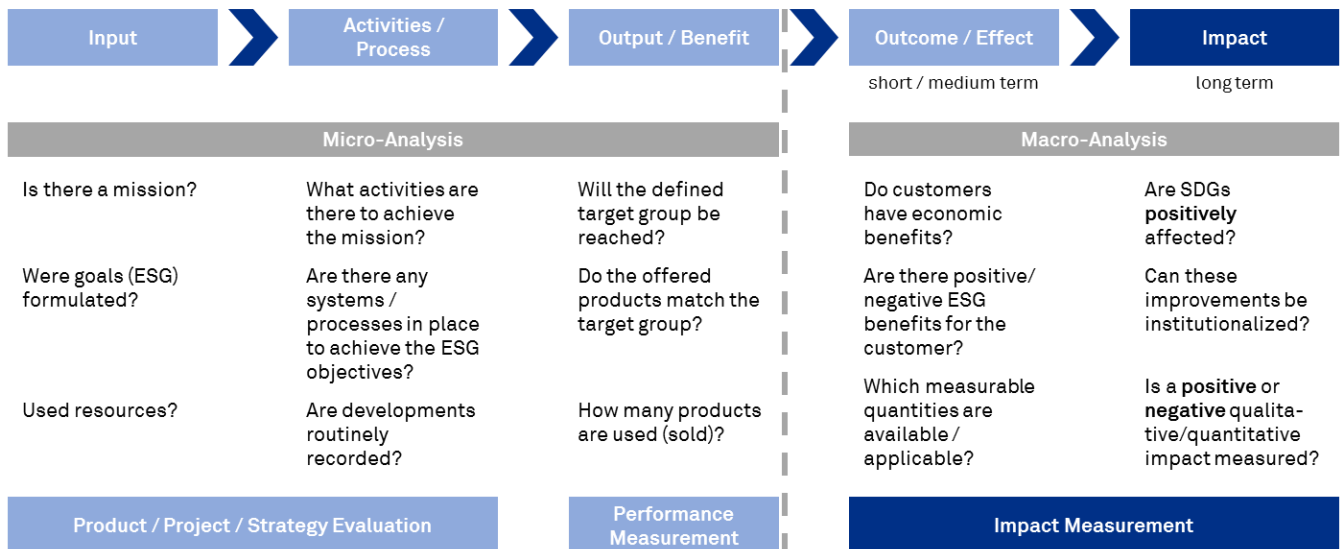
activities and processes of a company. These are **quantifiable** services such as products, services or projects. The performance is measured primarily by means of financial indicators.

**4. Outcome / Effect:** The outcome comprises the effects of products, services or projects that are implemented by the target groups and can be **derived from the output**.

**5. Impact:** On the other hand, are the effects of products, services or projects that **go beyond the effects on the target groups**. These can be effects in the surroundings of the target groups, on the social level or their environment.

**Conclusion: Impact Measurement** covers those effects (outcome) that a company triggers on the target groups through its output, but also **longer-term effects (impact)** that relate to the entire society or the state of the environment, which are not the direct addressees of the products, services or projects.

Impact measurement: reduction of energy and resource consumption (Logic Model)



<sup>39</sup> Stiftung ZEW (n.d.), Simplified Logic Model.



## 7.2 Impact-Analysis via Questionnaire

A systematic review of the impact portfolio companies via a set of **questionnaires** (impact analysis, sustainability analysis, engagement priorities) captures the **positive as well as negative effects qualitatively**.

The following four questions are answered using the questionnaires:

1. Are environmental (E) and social (S&G) risks reduced?
2. Is a financial return being generated?
3. Are environmental and social opportunities being pursued?
4. Does the company focus on measurable solutions with strong impact?

### 7.2.1 Reduction of environmental (E) and social (S&G) risks.

The first question concerns the strategic direction of the company, in which the fundamental willingness of the entire organization incl. Management is questioned: Are there mission-oriented business goals for environmental (E) and social (S & G) problems?

**Answer: A company's strategy clearly shows how the business model targets specific positive social and / or environmental impacts.**

Indicators:

- Strategy
  - Mission / Goals / Intentions
- Products & Services
  - Does the company have technology, or does it provide a service that reduces the consumption of natural resources or energy?
  - Does this technology or service bring economic benefits (payback)?
  - Does this technology or service account for at least 20% of the enterprise value of the company?
  - Regarding energy efficiency: is the company in one of the target sectors of building technology, industry or transport?
- Projects

### 7.2.2 Generating financial returns

The second question concerns the financial orientation of the company: Are there clear financial return targets and are these goals achievable?

**Answer: The financial potential of the company meets the minimum criteria (ROCE & EV / EBIT) for quality and evaluation.**

Indicators:

- Quality:
  - Indebtedness, debt ratio
  - Return on capital employed (ROCE)
- Ratings & Valuations:
  - Low EV / EBIT
  - Opportune P/E
  - Attractive dividend yield

### 7.2.3 Pursuit of environmental and social opportunities

The third question concerns the focus on sustainable corporate governance: Do ESG goals flow into everyday operations and are they reported?

**Answer: The sustainability potential of the company meets at least half of the industry average (purchased ESG analysis from Vontobel Asset Management AG) as well as the exclusion criteria.**

Indicators:

- Industry contribution
  - Environmental footprint: Resource consumption, emissions, waste
  - Social footprint: Working conditions, potential for social conflicts
- Business contribution
  - Environment: Supply chain, production, products
  - Social: Suppliers, employees, society, clients
  - Management
- Exclusion criteria
  - Arms
  - Nuclear energy
  - "Green" gene technology
  - Tobacco, Alcohol
  - Gambling
- Active selection for the area E = Environment
- S = Social and G = Governance; are not selected at first.

### 7.2.4 Focus on measurable solutions with strong impact

The fourth question concerns the direction of the company: Can the positive environmental or social contribution be disclosed and measured in relation to the company's objectives? Can the impact be



quantified on the selected SDGs (see chapter 6 Carnot Impact Mapping Tables)?

**Answer: The impact on the selected SDGs is determined by the impact measurement, using primarily indirect and qualitative indicators. Quantitative goals derived from output are traditionally determined through traditional performance metrics.**

#### 7.2.4.1 Quantitative targets (performance measurement)

##### Indicators:

- Sales of dedicated products
- Number of people (i.e. clients, their families, neighbours) who are being reached / cared for
- Investment into research, development and innovation
- Other quantitative sources of information
  - Annual financial statement
  - Social and environmental report
  - Environmental balance sheet

#### 7.2.4.2 Mixed Quantitative and Qualitative Objectives (Impact Measurement)

##### Indicators:

- Outcome
  - Efficiency; ROI
  - Follow-up investments
  - Reduction of ESG-risks
- Impact
  - Decreased usage of energy and resources (SDGs 2,3,6,8,12,14)
  - Climate change (SDG 13)
  - Better infrastructure (SDGs 9 & 11)

### 7.3 Carnot Impact Analysis Questionnaires

Carnot evaluates and documents the impact of each portfolio investment using a comprehensive audit framework. In this process, the portfolio managers complete the analysis questionnaires.

#### 7.3.1 1: Impact Questionnaire

Carnot assesses whether the reduction of resource consumption is part of the strategy, what R&D expenditure the company is making, which products contribute to the conservation of resources and what benefits they bring ecologically and financially. Carnot tests and records which sustainable development goals are influenced and how strongly (SDG mapping). Our comprehensible evaluation provides the basis for **impact reporting with the "SDG Impact Ranking" and the "Impact Heatmap"**. In Impact Reporting, Carnot uses the Impact Ranking List to show the top ranked development goals. The impact heat map of the portfolio shows the impact intensity of the individual companies from light (0) to very dark (3), comparable to a thermal image.

#### 7.3.2 2: ESG plus Questionnaire

The sustainability analysis is not only prepared through negative screening (exclusion lists, top-down), but also substantially deepened through positive screening (ESG rating, bottom-up). If available, Carnot focuses on existing analyses and ratings. Since commercial databases only provide parts of the ESG data set, Carnot or the portfolio managers contact the companies directly and collect the missing information. Carnot uses its own scoring system (ESG questionnaire) to ensure that there are no unnecessary environmental risks in the portfolio.

#### 7.3.3 3: Engagement Questionnaire

If the Carnot analysis reveals questions (e.g. on corporate governance) or suggestions for improvement (e.g. reporting on the impact of the company), the portfolio managers use their contacts at management level to address these commitment issues personally. These pending issues are documented in the engagement questionnaire and periodically reviewed.



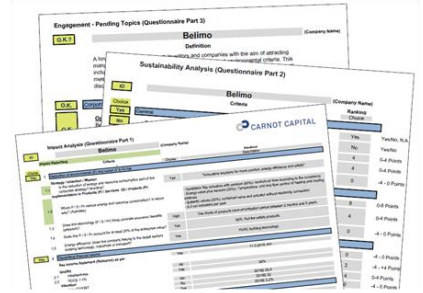
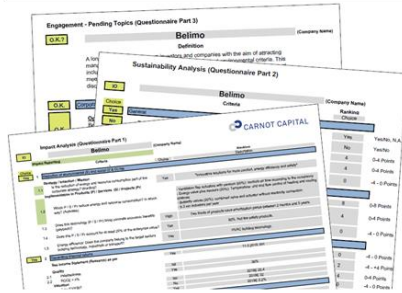


### 7.4 Carnot Impact-Analysis Questionnaires (Examples, see Appendix 3: Carnot Impact-Analysis (Part 1, Impact), Appendix 4: Carnot Impact-Analysis (Part 2, ESG) & Appendix 5: Carnot Impact-Analysis (Part 3, Engagement))

#### Impact

#### ESG plus

#### Engagement



#### Inhouse Criteria & Qualitative Ranking

- Reduction of ESG risk
- Generating financial returns
- Environmental & social opportunities: ESG screening
- Positive effects: performance & impact measurement & SDG mapping

#### Inhouse Criteria & Quantitative Ranking

- General
- Environment
- Social
- Corporate Governance

#### Open Questions & Answers

- **Unique Carnot Impact Case**
- Corporate Governance
- Social
- Environment
- General



### 7.5 Carnot Impact-Controlling

To ensure that impact investing isn't seen as merely a marketing matter it is necessary to solidify investor confidence in impact investing. Because of this, the Carnot Impact Investing process is controlled. For this task, Carnot has created a **“dedicated specialist department for Impact Investing”**, which oversees the systematic application of the analysis methods and compliance with the Impact-process.

The **Chief Impact Officer** leads the department dedicated for Impact Investing and supports portfolio management as well as marketing and sales. The completed Impact-Analysis-

Questionnaires of the individual companies will be submitted to the department for review.

Our **Chief Impact Officer** ensures that the process is run through in a consistent manner, that the filters are applied correctly, and authorizes the approval of the Carnot Impact Investing universe on the questionnaire that has been filled and verified by the portfolio manager.

For each company, a questionnaire set (impact analysis, sustainability analysis, engagement tasks) is compiled and filed as documentation. The Chief Impact Officer keeps a list of companies and periodically checks the completeness and timeliness of the questionnaires.

Impact-Analysis Questionnaire Companies



Date		Analysis				Re-check					
Company		ESG		Impact	Engagement	Date					
Fund	Name	Vontobel	Carnot Capital	Carnot Capital	Carnot Capital	Creator	Creation Date	Creator	Update Date	Creator	Approval Date
CEE & CER	Aroadis	Yes	Yes	Yes	None	RH	16.04.2018	TG	13.03.2019	WA	04.03.2019
CEE & CER	Concentric	No	Yes	Yes	Open	RH	07.02.2018	RH	18.03.2019	WA	24.03.2019
CEE & CER	Geberit	No	Yes	Yes	None	RH	15.06.2018	...		WA	04.03.2019
CEE & CER	Inwido AB	No	Yes	Yes	Open	RH	26.02.2019	...		WA	04.03.2019
CEE & CER	Kone Oyj Class B	Yes	Yes	Yes	None	AG	19.03.2019	...		WA	24.03.2019
CEE & CER	Norma	No	Yes	Yes	None	RH	21.06.2018	...		WA	04.03.2019
CEE & CER	Wärtsilä Oyj Abp	Yes	Yes	Yes	None	AG	11.03.2019	...		WA	11.03.2019

Review Impact Investment

Approved Impact-Officer (IO), Date

WA 05.09.2019



### 7.6 Carnot Impact Data Preparation

As various indicators can be used to measure the impact on the SDGs, the selection of these indicators, data collection and data preparation are of central importance. The International Finance Corporation (IFC) of the World Bank has Operating Principles for Impact Management<sup>40</sup>, which provide guidance.

#### 7.6.1 The IFC’s Operating Principles for Impact Management

The IFC of the World Bank has issued 9 Principles that consider the core elements of Impact Investing and determine the disclosure of the signatory organizations.

The Carnot Impact Investing process was developed years before the release of the IFC, yet it fully covers these newly created principles. Below the Carnot Impact Investing process is reviewed against the 9 Principles.

##### 7.6.1.1 IFC Principle 1: Strategic Intent

The Impact Questionnaire reviews and documents the strategic contribution of the portfolio company.

##### 7.6.1.2 IFC Principle 2: Financial, Environmental and Social Returns

The Impact, ESG plus, and Engagement Questionnaires review and document the financial return as well as the environmental and social contribution of the portfolio company.

##### 7.6.1.3 IFC Principle 3: Investors' Contribution to Achieving the Impact

The Carnot Impact Analysis process ensures that investments are only made in companies that have a proven impact.

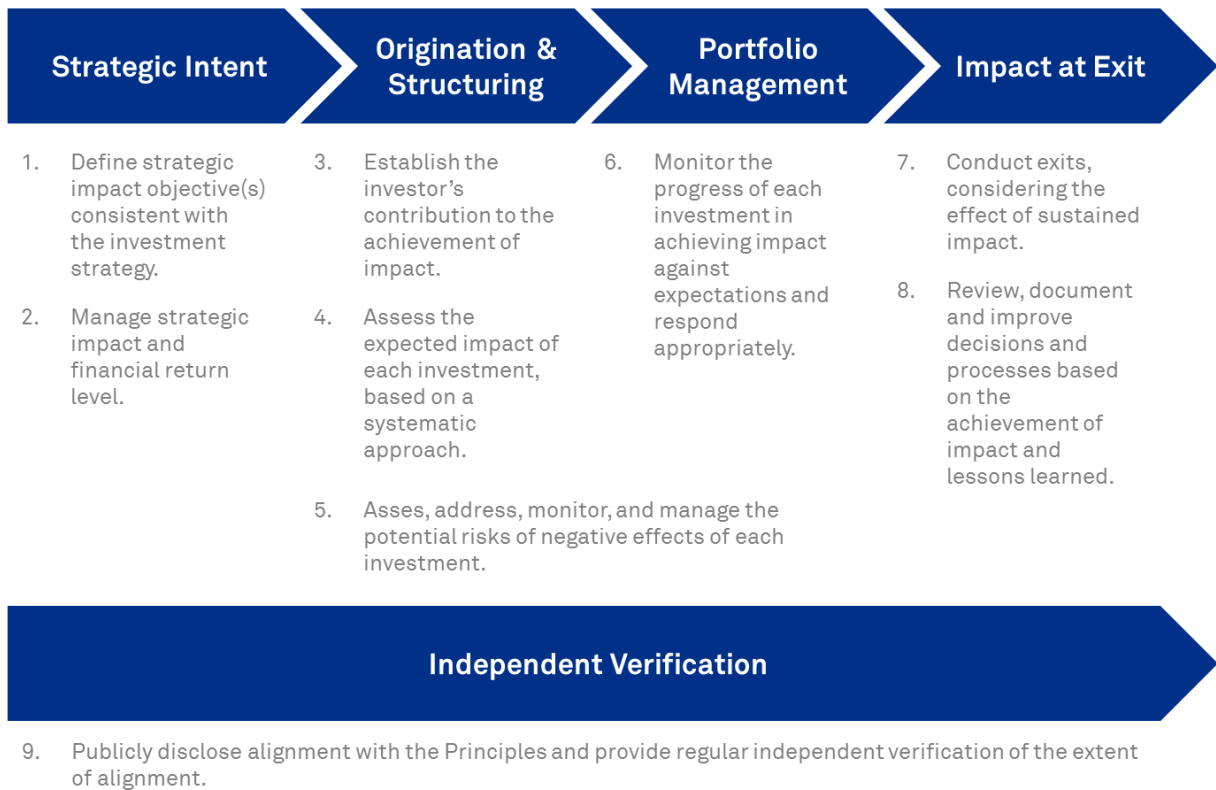
##### 7.6.1.4 IFC Principle 4: Impact on the SDGs

In the analysis, the criteria for impact as well as the effects on the SDGs are examined and evaluated. The choice of topic (reduction of consumption) guarantees Impact.

##### 7.6.1.5 IFC Principle 5: Negative Effects

The sustainability analysis is not only prepared through negative screening (exclusion lists, top-down), but also through positive screening (ESG rating, bottom-up). Carnot uses its own scoring

## OPERATING PRINCIPLES FOR IMPACT MANAGEMENT



<sup>40</sup> IFC International Finance Corporation (Feb. 2019), Operating Principles for Impact Management.



system (ESG plus questionnaire) to ensure that there are no unnecessary environmental and social risks in the portfolio.

#### **7.6.1.6 IFC Principal 6: Impact Controlling**

Carnot Impact Controlling monitors the impact analysis process and documents the results per company in a database. Comparisons over time are presented in the Impact Report.

#### **7.6.1.7 IFC Principal 7: Divestment Consequences on Impact**

Since the portfolio companies are listed companies, the continued financing of the company is nevertheless guaranteed, even in the event of our divestment.

#### **7.6.1.8 IFC Principal 8: Impact Reporting**

Both the Carnot Impact Report (external) and the Carnot Impact Database (internal) document the processes, results and potential for improvement.

#### **7.6.1.9 IFC Principal 9: Disclosure of Compliance with IFC Principles**

The disclosure is automatically part of the Carnot Impact Reporting, under the title "Memberships", where the annual report as a member of professional organisations is communicated.

### **7.6.2 Databases**

A database with detailed information about an individual company regarding ESG ratings and SDG-related impact is at the top of the wish list of sustainability analysts and portfolio managers. This would allow the portfolio to be checked for the desired sustainability on a computer-based basis and a repeatable reporting to be generated. Two hurdles currently stand in the way of this solution: firstly, the ESG nomenclature and, above all, the impact nomenclature have not yet been standardised, and secondly, there is a great deal of room for interpretation in data collection as to whether a company fulfils a criterion or not.

The disadvantage of the mixture of qualitative and quantitative aspects of the indicators is that the reporting by the companies is very free, partly verbal, partly numerical and cannot be systematically recorded by analysts. As a result, it is often the case that the data recorded by the database is incomplete or even incorrect.

Without any claim to completeness, there are various databases on the market that specialise in sustainability: ISS-ESG, Neudata, Open FactSet, RepRisk, YourSRI, etc.

The CO<sub>2</sub> footprint is a popular measure of a company's sustainability or impact on the climate. However, it is primarily about the impact of the ESG perspective on the company itself, the impact generated by its products, services and projects is missing.

In order to disclose improvements, comparability over the years is needed. Especially in the case of corporate groups, a historical comparison is practically impossible due to changes in the scope of consolidation and missing data.

In fact, it is not easy to extract product-related sales information from business reports. Since Carnot also carries out the financial analysis of the companies themselves and is in direct contact with the executives, there is some information from this side, even if it is only an estimate of the management. In addition, the annual reports are read and searched for useful information.

### **7.6.3 Carnot Impact Case Studies**

Currently, Carnot presents its impact in part via case studies and shows the effect of the products of a company. For this purpose, estimates, proprietary calculations and analyses are made and a weighting categorization is carried out (0-3, zero to large impact). A consolidated calculation across the entire portfolio, e.g. on "energy saved through the use of energy-efficient products", is not possible with today's data and Carnot does not believe that an estimate would be reliable.



### 7.6.4 Carnot Impact Database

Current company data and financial ratios are obtained from FactSet® and imported into our Master Workbook. Carnot maintains this workbook as a proprietary database in Excel. It is divided into different worksheets, e.g. "Impact", "SDG-Mapping", "Voting", "Data" and "Ranking & Heatmap".

All three questionnaires of each portfolio company are linked to this Master Workbook, for example in

#### 7.6.4.1 Our Master Workbook

the worksheet "Data". This allows a consolidated evaluation of the impact analysis for the individual Carnot Funds.

The combination of information from a professional database (FactSet®) and from our own surveys is a pragmatic approach to reveal a comprehensible statement about the impact of a product, a company and finally a portfolio on the SDGs using a mixture of qualitative and quantitative indicators.

Company	Umsatz hoch, mittel,...	Umsatz eingehen	F&E Anteil in %	F&E eingehen	Positive Auswirkungen	Leistungs- (Output) & Wirkungsbewertung (Outcome / Impact)
ABB	0	0	5.0	5.0	hoch	<70%
Advanced Energy Indust	0	0	10.6	10.6	hoch	Geschätzt > 80%. Siehe 1.4 zu
AF AB	70	0	20.0	20.0	hoch	70%
Alimak Group	0	0	80	1.0	hoch	> 80%
Amdocs	0	0	50	1.0	hoch	0%
Applied Materials, Inc.	40	0	0	0	hoch	Konzernumsatz 2018: 3.2 Mrd
ARMIS	0	0	0	0	hoch	Konzernumsatz 2018: 3.2 Mrd
Arcadis	0	0	10.0	10.0	hoch	Geschätzt 10%, Arcadis ist in erster Linie Dienstleister. R&D eher t
Arcadis	0	0	50	10.0	hoch	Geschätzt 10%, Arcadis ist in erster Linie Dienstleister. R&D eher t
Argan Inc.	0	0	50	1.0	mittel	Geschätzt > 50%. Siehe 1.4 zu
Asahi Kasei Corp.	40	0	40	0.5	hoch	100%, vgl. Frage 1.4. Gesamts
Baxter SA	0	0	100	0	hoch	CHF 520m, 80% des Umsatzes
Beltimo	0	0	80	7.7	hoch	70-80%
Brexit	0	0	95	3.6	hoch	Konzernumsatz 2018: 3.2 Mrd
Brexit	0	0	95	1.0	hoch	Konzernumsatz 2018: 3.2 Mrd
Brexit Industries AG	0	0	95	2.5	hoch	ca. 90% Umsatzzanteil (Agrar
ConocoPhillips	0	0	90	2.5	hoch	90%
Continental	35	0	35	3.7	hoch	Geschätzt > 50% (inkl. "saub
Cummins Inc.	0	0	30	3.7	hoch	> 90%. Auf Daiseki und die k
Daiichi Co. Ltd.	0	0	100	5.8	hoch	Geschätzt < 5% (siehe Frage
Dalight	0	0	40	0.5	gering	Geschätzt < 5% (siehe Frage
Downer EDI Ltd.	0	5	0	0.5	gering	Geschätzt < 5% (siehe Frage
DS Smith PLC	40	0	40	0	hoch	Geschätzt > 25%
EDAG	0	0	25	30.0	hoch	Geschätzt > 75%. Siehe 1.4 zu
EMCOR Group Inc.	0	0	75	0	hoch	35%
Emu	35	0	35	2.0	hoch	26%. 2018 entfielen 26% (-4.6
Farecta SA	26	0	26	1.7	mittel	26%. 2018 entfielen 26% (-4.6
FordFamco N.V.	0	0	80	0.5	hoch	80%
Gabbert	0	0	85	2.7	hoch	> 85%
Gabbert	0	0	85	2.7	hoch	> 85%
Gabbert Corp.	0	20	20	5.8	hoch	siehe Frage 1.4. Den Umsatz
Georg Fischer	40	0	40	2.8	mittel	ca. 40% Umsatzzanteil (Umsat
Georg Fischer	40	0	40	2.8	mittel	Konzernumsatz 2017: EUR 1.3
Geschwimer AG	0	0	83	0.5	hoch	Konzernumsatz 2017: EUR 1.3



## 8. Reporting: Measurement indicators and report types

Reporting is important for creating and nurturing investor confidence. It is necessary to demonstrate transparency and accountability. It provides a verifiable impact investing record and helps investors make comparisons between and scrutinize their investments.

### 8.1 Existing Standards and Regulations

Sustainability regulation includes the SDGs as well as international sustainability guidelines such as UN PRI (UN Principles for Responsible Investment), GRI (Global Reporting Initiative (Standards)), UN Global Compact, OECD Guidelines, etc.

An important approach in this context is the SASB Materiality Map of the Sustainability Accounting Standards Board (SASB)<sup>41</sup>. The SASB-Matrix links fundamental sustainability factors with their financial valuation and uses specific indicators related to the ESG risks of the company.

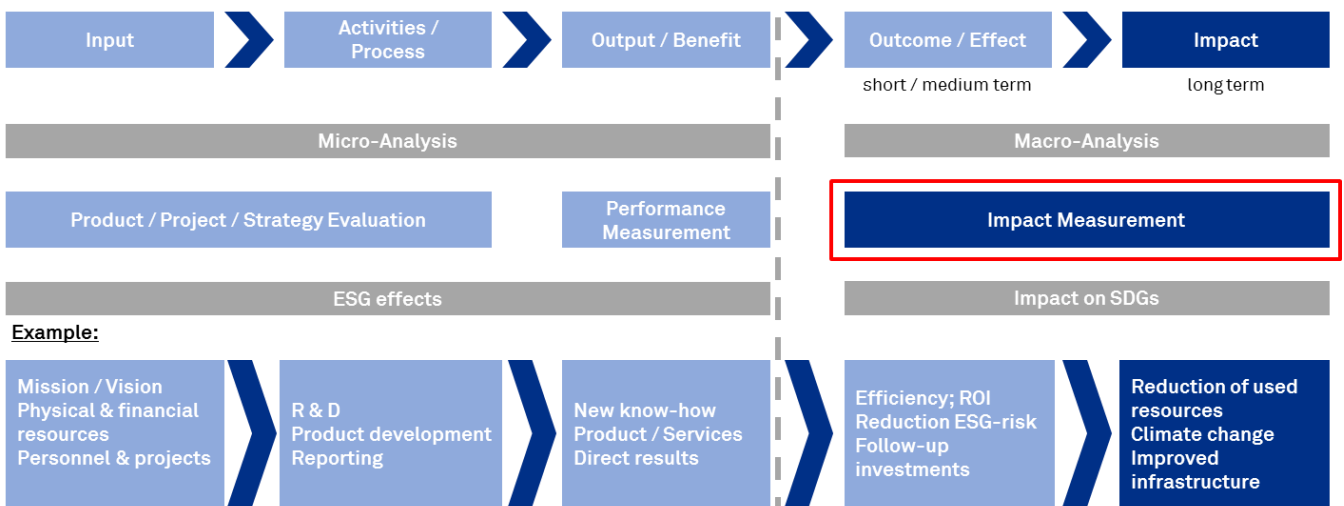
Another initiative is the EU Action Plan for Financing Sustainable Growth, which seeks a

European solution with the following objectives: 1. to redirect capital flows towards sustainable investment to achieve sustainable and inclusive growth, 2. to manage financial risks arising from climate change, resource scarcity, environmental degradation and social problems, and 3. to promote transparency and sustainability in financial and economic activity. The final report of the Technical Expert Group should be available by mid-June 2019 and the implementation of a legally binding taxonomy should start by the end of the year.

The standardization of reporting is currently focused on the ESG area around the company, the impact of the products with their effect on the SDGs is missing. Carnot therefore discloses the impact in its own modelling.

In the example below, the Carnot Impact Measurement is detailed along the Impact Model "Reduction of Energy and Resource Consumption":

Impact measurement: reduction of energy and resource consumption (Logic Model)



<sup>41</sup> See Sustainability Accounting Standards Board SASB (2017) as well as Khan et al. (2015).



### 8.2 Purely quantitative measurement: Performance measurement

Output-derived, quantitative measurement indicators are traditionally determined via performance measurement. The known financial ratios or applied measures for ESG factors are taken from previous reporting forms:

Measurement Indicator	Reporting Type
<ul style="list-style-type: none"> <li>• Sales of dedicated products</li> <li>• Number of people reached</li> <li>• Research and development investments</li> <li>• Efficiency; ROI</li> <li>• Follow-up investments</li> <li>• Reduction of ESG risks</li> </ul>	<ul style="list-style-type: none"> <li>• Annual Report</li> <li>• Social and Environmental Report</li> <li>• Environmental Balance Sheet</li> <li>• ESG-Sustainability Portrait</li> </ul>

This information is presented in an understandable form and can be assigned as impacts to individual goals and companies using SDG mapping.

The ESG analysis is significantly important and presents the sum of positive as well as negative environmental and social effects by means of a sustainability portrait<sup>42</sup> at company level.

Commercial databases provide only parts of the ESG data set. It can occur, that companies which score well throughout the Carnot Impact analysis are rated below average by rating agencies. These companies are contacted directly, and the missing or controversial data is collected by Carnot.

The questions of whether the number of people reached, the sales of dedicated products or the research expenditures, measured in the respective units of measurement, can have a **measurable impact** on an SDG is not yet clear. To establish this, it requires an interpretation of these measurement indicators in conjunction with the desired goals and the SDGs. Most likely, it will need additional measurement indicators to supplement.

### 8.3 Mixed quantitative & qualitative scale: Impact-Measurement

Energy efficiency is an example of the use of quantitative and qualitative standards. In the Carnot Impact process, the questionnaire analysis revealed the following impact evidence:

#### 8.3.1 Working Example: “Manufacturers of Actuators”

**Intention / strategy:** Manufacturing of actuators in the field of Ventilation/Heating/Cooling that enable improved energy efficiency (Goals 7 & 13 of the SDGs).

**Implementation:** Evaluation of products aimed at improving energy efficiency: In 2018, according to the annual report, 6.7 million actuators were produced.

#### Impact - Significance:

- **Energy saving: SDG 7.3** By 2030, the global rate of increase of energy efficiency is expected to double.
- **CO<sub>2</sub> reduction: SDG 13.2** Include climate change measures in national policies, strategies and plans.

<sup>42</sup> Vontobel Asset Management AG (2017)



### 8.3.2 Interpretation

A modern actuator reduces the energy consumption (**energy saving: SDG 7.3**) of a ventilation system or a heating or cooling circuit by approx. 30%. With an average electrical output of the pump or fan behind it of 1,000 watts, 300 watts are saved. If half of the installed drives replace "old" drives, this results in a saving of 1,000 MW, which is roughly equivalent to the output of a medium-sized coal-fired power plant.

A 1,000 MW coal-fired power plant emits around 7 million tonnes of CO2 per year. The actuators (**CO2 reduction: SDG 13.2**), which replace existing

installations, save around 3.5 million tonnes of CO2 per year (assumption: half the operating time of the actuators as the operating time of the coal-fired power plant used for comparison).

This amount of CO2 saved corresponds to the CO2 emissions of 700,000 Swiss people over one year.

With this company holding 5% of the Carnot portfolio, the direct impact is a reduction of 0.18 million tonnes of CO2 per year.

The figures used in the interpretation are derived from Carnot Impact calculations made specifically for this company.

Impact Measurement and Calculation		
Product/Service/Project		Impact
1,1	<b>Intention:</b> Manufacture of products in the area of "Drives", which is an application that enables improved energy efficiency (SDGs number 7 & 13)	7 and 13
	<b>Implementation:</b> Product "Drives"	
1,2	Number of drives produced according to 2018 financial report	6 700 000 Drives
1,2		
<b>Impact Scope:</b>		
4,11	<b>Energy saving: 7.3:</b> Doubling the global rate of increase in energy efficiency by 2030	7,3
4,11	<b>CO2 reduction: 13.2:</b> Integrating climate protection measures into national policies, strategies and planning	13,2
4,11		
<b>Interpretation:</b>		
	A new drive consumes approx. 30% less energy, with an average electrical drive power of 0.001 megawatts 0.0003 megawatts are saved	0,0003 Mw
	X% newly installed drives replaced old drives	50%
	For all installed drives there is a saving of X MegaWatt (Mw),	1 005 Mw
	which corresponds to about X % of the output of a medium coal fired power plant (1000Mw).	101%
	The CO2 emissions of a 1000 MW coal-fired power plant amount to X million t	7 Mio. t
	The more efficient drives reduce CO2 emissions by X tons. (Assumption: half the operating life of a coal-fired power plant)	3,5 Mio. t
	CH: 5t CO2 /person & per year. This corresponds to the annual output of X Swiss individuals.	703 500 Swiss individuals
	The portfolio share in the company amounts to X%.	5%
	Pro rata impact corresponds to a CO2 reduction of X million T and is valued at X% in the company.	0,176 Mio. t
	Portfolio share: CH: 5t CO2 /person & per year. This corresponds to the annual output of X Swiss individuals.	35 175 Swiss individuals





### 8.4 Addressed Development Goals, SDGs

Carnot Impact Mapping compares the reduction in consumption from the Carnot Impact areas (climate change, circular economy), including sub-themes, with the objectives of the SDGs and links them if there is a qualitative agreement. The Carnot Impact Analysis Questionnaire assesses the impact of the selected companies according to specified criteria and records it with a personal ranking (0-3). A Carnot Impact Ranking List and an Impact-Heatmap reveal their quality and their contribution to the positive effects.

#### 8.4.1 Achieved Development Goals: Evaluation

The impact analysis (Impact Questionnaire, Part 1), for example, shows that energy-efficient products account for 80% of sales. The products are used worldwide. At 7.7% of sales, R&D expenditure is very high, and the applications have an amortization period of between 2 and 60 months. The most significantly supported sustainable development targets are 7 (clean energy) and 13 (climate protection). The analyst gives this a maximum rating of 3, which means "significant impact". He rates the impact on SDG 9 (resilient, modern infrastructure) as 2 "substantial" because the products of this company help to cope with urbanisation. He rates the impact on SDG 8 (decent work and economic growth) as 1 "low impact" because the products - not least the fire dampers that the company also manufactures - improve well-being at work and help to decouple economic growth from environmental destruction. In SDG 11 (Sustainable Cities), he opted for a rating of 0 "insignificant impact" because the portfolio company does not achieve any direct effect in the sense of the sub-goals listed.

#### 8.4.2 Further Positive Effects

Companies that align their business models with the SDGs will be successful in the long term as they adapt to the future needs of an increasingly global society. Sustainability becomes a competitive advantage.

#### 8.4.3 Negative Effects

As innovation enters new technological territories, it increases the risk that new innovations will not generate any benefit or even damage existing processes. The ESG bottom-up filter tries to check the sustainability of the company and exclude or minimise negative effects. Nuclear energy, for example, supplies CO2-free electricity, while final waste disposal and plant deconstruction are a burden on the balance sheet. If these problems

were solved satisfactorily, nuclear energy would no longer have to be excluded.

Belimo: Impact Appraisal by Carnot

	Climate Action	<b>3</b> Significant
	Affordable and clean energy	<b>3</b> Significant
	Industry, Innovation and Infrastructure	<b>2</b> Substantial
	Sustainable cities and communities	<b>0</b> Insignificant Impact
	Decent work and economic growth	<b>1</b> Low Impact

#### 8.4.4 No Effects

White spot: What's missing? A company cannot serve all SDGs with its production and products. Some goals are 100% achieved, some are only limited, others are not affected at all. The non-existent effects appear as white spots in the Carnot Impact Heat-map.

### 8.5 Report Types: No Standards

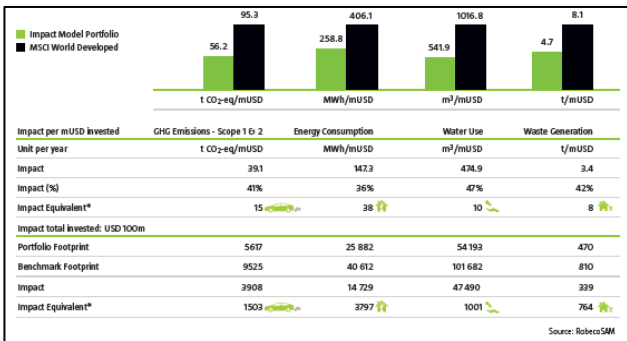
There are no standardised presentations and reports for impact reporting, as we know them from classic annual reports, for example. The further development of the performance reporting (annual report, social report, environmental report, life cycle assessment) to an impact reporting (measurement and presentation of the impact on the SDGs) is in full swing. The aim is to quantify the positive effects, using examples from individual companies or the entire portfolio. Due to the need for interpretation of the data collected in the impact analysis, a variety of possible presentations are possible.

**Example 1: Report form related to the circular economy of four companies<sup>43</sup>**

Holdings: Huhtamaki, Brambles, Cleanaway and Umicore



**Example 2: Report form that compares the impact of the portfolio to the benchmark<sup>44</sup>**



**8.6 Carnot Reporting Methods**

Carnot's impact reporting aims to establish a direct link, for example, between the impact of the Carnot Efficient Energy Fund and the selected SDGs. The assigned SDGs, namely No. 7,8,9,11 and 13, are weighted for each portfolio company according to the degree of fulfilment (e.g. revenue share and effect) and presented as a matrix. Individual successes in the implementation of efficiency are calculated using product examples of individual portfolio companies.

**8.6.1 Impact Overview**

In a case study, Carnot played through the impact analysis process in an exemplary manner. The investigated company fits excellently into the portfolio of the Carnot Efficient Energy Fund. With its products, this company achieves a very high impact in the sense of the sustainable development goals "climate action" (No. 13) and "affordable and clean energy" (No. 7).

**8.6.2 Carnot Ranking**

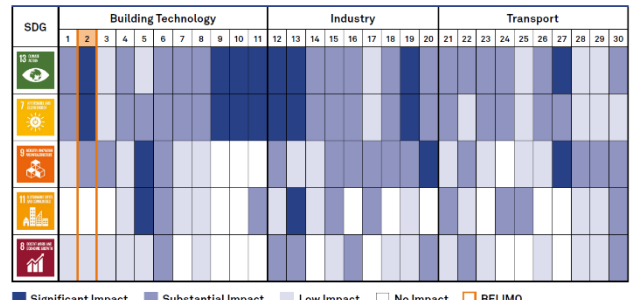
With the Impact Ranking List, the top-ranked development goals are presented in hierarchical order after evaluation. The size of the area of the individual SDG represents the evaluation (0-3) of the company. The same representation can also be generated for a portfolio in which all valuations of the companies are counted together and then the area size is determined.



**8.6.3 Carnot Heat Map**

The following table ("heat map") provides an overview of the impact of the 30 portfolio companies, broken down by SDG. The evaluated impact ranges from dark blue (significant) to white, where no significant impact could be determined. The order of the SDGs is determined by the ranking list with the highest impact ratings.

30 Portfolio Companies of the Carnot Efficient Energy Fund at a Glance



Belimo is Nr. 2 in the chart. Further examples from the industrial and transport sectors include: Rotork (UK) Nr. 20, EMS Chemie (CH) Nr. 21.

**8.6.4 Double Bottom-Line Returns: Financial Return and Impact**

Impact investing is not a matter of pure philanthropy, in which impact is prioritized at the expense of financial return. On the contrary, a social-ecological self-image can be combined with a profit-oriented investment policy without contradiction. Sustainable investment is an instrument of risk management and is used specifically to increase performance. In medium-sized companies it can be statistically proven, that sustainable investment does not mean having to forego financial returns<sup>45</sup>.

<sup>43</sup> See Standard Life Investments (2017), Page 11

<sup>44</sup> RobecoSAM (2015), Page 2

<sup>45</sup> See Carnot Efficient Energy Fund



### a) Profitability

✓ The development of more efficient products, services, processes and activities results in a reduction in consumption that makes the use of resources sustainable (= increase in efficiency). The demand for these products and services increases and helps companies to increase their turnover and profits.

✓ The in-house application of consumption reduction measures improves the performance parameters of the company itself, which also has a positive effect on the financial return.

### b) Positive Social and Environmental Effects

The promotion of sustainable enterprises even generates additional income:

✓ Sustainable companies are better at dealing with risks, because what is measured is also managed. More ecological processes reduce environmental risks, while social criteria and governance standards minimize reputational risks.

✓ There are positive social and environmental effects in both the short and long term. Reducing energy consumption, for example, improves air quality in the short term. In the long term, it makes economic growth environmentally compatible and helps to counteract climate change.

Energy and Resource Efficiency: Double Bottom Line



\* See Edward Freeman: Strategic Management, A Stakeholder Approach (1984)

## 8.7 The Carnot Impact Report (See Appendix 1: Impact Report Carnot Efficient Energy Fund & Appendix 2: Impact Report Carnot Efficient Resources Fund)

The Carnot Impact Investing approach outperforms the others by combining **financial and socio-ecological performance**. The Carnot Impact Report presents the results of the five process steps in which the positive (minus the negative) effects are reflected:

1. Topic of Resource & Energy Efficiency
2. Controversial Activities (ESG Top-Down Analysis)

### 3. Financial Analysis

4. Sustainability (ESG Bottom-Up Analysis)
5. Impact Validation
6. Engagement

#### 8.7.1 Topic: Resource & Energy Efficiency

Carnot invests 100% in companies with products, services and development projects that reduce resource and energy consumption. This reduction in consumption must be part of the company's strategy. Such companies can be found in the resource segments (energy, earth, water, air) or the energy segments (building technology, industry and transport). A tick-the-box list of all sub-segments shows what is currently represented in the portfolio.

#### 8.7.2 Controversial Activities (ESG Top-Down Analysis)

Portfolio candidates are examined for controversial activities and, if necessary, excluded (negative screening). For certain activities that are difficult to identify, a five percent revenue tolerance threshold is applied. The portfolio share should strive towards zero.

#### 8.7.3 Financial Analysis

Carnot is convinced that sustainability and impact can only be guaranteed if a company is financially sound. This requires a) a strong balance sheet (low leverage), b) a good return on capital employed (ROCE). A high ROCE promotes growth and innovation, which in turn reinforces the positive impact.

#### 8.7.4 Sustainability (ESG Bottom-Up Analysis)

In the sustainability analysis of portfolio candidates, the strategic significance of sustainability is examined, and test points are assessed regarding the environment (products, production, supply chain), social aspects (suppliers, employees, society, customers) and corporate governance.

In the case of the **Energy Efficiency Fund**, companies that meet the requirements in steps 1 to 3 regarding energy-efficient products, controversial activities and sound financial ratios are well placed to qualify as sustainable. Only portfolio candidates are analysed, i.e. not the entire investment universe, which reduces costs and increases quality. The scale ranges from 0-100 points, **an investment is considered sustainable from 67.5 points.**



The **Resource Efficiency Fund invests exclusively in sustainable companies**. The analysis is carried out by Bank Vontobel. Portfolio candidates for which no sustainability assessment is available are reviewed by Bank Vontobel specifically for Carnot. This approach significantly expands the investment universe. The sustainability contribution of the industry and the sustainability contribution of the individual company are included in the rating.

### 8.7.5 Impact Validation (See Appendix 1: Impact Report Carnot Efficient Energy Fund – Page 46)

#### 8.7.5.1 Addressed Development Goals

The portfolio companies are implementing a reduction in energy and resource consumption and are thus making a decisive contribution to the "UN's Sustainable Development Goals" (SDGs). The main goals are "affordable and clean energy" (No. 7) and "climate action" (No. 13). Furthermore, the portfolio companies make a substantial contribution to decoupling economic growth and environmental pollution (No. 8.4), modern infrastructure and cleaner industries (No. 9.4) and to sustainable transport systems (No. 11.2). Some portfolio companies have further impacts in the sense of other development goals, which are not shown here because this is not our focus.

For the impact assessment, the share of revenue of the relevant products as well as their effectiveness are considered. The results are mapped by company and development goals in an "Impact Heat Map".

#### 8.7.5.2 Portfolio Share of Impactful Companies

Concentrating on the issue of reducing consumption means that all positions have a positive environmental impact. The impact per SDG is broken down into "significant", "substantial" and "low impact" based on the personal assessment.

#### 8.7.5.3 Share of Revenue with Impact Products

In the Impact Questionnaire (No. 1), the revenue relevant to Impact is determined. On average, portfolio companies generate around half of their revenue with products, services and projects that have a positive impact. A fund investment of CHF 1 million, for example, generates approximately CHF 0.5 million in revenues of products with a positive environmental impact. Part of this revenue also has a social impact (SDGs 9.4 and 11.2); the exact revenue figure is not determined in this analysis.

### 8.7.5.4 Research and Development of Impact Products



A significant positive impact results from the research and development expenses of the portfolio companies. R&D expenditure accounts for more than 5% of the companies' revenues. A fund investment of CHF 1 million thus accounts for tens of thousands of Swiss francs of development expenditure in the service of improved efficiency.

### 8.7.6 Engagement

If the Carnot Impact Analysis (Engagement Questionnaire, No.3) reveals questions (e.g. on corporate governance) or suggestions for improvement (e.g. on the impact reporting of the company), we use our contacts to the management level and address these commitment issues personally. In the reporting, the opened, pending and closed engagement cases are presented in order to document our work.

### 8.7.7 Company Example

In order to show the investor a tangible result of his impact investments, Carnot develops case studies on companies, which present the connection between product and SDG.

Company	Products w/ Impact	Details
		Segment/Topic: Building Tech./Ventilation, Heating Portfolio Weight: 5.3% Share of Revenue from Energy Efficient Products: 80% ROCE: >50% Net Debt: 0x R&D Expenditure (% Revenue): 7.7% Sustainability (0-100): 90 Environmental Impact*: SDG 7/13/8 Social Impact*: SDG 9 significant substantial
	Ventilation Flaps and Valve Actuators in Buildings	Intelligent flaps and valves can reduce energy consumption for heating, ventilation and cooling by up to 80%. Key technologies include ongoing optimization of temperature and flow rate of heating and cooling water, occupancy sensors, variable fan and pump motors, etc. Belimo is the world market leader for ventilation flaps and valve actuators in buildings.

\* Scale: significant, substantial, considerable, low impact

### 8.7.8 External Sustainability Assessments (See Page 49)

The modular structure of the report allows the integration of external sustainability assessments. This allows the Carnot portfolio to be compared with third party portfolios. For example, yourSRI© can calculate the sustainability of the Carnot portfolio. The analysis is based on the comprehensive database of MSCI©. The calculations show the sustainability assessment (rating, maximum AAA), the rank in the whole universe (ranking - global percentile), the rank in the comparison group of similar portfolios (peer percentile), the conformity with the United Nations Global Compact Compliance as well as the portfolio share of companies with controversial activities.



### 8.7.9 CO<sub>2</sub> Footprint: ESG View

This indicator for a sustainable portfolio is currently enjoying great popularity. In order to facilitate the comparability of the Carnot portfolios, a third report (see page 49) by yourSRI is also used here, based on data from ISS Ethix®.

Although the Carnot portfolios performs significantly better than the overall market, a two-part interpretation is important as the impact on the SDGs extends further than the impact of ESG on the firm.

The analysis of the CO<sub>2</sub> footprint is based on the company's ESG perspective. This analysis includes:

- the CO<sub>2</sub> emissions of the company when providing the service (Scope 1),
- emissions from electricity suppliers (Scope 2)
- and the emissions included in other purchased services and products (scope 3)

**What this analysis does not consider are the CO<sub>2</sub> reduction effects that the companies' products, services and projects have. But this is precisely the impact on the SDGs that Carnot believes should be measured (Impact beyond ESG). That is why Carnot makes its own assessment.**

### 8.7.10 Memberships

As a signatory, Carnot Capital is committed to implementing the six United Nations Principles for Responsible Investment (**UN PRI**) in its investment process.



Carnot Capital is a member of the **Swiss Sustainable Finance**.



The Carnot Impact Investing process complies with the 9 steps concerning "**Operating Principles for Impact Management**". The IFC of the World Bank has issued these rules.





## 9. Appendix 1: Impact Report Carnot Efficient Energy Fund

Example 3: Page 1 of the Carnot Efficient Energy Fund - Impact Report



### Carnot Efficient Energy

Impact Report Q1 2019

The Carnot Efficient Energy Fund is an impact investment fund. It invests in listed companies that develop and produce energy efficient products and technologies, that reach people all around the world. In addition to the financial return, the fund investor, as co-owner of the portfolio companies, has 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. It is detailed in the research paper titled "Investing into Energy and Resource Efficiency with a Measurable Impact", which can be found [here](#) and on Carnot Capital's website.

#### a) Impact of the Carnot Efficient Energy Fund

Carnot Impact Investing is a blended approach, which differentiates itself through financial as well as social and environmental performance. The positive effects (impact) are created in five 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

#### b) 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 technologies, industrials and transport sectors. Some portfolio companies also generate revenue from renewable energy products, which is shown separately in the following overview.

Fields of Activity of the Portfolio Companies, as per 31.12.2018\*

Building Technology	Industrials	Transport	Renewable Energy
32.9%	27.0%	32.5%	7.8%
Topics currently covered: <input checked="" type="checkbox"/> Heating <input checked="" type="checkbox"/> Cooling, Ventilation <input type="checkbox"/> Thermal Insulation <input checked="" type="checkbox"/> Windows, Doors <input checked="" type="checkbox"/> Elevators <input checked="" type="checkbox"/> Smart Buildings <input checked="" type="checkbox"/> Lighting <input checked="" type="checkbox"/> Planning	<input checked="" type="checkbox"/> Energy Supply <input checked="" type="checkbox"/> Automation <input checked="" type="checkbox"/> Internet of Things <input type="checkbox"/> Energy Storage <input checked="" type="checkbox"/> Water Management <input checked="" type="checkbox"/> Engineering <input type="checkbox"/> Pumps	<input checked="" type="checkbox"/> Lightweight Construction <input checked="" type="checkbox"/> Consumption Reduction <input checked="" type="checkbox"/> E-Mobility <input type="checkbox"/> Batteries <input checked="" type="checkbox"/> Rail Transport <input checked="" type="checkbox"/> Sea Freight	<input checked="" type="checkbox"/> Water Energy <input checked="" type="checkbox"/> Wind Energy <input checked="" type="checkbox"/> Solar Energy <input checked="" type="checkbox"/> Energy from Waste <input checked="" type="checkbox"/> Energie from Biomass

\* Measured by the position sizes.



### Example 3: Page 2 of the Carnot Efficient Energy Fund - Impact Report

#### c) 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 (low) turnover tolerance threshold is applied.

Controversial Activities, as per 31.12.2018		
	Tolerance Threshold	Portfolio Share
Sex Trade	-	0%
Gambling	-	0%
Genetic Engineering	-	0%
Addictive Substances (Tobacco, Alcohol)	-	0%
Land Mines, Cluster Munitions	-	0%
Weapons (Systems, Components)	5%	0%
Nuclear Energy (Power Plants, Technology)	5%	0%
Extraction of Fossil Fuels	-	0%

#### d) 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.

Relevant Financial Figures, as per 31.12.2018	
Average Debt-Equity Ratio (Net Debt/EBITDA)	0.6x
Average Return on Capital Employed (ROCE)	35%

#### e) Sustainability Analysis

In the sustainability analysis of portfolio candidates, we investigate the strategic significance of sustainability and assess environmental (products, production, supply chain), social (suppliers, employees, society, customers) and corporate governance issues.

Sustainability (Bottom-Up), as per 31.12.2018	
Share of Sustainable Companies in the Portfolio	100%
Average Number of Points Scale from 0-100, Considered Sustainable from 67.5 points	79



Example 3: Page 3 of the Carnot Efficient Energy Fund - Impact Report

f) Impact Validation

a) Addressed Sustainable Development Goals (SDGs)

The portfolio companies make it possible to reduce energy consumption and thus make a decisive contribution to the United Nations Sustainable Development Goals (SDGs). The main goals addressed are «Affordable and Clean Energy» (# 7) as well as «Climate Action» (# 13). Furthermore, the portfolio companies make a substantial contribution to the decoupling of economic growth and environmental degradation (# 8.4), modern infrastructures and cleaner industries (# 9.4) and make transport systems more sustainable (# 11.2). Some portfolio companies have effects in terms of further development goals, which we do not present here.

In our impact measurement, we consider the share of revenues of the relevant products as well as their effectiveness. We map the results according to companies and development goals in an impact heatmap.

**Addressed Development Goals (SDGs)**  
ranked by impact of the fund\*

- Climate Action**

13.2 Integrate climate change measures into national policies, strategies and planning
- Affordable and Clean Energy**

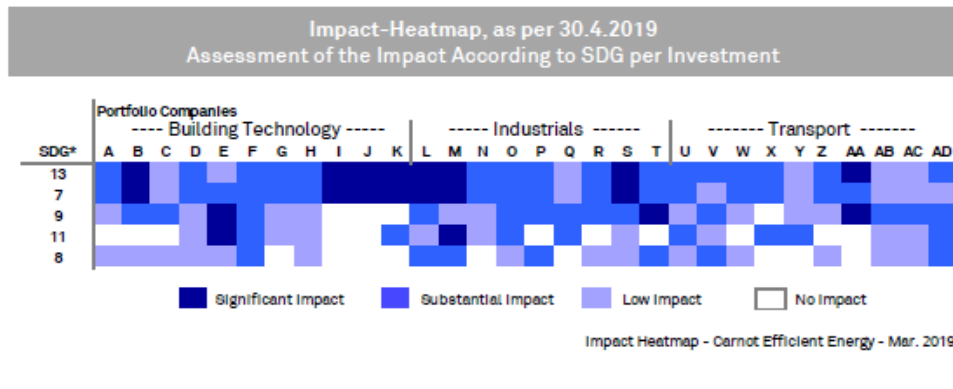
7.2 Increase the share of renewable energy  
7.3 Increase energy efficiency
- Industry, Innovation, Infrastructure**

9.4 Modernising Infrastructure, environmentally friendly industrial processes
- Sustainable Cities and Communities**

11.2 Modern public transport systems  
11.8 Reduce environmental impact of cities, improve air quality, efficient waste management
- Decent Work and Economic Growth**

8.4 Decouple economic growth from environmental degradation

\* The size of the symbols corresponds to the extent of the impact according to the heatmap



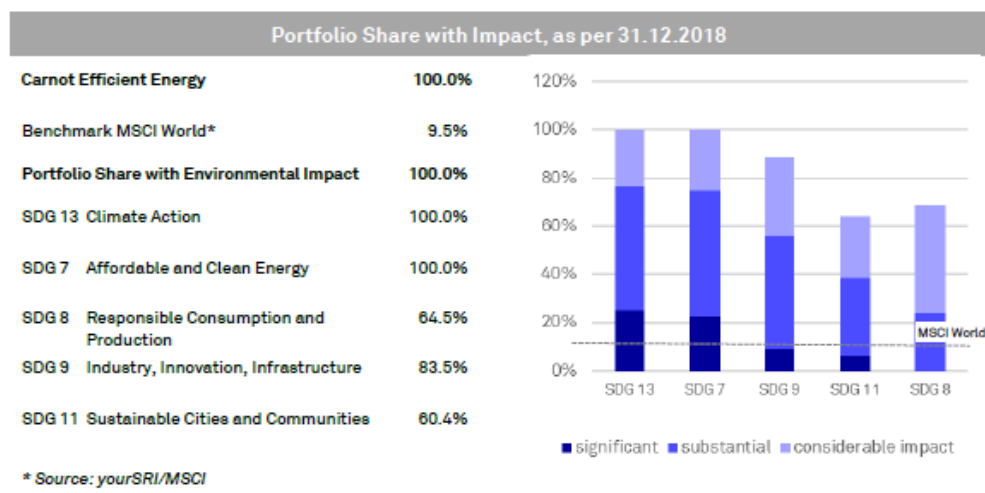




### Example 3: Page 4 of the Carnot Efficient Energy Fund - Impact Report

#### b) Portfolio Share of Impact Companies

The 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 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 0.5 million of revenues with a positive environmental impact. Part of this revenue has a social impact at the same time, as outlined above (SDGs 9.4 und 11.2); however, we do not derive the exact sales figure with social impact.

#### Revenues for Impact Products per CHF 1 Million Investment Volume, as per 31.12.2018

Impact Revenue per CHF 1 Million Investment Amount	CHF 451'000
Revenue of the portfolio companies with impact products, which amounts to an investment of EUR 1 million	58% of Revenue
Turnover with Environmental Impact per CHF 1 Million Investment Amount	CHF 451'000

#### 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 more than 5%. On a fund investment of CHF 1 million, several tens of thousands of francs of development expenditure are spent to improve energy efficiency.



#### R & D Expenditure per CHF 1 Mio. Investment Amount, as per 31.12.2018

Research & Development Expenditures per CHF 1 Mio. Investment Amount	approx. CHF 43'000
As percentage of sales revenues	5.5% of Revenue



Example 3: Page 5 of the Carnot Efficient Energy Fund - Impact Report

e) Examples

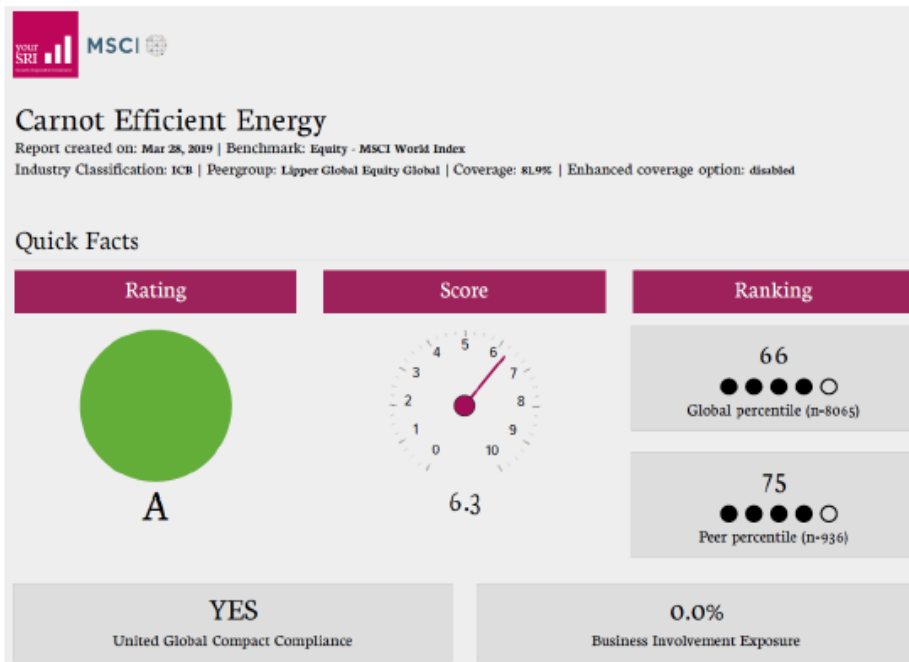
Company	Products w/ Impact	Details																		
	 <p>Ventilation Flaps and Valve Actuators in Buildings</p>	<table border="0"> <tr> <td>Segment/Topic</td> <td>Building Tech./Ventilation, Heating</td> </tr> <tr> <td>Portfolio Weight</td> <td>5.3%</td> </tr> <tr> <td>Share of Revenue from Energy Efficient Products</td> <td>80%</td> </tr> <tr> <td>ROCE</td> <td>&gt;50%</td> </tr> <tr> <td>Net Debt</td> <td>0x</td> </tr> <tr> <td>R&amp;D Expenditure (% Revenue)</td> <td>7.7%</td> </tr> <tr> <td>Sustainability (0-100)</td> <td>90</td> </tr> <tr> <td>Environmental Impact*: SDG 7/13/8</td> <td>significant</td> </tr> <tr> <td>Social Impact*: SDG 9</td> <td>substantial</td> </tr> </table> <p>Intelligent flaps and valves can reduce energy consumption for heating, ventilation and cooling by up to 80%. Key technologies include ongoing optimization of temperature and flow rate of heating and cooling water, occupancy sensors, variable fan and pump motors, etc. Belimo is the world market leader for ventilation flaps and valve actuators in buildings.</p> <p><i>* Scale: significant, substantial, considerable, low impact</i></p>	Segment/Topic	Building Tech./Ventilation, Heating	Portfolio Weight	5.3%	Share of Revenue from Energy Efficient Products	80%	ROCE	>50%	Net Debt	0x	R&D Expenditure (% Revenue)	7.7%	Sustainability (0-100)	90	Environmental Impact*: SDG 7/13/8	significant	Social Impact*: SDG 9	substantial
Segment/Topic	Building Tech./Ventilation, Heating																			
Portfolio Weight	5.3%																			
Share of Revenue from Energy Efficient Products	80%																			
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R&D Expenditure (% Revenue)	7.7%																			
Sustainability (0-100)	90																			
Environmental Impact*: SDG 7/13/8	significant																			
Social Impact*: SDG 9	substantial																			
	 <p>Water turbines and boilers for the generation of power from biomass and waste</p>	<table border="0"> <tr> <td>Segment/Topic</td> <td>Industry/Renewable Energy</td> </tr> <tr> <td>Portfolio Weight</td> <td>4.4%</td> </tr> <tr> <td>Share of Revenue from Energy Efficient Products</td> <td>50%</td> </tr> <tr> <td>ROCE</td> <td>&gt;50%</td> </tr> <tr> <td>Net Debt</td> <td>0.5x</td> </tr> <tr> <td>R&amp;D Expenditure (% Revenue)</td> <td>3.0%</td> </tr> <tr> <td>Sustainability (0-100)</td> <td>77.5</td> </tr> <tr> <td>Environmental Impact: SDG 7/13/8</td> <td>substantial</td> </tr> <tr> <td>Social Impact: SDG 9</td> <td>substantial</td> </tr> </table> <p>Water turbines generate CO2-free electricity. The power generation from biomass and waste is also considered to be CO2-neutral. Andritz (Austria) is one of the leading providers of such equipment. In addition, Andritz manufactures systems for the drying and disposal of sewage sludge (sustainable infrastructure).</p>	Segment/Topic	Industry/Renewable Energy	Portfolio Weight	4.4%	Share of Revenue from Energy Efficient Products	50%	ROCE	>50%	Net Debt	0.5x	R&D Expenditure (% Revenue)	3.0%	Sustainability (0-100)	77.5	Environmental Impact: SDG 7/13/8	substantial	Social Impact: SDG 9	substantial
Segment/Topic	Industry/Renewable Energy																			
Portfolio Weight	4.4%																			
Share of Revenue from Energy Efficient Products	50%																			
ROCE	>50%																			
Net Debt	0.5x																			
R&D Expenditure (% Revenue)	3.0%																			
Sustainability (0-100)	77.5																			
Environmental Impact: SDG 7/13/8	substantial																			
Social Impact: SDG 9	substantial																			
	 <p>Analog semiconductors and sensors</p>	<table border="0"> <tr> <td>Segment/Topic</td> <td>Transport/Consumption Reduction</td> </tr> <tr> <td>Portfolio Weight</td> <td>4.6%</td> </tr> <tr> <td>Share of Revenue from Energy Efficient Products</td> <td>33%</td> </tr> <tr> <td>ROCE</td> <td>43%</td> </tr> <tr> <td>Net Debt</td> <td>0x</td> </tr> <tr> <td>R&amp;D Expenditure (% Revenue)</td> <td>13.0%</td> </tr> <tr> <td>Sustainability (0-100)</td> <td>76</td> </tr> <tr> <td>Environmental Impact: SDG 7/13/8</td> <td>considerable</td> </tr> <tr> <td>Social Impact: SDG 9/11</td> <td>considerable</td> </tr> </table> <p>"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 control of cooling systems, which reduces power consumption by about 40%.</p>	Segment/Topic	Transport/Consumption Reduction	Portfolio Weight	4.6%	Share of Revenue from Energy Efficient Products	33%	ROCE	43%	Net Debt	0x	R&D Expenditure (% Revenue)	13.0%	Sustainability (0-100)	76	Environmental Impact: SDG 7/13/8	considerable	Social Impact: SDG 9/11	considerable
Segment/Topic	Transport/Consumption Reduction																			
Portfolio Weight	4.6%																			
Share of Revenue from Energy Efficient Products	33%																			
ROCE	43%																			
Net Debt	0x																			
R&D Expenditure (% Revenue)	13.0%																			
Sustainability (0-100)	76																			
Environmental Impact: SDG 7/13/8	considerable																			
Social Impact: SDG 9/11	considerable																			



Example 3: Page 6 of the Carnot Efficient Energy Fund - Impact Report

f) 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. It shows the sustainability rating (rating, maximum AAA), the ranking in the entire universe (ranking - 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 corresponds to our internal assessment.



Quelle: yourSRI.com

g) CO<sub>2</sub> - Foot Print



Carbon Report - Carnot Efficient Energy

Identifier: None | Report created on: Mar 28, 2019 | Benchmark: Equity - MSCI World Index  
 Currency: EUR | Industry Classification: ICB | Company Breakdown Metrics: relative carbon footprint (tCO<sub>2</sub>e / Mio. Invested) | Value: 44'900'000.00 EUR

Executive Summary

	Coverage		Carbon				
	Disclosing Titles	by Weight	Emissions Scope 1+2	Emissions incl. Scope 3	Relative Carbon Footprint	Carbon Intensity	Weighted Average Carbon Intensity
Portfolio	42.9%	95.4%	1'710.6	7'545.5	36.3	46.0	49.9
Benchmark	89.4%	99.4%	9'877.5	38'142.0	218.6	226.5	162.0

market value      tCO<sub>2</sub>e      tCO<sub>2</sub>e      tCO<sub>2</sub>e / EUR Mio. Invested      tCO<sub>2</sub>e / EUR Mio. Invested      tCO<sub>2</sub>e / EUR Mio. Invested

The shown Carbon Report was created by yourSRI and uses data from ISS Ethix. The carbon footprint of the Carnot Efficient Energy Fund is much smaller than that of the overall market,

Example 3: Page 7 of the Carnot Efficient Energy Fund - Impact Report

broken down to a fund investment of EUR 1m or EUR 1m in portfolio companies' revenue. This analysis covers the company's CO2 emissions in the generation of the power (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).

What this analysis does not consider are the CO2 reduction effects that the products, services and projects of the companies cause. These effects are, in our opinion, particularly important under the impact aspect, which is why we make our own assessment (see 5. Impact Validation).

#### h) 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.



## 10. Appendix 2: Impact Report Carnot Efficient Resources Fund

Example 4: Page 1 of the Carnot Efficient Resources Fund - Impact Report

Carnot Efficient Resources
Impact Report Q1 2019

The Carnot Efficient Resources Fund is an Impact investment fund that invests in listed equities. The companies represented in the fund develop and produce products and technologies that reduce the consumption of natural resources and reach people around the world. In addition to the financial return, the fund investor, as co-owner of the portfolio companies, has 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. It is detailed in the research paper titled "Investing into Energy and Resource Efficiency with a Measurable Impact", which can be found [here](#) and on Carnot Capital's website.

**0. Impact of the Carnot Efficient Resources Fund**

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

1. Topic of Resource Efficiency
2. Controversial Activities (ESG Top-Down Analysis)
3. Financial Analysis
4. Sustainability (ESG Bottom-Up Analysis)
5. Impact Validation

**1. Topic of Resource Efficiency**

The Carnot Efficient Resources Fund invests exclusively in companies with products, services and development projects that reduce the consumption of natural resources. The reduction of resource consumption must be part of the company strategy. Such companies can be assigned to the basic elements fire, water, earth and air based on the ancient four-element theory. The following overview shows which topics the Carnot Efficient Resources Fund currently covers.

**Fields of Activity of the Portfolio Companies, as per 30.4.2019**

Energy	Earth	Water	Air
41.3%	29.9%	19.3%	9.4%
<p>Topics currently covered:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Climate Control</li> <li><input checked="" type="checkbox"/> Smart Buildings</li> <li><input checked="" type="checkbox"/> Windows, Doors</li> <li><input checked="" type="checkbox"/> Engineering</li> <li><input checked="" type="checkbox"/> Internet of Things</li> <li><input checked="" type="checkbox"/> Economical Engines</li> <li><input checked="" type="checkbox"/> Rail Transport</li> <li><input checked="" type="checkbox"/> Wind Energy</li> <li><input type="checkbox"/> Solar Energy</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Agricultural Tech.</li> <li><input checked="" type="checkbox"/> Plant Protection</li> <li><input checked="" type="checkbox"/> Nutrients</li> <li><input checked="" type="checkbox"/> Feed</li> <li><input checked="" type="checkbox"/> Packaging</li> <li><input checked="" type="checkbox"/> Recycling</li> <li><input checked="" type="checkbox"/> Fishing Industries</li> <li><input checked="" type="checkbox"/> Forestry</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Water Infra.</li> <li><input checked="" type="checkbox"/> Water Purification</li> <li><input checked="" type="checkbox"/> Waste Water Treatment</li> <li><input checked="" type="checkbox"/> Sanitary Products</li> <li><input checked="" type="checkbox"/> Irrigation</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Emission Control</li> <li><input checked="" type="checkbox"/> E-Mobility</li> <li><input checked="" type="checkbox"/> Clean Fuels</li> <li><input checked="" type="checkbox"/> Battery Tech.</li> </ul>



#### Example 4: Page 2 of the Carnot Efficient Resources Fund - Impact Report

### 2. Controversial Activities

Potential portfolio companies are examined for controversial activities by our partner Bank Vontobel. Companies with such activities are excluded due to their negative impact (negative screening). For certain activities, a (low) turnover tolerance threshold is applied.

#### Controversial Activities, as per 30.4.2019

	Tolerance Threshold	Portfolio Share
Sex Trade	-	0%
Gambling	-	0%
Genetic Engineering	5%	0%
Addictive Substances (Tobacco, Alcohol)	-	0%
Land Mines, Cluster Munitions	-	0%
Weapons (Systems, Components)	5%	0%
Nuclear Energy (Power Plants, Technology)	5%	0%
Extraction of Fossil Fuels	-	0%

### 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.

#### Relevant Financial Figures, as per 30.4.2019

Average Debt-Equity Ratio (Net Debt/EBITDA)	0.5x
Average Return on Capital Employed (ROCE)	37%

### 4. Sustainability Analysis

The Carnot Efficient Resources fund invests exclusively in sustainable companies. The analysis is made by Bank Vontobel. Portfolio candidates for which no sustainability assessment is available are audited specifically for us by Bank Vontobel. This procedure significantly expands the investment universe. The analysis includes a catalogue of environmental, social and governance issues. The classification includes the sustainability contribution of the industry as well as the sustainability contribution of the individual company.

#### Sustainability (Bottom-Up), as per 30.4.2019

Share of Sustainable Companies in the Portfolio Analysis by Bank Vontobel	100%
--	------



Example 4: Page 3 of the Carnot Efficient Resources Fund - Impact Report

5. Impact Validation

a) Addressed Sustainable Development Goals (SDGs)

The portfolio companies make it possible to reduce resource consumption and thus have a decisive impact on the UN's Sustainable Development Goals (SDG – United Nations Sustainable Development Goals).

Addressed Goals (SDGs) ranked by impact of the fund*		Example Product
	<b>Industry, Innovation, Infrastructure</b> 9.4 Modernising Infrastructure, environmentally friendly industrial processes	Smart Buildings Heat Exchangers City Planning Wastewater Treatment
	<b>Affordable and Clean Energy</b> 7.2 Increase the share of renewable energy 7.3 Increase energy efficiency	Waterpower Heat Pumps Water Management Internet of Things
	<b>Climate Action</b> 13.2 Integrate climate change measures into national policies, strategies and planning	Heat Pumps Energy from Waste Intelligent Climate Control
	<b>Responsible Consumption and Production</b> 12.2 Sustainable management and efficient use of natural resources 12.3 Reduce food losses and waste 12.5 Reduce waste generation through prevention, reduction, recycling and reuse	Organic Food Packaging Agricultural Tech. Recycling
	<b>Good Health &amp; Well-Being</b> 3.9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Drinking Water Treatment Nutrients Sludge Drying
	<b>Sustainable Cities and Communities</b> 11.2 Modern public transport systems 11.8 Reduce environmental impact of cities, improve air quality, efficient waste management	Rail Transport E-Mobility Waste Management
	<b>Zero Hunger</b> 2.1 Ensure access to safe, nutritious and enough food 2.4 Ensure sustainable and efficient food production	Fertilizer Food Preservation
	<b>Clean Water and Sanitation</b> 6.1 Access to safe and affordable drinking water for all 6.3 Substantially increasing recycling and safe reuse of water 6.4 Reduce water shortages through by increasing water-use efficiency	Water Pipes Irrigation Tech.
	<b>Decent Work and Economic Growth</b> 8.4 Decouple economic growth from environmental degradation	Energy Efficient Industrial Technology
	<b>Life Below Water</b> 14.7 Sustainable management of fisheries, aquaculture and tourism	Fishing Industry

\* The size of the symbols corresponds to the extent of the impact according to the heatmap



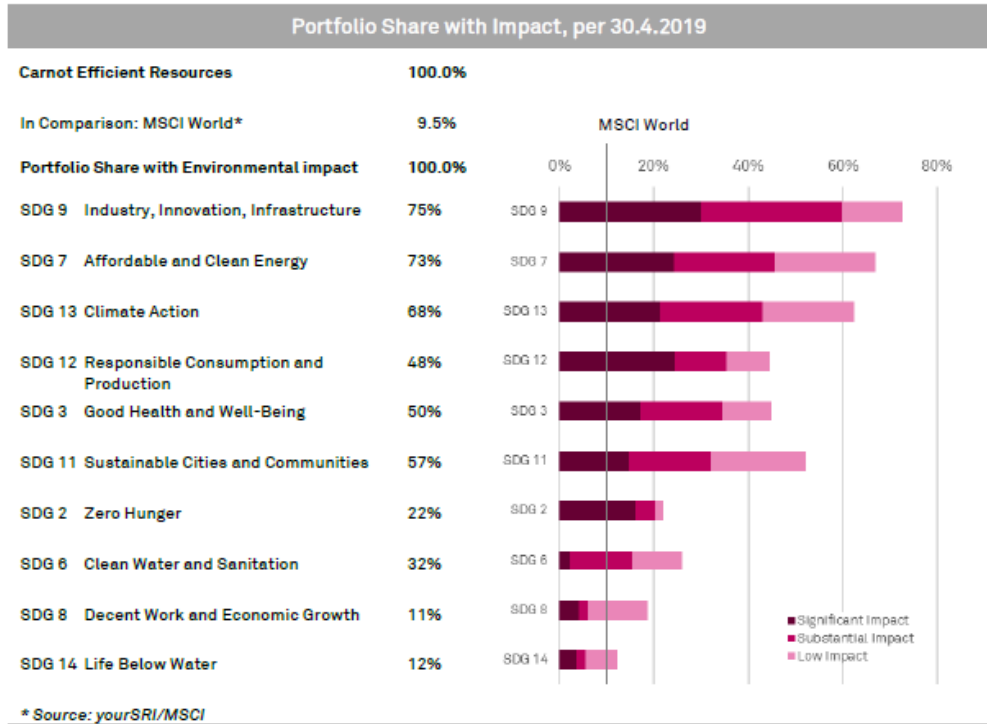




Example 4: Page 5 of the Carnot Efficient Resources Fund - Impact Report

**b) Portfolio Share of Impact Companies**

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





#### Example 4: Page 6 of the Carnot Efficient Resources Fund - Impact Report

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

In our impact analysis, we determine which part of 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. A fund investment of EUR 1 million accounts for approximately EUR 0.6 million of revenues with a positive environmental impact. Part of this revenue has a social impact at the same time, as outlined above (SDG 3 Health and Well-Being, SDG 2 Zero Hunger, etc.); however, we do not derive the exact sales figure with social impact.

##### Revenues for Impact Products per EUR 1 Million Investment Volume, as per 30.4.2019

<b>Impact Revenue per EUR 1 Million Investment Amount</b>	<b>EUR 612'000</b>
Revenue of the portfolio companies with impact products, which amounts to an investment of EUR 1 million	62% of Revenue
<b>Turnover with Environmental Impact per EUR 1 Million Investment Amount</b>	<b>approx. EUR 612'000</b>

##### d) Research, Development of Impact-Products

A significant positive impact results from the research and development activities of the portfolio companies because they result in new resource-saving products. Measured in terms of sales, R & D expenditure accounts for around 3%. For a fund investment of EUR 1 million, tens of thousands of euros of research and development expenditure are thus spent on improving resource efficiency.

##### R & D Expenditure per EUR 1 Mio. Investment Amount, as per 30.4.2019

<b>Research &amp; Development Expenditures per EUR 1 Mio. Investment Amount</b>	<b>approx. EUR 27'000</b>
	2.7% of Revenue



### Example 4: Page 7 of the Carnot Efficient Resources Fund - Impact Report

#### e) Examples

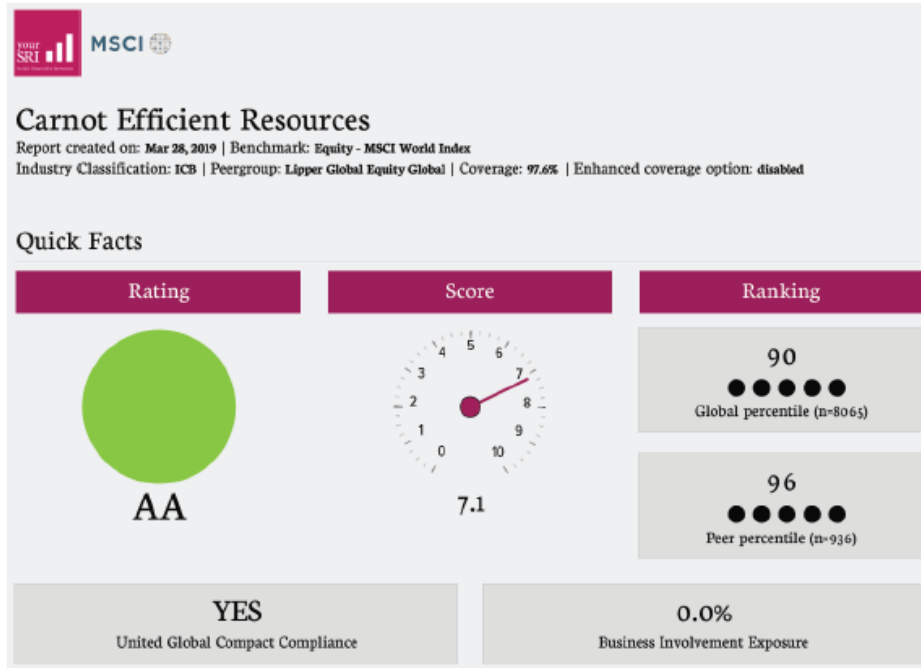
Company	Products w/ Impact	Details																		
	 LED- Lamps & Lights	<table border="0"> <tr> <td>Segment/Topic</td> <td>Industry/Lighting</td> </tr> <tr> <td>Portfolio Weight</td> <td>2.3%</td> </tr> <tr> <td>Share of Revenue from Resource Eff. Products</td> <td>65%</td> </tr> <tr> <td>ROCE</td> <td>34%</td> </tr> <tr> <td>Net Debt</td> <td>0.4x</td> </tr> <tr> <td>R&amp;D Expenditure (% Revenue)</td> <td>4.8%</td> </tr> <tr> <td>Sustainable?</td> <td>yes</td> </tr> <tr> <td>Environmental Impact*: SDG 7/13</td> <td>significant</td> </tr> <tr> <td>Social Impact*: SDG 9</td> <td>substantial</td> </tr> </table> <p>LED bulbs save about 50% energy compared to fluorescent tubes, even 80% compared to halogen bulbs. Signify is one of the world's largest LED lighting manufacturers and is pushing ahead with intelligent lighting controls, which significantly reduce consumption.</p> <p><i>* Scale: significant, substantial, considerable, low impact</i></p>	Segment/Topic	Industry/Lighting	Portfolio Weight	2.3%	Share of Revenue from Resource Eff. Products	65%	ROCE	34%	Net Debt	0.4x	R&D Expenditure (% Revenue)	4.8%	Sustainable?	yes	Environmental Impact*: SDG 7/13	significant	Social Impact*: SDG 9	substantial
Segment/Topic	Industry/Lighting																			
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Social Impact*: SDG 9	substantial																			
	 Salmon farming and processing	<table border="0"> <tr> <td>Segment:</td> <td>Earth/Fishing Industry</td> </tr> <tr> <td>Portfolio Weight</td> <td>2.3%</td> </tr> <tr> <td>Share of Revenue from Resource Eff. Products</td> <td>100%</td> </tr> <tr> <td>ROCE</td> <td>21%</td> </tr> <tr> <td>Net Debt</td> <td>1.2x</td> </tr> <tr> <td>R&amp;D Expenditure (% Revenue)</td> <td>1.1%</td> </tr> <tr> <td>Sustainable?</td> <td>yes</td> </tr> <tr> <td>Environmental Impact: SDG 14</td> <td>Significant</td> </tr> <tr> <td>Social Impact: SDG 2</td> <td>Significant</td> </tr> </table> <p>The fishing industry is the most resource efficient way to produce animal protein. For each 100kg only about 160kg of food is needed, for chicken it is 330kg, for beef even 2500kg. MOWI (formerly Marine Harvest) is the world's largest producer of salmon and the largest producer of organic salmon.</p>	Segment:	Earth/Fishing Industry	Portfolio Weight	2.3%	Share of Revenue from Resource Eff. Products	100%	ROCE	21%	Net Debt	1.2x	R&D Expenditure (% Revenue)	1.1%	Sustainable?	yes	Environmental Impact: SDG 14	Significant	Social Impact: SDG 2	Significant
Segment:	Earth/Fishing Industry																			
Portfolio Weight	2.3%																			
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Net Debt	1.2x																			
R&D Expenditure (% Revenue)	1.1%																			
Sustainable?	yes																			
Environmental Impact: SDG 14	Significant																			
Social Impact: SDG 2	Significant																			
	 Flue gas scrubber Ship Design Ship Operating Optimization (Bio-) Gas Engines	<table border="0"> <tr> <td>Segment</td> <td>Air/Exhaust Gas Treatment</td> </tr> <tr> <td>Portfolio Weight</td> <td>2.3%</td> </tr> <tr> <td>Share of Revenue from Resource Eff. Products</td> <td>60%</td> </tr> <tr> <td>ROCE</td> <td>42%</td> </tr> <tr> <td>Net Debt</td> <td>0.5x</td> </tr> <tr> <td>R&amp;D Expenditure (% Revenue)</td> <td>3.3%</td> </tr> <tr> <td>Sustainable?</td> <td>yes</td> </tr> <tr> <td>Environmental Impact: SDG 7/13</td> <td>Significant</td> </tr> <tr> <td>Social Impact: SDG 9</td> <td>Significant</td> </tr> </table> <p>Flue gas scrubbers eliminate harmful nitrogen oxide emissions from ships and power plants. Wärtsilä is one of the world market leaders for such systems, especially for ships. Wärtsilä is also a leader in ship design and automation when it comes to optimizing fuel consumption. In addition, the group offers efficient power generators with gas engines suitable for complementing wind and solar power.</p>	Segment	Air/Exhaust Gas Treatment	Portfolio Weight	2.3%	Share of Revenue from Resource Eff. Products	60%	ROCE	42%	Net Debt	0.5x	R&D Expenditure (% Revenue)	3.3%	Sustainable?	yes	Environmental Impact: SDG 7/13	Significant	Social Impact: SDG 9	Significant
Segment	Air/Exhaust Gas Treatment																			
Portfolio Weight	2.3%																			
Share of Revenue from Resource Eff. Products	60%																			
ROCE	42%																			
Net Debt	0.5x																			
R&D Expenditure (% Revenue)	3.3%																			
Sustainable?	yes																			
Environmental Impact: SDG 7/13	Significant																			
Social Impact: SDG 9	Significant																			



Example 4: Page 8 of the Carnot Efficient Resources Fund - Impact Report

f) External Sustainability Assessment

We have the Carnot Efficient Resources 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. It shows the sustainability rating (rating, maximum AAA), the ranking in the entire universe (ranking - 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 corresponds to our internal assessment.



g) CO<sub>2</sub> - Foot Print



Executive Summary

	Coverage		Carbon				
	Disclosing Titles	by Weight	Emissions Scope 1+2	Emissions incl. Scope 3	Relative Carbon Footprint	Carbon Intensity	Weighted Average Carbon Intensity
Portfolio	78.6%	97.6%	1'398.7	4'106.1	136.6	112.2	146.4
Benchmark	89.4%	99.4%	2'199.9	8'494.9	218.6	226.5	162.0
		relative value	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e / EUR Mio Invested	tCO <sub>2</sub> e / EUR Mio revenue	tCO <sub>2</sub> e / EUR Mio revenue

The shown Carbon Report was created by yourSRI and uses data from ISS Ethix. The carbon footprint of the Carnot Efficient Resources Fund is much smaller than that of the overall market, broken down to a fund investment of EUR 1m or EUR 1m in portfolio companies' revenue. This

Example 4: Page 9 of the Carnot Efficient Resources Fund - Impact Report

analysis covers the company's CO2 emissions in the generation of the power (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).

What this analysis does not consider are the CO2 reduction effects that the products, services and projects of the companies cause. These effects are, in our opinion, particularly important under the impact aspect, which is why we make our own assessment (see 5. Impact Validation).

#### h) 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.



## 11. Appendix 3: Carnot Impact-Analysis (Part 1, Impact)

IO		Impact Analysis (Questionnaire Part 1)		CARNOT CAPITAL	
		[Redacted] (Company Name)			
Impact Reporting					
Choice		Criteria	Choice	Ranking Description	
1		Reduction of environmental (E) and social (S & G) risk			
<b>Strategy / Intention / Mission</b>					
1,1		Is the reduction of energy and resource consumption part of the corporate strategy? Wording?			
<b>Implementation in Products (P) / Services (S) / Projects (Pr)</b>					
1,2		Which P / S / Pr reduce energy and resource consumption? In which way? (Activities)			
1,3		Does this technology (P / S / Pr) bring concrete economic benefits (payback)?			
1,4		Does this P / S / Pr account for at least 20% of the enterprise value?			
1,5		Energy efficiency: Does the company belong to the target sectors building technology, industrials or transport?			
2		Generating financial returns			
<b>See Income Statement (Research) as per</b>					
<b>Quality</b>					
2,1		Indebtedness			
2,2		ROCE > x%			
<b>Valuation</b>					
2,3		Low EV/EBIT			
2,4		Cheap P/E			
2,5		Attractive dividend yield			
3		Environmental & social opportunities: ESG screening min. compliance			
3,1		Sustainability analysis see questionnaire part 2			
4		Positive effects: performance (output) & impact measurement (outcome / impact)			
<b>Output (Performance)</b>					
4,1		What is the turnover of dedicated P / S / Pr?			
4,2		How high are the R & D expenditures?			
4,3		What is the number of people who are reached / cared for?			
4,4		Are there any quantitative sources of information such as a business report, a social / environmental report, environmental balance sheet?			
<b>Outcome (Impact)</b>					
4,5		What is the economic benefit (ROI) of the P / S / Pr?			
4,6		How much resources do the sold P / S / Pr save compared to conventional P / S / Pr? (Efficiency?)			
4,7		Is the ESG risk reduced in other ways?			
4,8		Are there follow-up investments or other applications of P / S / Pr?			
<b>Impact (Influence)</b>					
4,9		What recurring (sustainable) benefits do the P / S / Pr create? (Impact)			
4,10		Which SDGs are affected positively? (Impact)			
4,11		Scope: what targets does the P / S / Pr achieve? (Impact)			
4,12		What additional benefits do the P / D / Pre bring about? (Impact)			
4,13		Are there any important impact aspects that have not been considered in this analysis?			
4,14		Analysis/Update by/on		(Name, Date)	
<b>Classification as Impact Investment</b>					
		Signed Impact-Officer (IO), Date			



## 12. Appendix 4: Carnot Impact-Analysis (Part 2, ESG)

<b>Sustainability Analysis (Questionnaire Part 2)</b>		<b>CARNOT CAPITAL</b>
10	[Redacted]	(Company Name)
Choice	<b>Criteria</b>	<b>Ranking</b>
		Choice
	<b>General</b>	
	Does Bank Vontobel regard the stock as sustainable?	
	Exclusion criteria: Does the company receive income from weapons, nuclear technology, addictive substances, genetic engineering?	
	Does the company produce a sustainability report?	
	Is sustainability part of the strategy? Is the company committed to the principles of sustainability?	
	Is the company active in an industry with increased ESG risks or is it engaged in controversial activities?	
	<b>Environment (Products, Production, Supply Chain):</b>	
	Do the company's services contribute to an environmentally friendly economy?	
	How is the company to be assessed in terms of energy consumption, water consumption and waste? Are there goals? Energy / Water / Waste / Environment?	
	Are there increased environmental risks in the supply chain, especially in the extraction of raw materials?	
	<b>Social (Suppliers, Employees, Society, Customers)</b>	
	Does the company include preliminary services from problematic industries?	
	Is the company struggling to respect workers' rights in emerging markets?	
	What about occupational safety (accidents)?	
	Are there known negative incidents? Other problematic aspects?	
	<b>Corporate Governance (Management, Strategy)</b>	
	Does the risk management process include sustainability aspects?	
	Free from potential conflicts of interest in corporate management / shareholders?	
	Quality of the remuneration system?	
	Are the voting rights of shareholders or other rights restricted?	
	Are there cases of misleading communication? Are the voting rights of shareholders or other rights restricted?	
	Is the company strongly active in corruption prone countries?	
	Are there known incidents that testify to poor corporate governance?	
	Are there any important aspects of ESG that were not considered in this analysis?	
	[Redacted]	
	<b>Total Points (Maximum 52; Minimum 26)</b>	<b>0</b>
	Analysis/Update by/on	(Name, Date)
		.....
	<b>Qualification as a Sustainable Investment</b>	
	Signed Impact-Officer (IO), Date	.....



### 13. Appendix 5: Carnot Impact-Analysis (Part 3, Engagement)

IO	0	CARNOT CAPITAL (Company Name)
	<b>Definition</b>	
	<p>A long-term dialogue between investors and companies with the aim of attracting management to the consideration of social, ethical and environmental criteria. This includes voting at general meetings, shareholder motions and questions at general meetings, joint initiatives, direct contact with companies and decision-makers, discussions with other organizations and decision-makers from business and politics.</p>	
	<b>Open Questions / Answered</b>	<b>Date</b>
	Corporate Governance (Conflicts of Interest, Shareholder Rights, Remuneration System, Corruption)	
	<b>Open Question:</b>	
	<b>Answer:</b>	
	<b>Open Question:</b>	
	<b>Answer:</b>	
	Social (suppliers, employees, society, customers)	
	<b>Open Question:</b>	
	<b>Answer:</b>	
	Environment (Products, Production, Supply Chain)	
	<b>Open Question:</b>	
	<b>Answer:</b>	
	General:	
	<b>Open Question:</b>	
	<b>Answer:</b>	
	<p>Are there any important engagement issues that were not considered in this analysis?</p>	
	Analysis/Update by/on	(Name, Date)
	<b>Engagement fulfilled?</b>	
	Signed Impact-Officer (IO), Date	





## 14. Glossary (Forum for Sustainable Investments (FNG, shortened, expanded))

### AuM

"Assets under Management"

### Active Ownership

Includes activities that shareholders take while owning shares (as opposed to buying and selling). This includes engagement and the use of shareholder rights, such as the exercise of voting rights.

### Asset Overlays

Product independent application of sustainable investment strategies to all or part of an asset manager's assets. Asset overlays are captured for exclusion, engagement, integration and voting strategies.

### Best-in-Class

Approach where the leading companies regarding ESG criteria from each individual sector or industry group are identified and included in the portfolio. (Subset of positive screening).

### Brundtland-Report

The Brundtland Report is a report entitled "Our Common Future" published in 1987 by the United Nations Environment and Development Commission ("Brundtland Commission"). The Commission was chaired by former Norwegian Prime Minister Gro Harlem Brundtland. The report is known for its definition of sustainable development.

### Club of Rome

The Club of Rome is an association of experts in various disciplines from more than 30 countries, founded in 1968. The non-profit organization is committed to a sustainable future for mankind. With the report "The Limits of Growth" published in 1972, it achieved great worldwide recognition. Since then, the Club of Rome has fought for sustainable development and the protection of ecosystems.[1] Since 2008, the organization has been based in Winterthur, Switzerland.

### Carbon Bubble

The carbon bubble is an investment bubble resulting from the incompatibility of the two-degree target with the mining and use of large parts of the currently known reserves of fossil fuels such as crude oil, coal and natural gas. The assumption is that much of the corresponding investment is overvalued as the risk of un-usability is not considered.

### Carbon Footprint

The carbon footprint of an investment is the amount of greenhouse gas emissions caused by a product, company or portfolio.

### COP

The UN Conference of the Parties (COP) is an annual meeting of states and other actors to find a common solution to man-made global climate change and the associated global warming. Since the 2015 Climate Change Conference was the 21st climate negotiation, it is called COP21.

### Corporate Governance

Governance issues relate to the quality of company management, corporate culture, risk profiles and other specifics. This also includes the responsibility of board members and their commitment to the strategic management of social and environmental performance. In addition, it deals with principles such as transparent reporting and the implementation of management tasks in a manner that is free of abuse and corruption. These include corporate governance issues (executive compensation, shareholder rights, composition of the board of directors), bribery, corruption, dialogue with interest groups, lobbying activities, etc.

### Decarbonisation

Decarbonisation is the transformation of the economy towards lower carbon dioxide emissions (**Carbon Disclosure Project (CDP)**).

### Divestments

Companies that are sold from the fund portfolio.

### Double Bottom Line

(double return: financial return and impact) Impact investing is not a matter of pure philanthropy where the impact is prioritized at the expense of the return. On the contrary, a social-ecological self-image can be combined with a profit-oriented investment policy without contradiction. Sustainable investment is an instrument of risk management and is used specifically to increase performance. In the meantime, it can be statistically proven that sustainable investment does not mean having to forego returns.<sup>46</sup>

<sup>46</sup> See Carnot Efficient Energy Fund



### Engagement

A long-term process of dialogue with companies by investors which seeks to positively influence company behaviour in relation to their social, ethical, governance and environmental practices. This includes vote at AGM, filing or co-filing shareholder proposals, asking questions at AGM, collaborative engagement initiatives, individual company contact and dialogue with policy makers and industry organisations.

### Environment

Environmental issues affect all aspects of corporate activities that have a positive or negative impact on the environment. Examples include biodiversity, greenhouse gas emissions, climate change, renewable energy, energy efficiency, resource depletion, chemical pollution, waste management, water management, ocean acidification, ozone depletion, land use, etc.

### ESG

Environment, Social and Governance.

### Exclusion

The exclusion of sectors or companies from a fund if involved in certain activities based on specific ESG criteria.

### Fund(s)

A legal entity, the purpose of which is solely the acquisition of portfolio investments. This also includes compartments and sub-funds.

### Fund manager

The entity responsible for overall management of the fund.

### Fund Purpose

The spirit and overall focus of the fund, but not the investment criteria employed.

### Global Investor Statement on Climate Change

The Global Investor Statement on Climate Change is an appeal by investors published in the run-up to the United Nations Climate Change Conference in 2014 with a view to the Paris climate negotiations. With this statement, more than 404 investors, representing more than 24 trillion US dollars in assets, acknowledge their responsibility for coping with climate change and advocate, among other things, the introduction of a stable and economically effective CO2 price.

### High Net Worth Individuals (HNWI)

Individual with more than \$1 million in liquid financial assets.

### Holdings

Equities and/or bonds of companies that collectively comprise the fund portfolio.

### Impact Investment

Impact Investments are investments in companies, organisations and funds with the aim of achieving social and ecological benefits in addition to financial returns. Impact investments can be made in markets of industrialised and developing countries and, depending on the circumstances, achieve both below average and market returns. Impact investments are often project-specific and differ from the philanthropy approach in that investors retain ownership of the assets and expect positive financial returns. Impact investment includes microfinance, community investing, social business/entrepreneurship funds and French funds solidaires.

### Integration

The explicit inclusion by asset managers of ESG-risk into traditional financial analysis. Corporate Governance risk should be limited here to the interface between Governance and Social and Environmental issues.

### Investment Criteria

The principle or basis of judgement on which the fund may and may not invest from an environmental, social or ethical point of view.

### Limits to Growth

The study was commissioned by the Club of Rome, published in 1972 and financed by the Volkswagen Foundation with one million DM at the time. Donella and Dennis Meadows and their colleagues at the "Jay Wright Forrester's Institute for System Dynamics" carried out a system analysis and computer simulations of various scenarios. The main conclusions of the report were as follows: "If the current increase in world population, industrialization, pollution, food production and the exploitation of natural resources continues unchanged, the absolute limits of growth will be reached over the next hundred years."

### Mapping SDGs

Thematic funds are compared with the UN sustainability goals (SDGs) through their intention to achieve the promotion of sustainable behaviour. Consistent goals are identified and assigned to the individual themes. This link allows the qualitative and quantitative determination of the impact of a fund on the SDGs. In technical terms, this is referred to as **mapping of SDGs in the investment process** for selecting sustainable securities.

### Microfinance Investment Intermediaries (MII)

Microfinance Investment Intermediaries (MIIs) are investment entities where microfinance is one of the core investment objectives. They refer to a wide range of actors: microfinance investment vehicles (MIVs, intermediaries of public and private funds),



holding companies as well as other types of microfinance intermediaries. MIIIs provide (directly or indirectly) debt, bonds or guarantees microfinance service providers or other MIIIs. MIIIs are not charities. They have different expectations, but they all aim to get their capital back at a profit.

### **Microfinancing**

Microfinance is the provision of various financial services (loans, savings, insurance, payments and other financial services) to poor and low-income customers. The current predominant service is microcredit.

### **Montréal Carbon Pledge**

The Montréal Carbon Pledge is an initiative founded in September 2014 by PRI and UNEP FI - the financial initiatives of the United Nations Environment Programme - in Montréal, Canada, a few days after the United Nations Climate Change Conference. The aim of the initiative is to create greater transparency in the CO2 footprint of equity portfolios and to reduce this footprint in the long term.

### **Negative Investment Criteria**

An investment strategy that excludes industries, companies or states that do not meet certain social, ecological and ethical criteria (e.g. armaments, pornography, tobacco, animal experiments, human rights violations, etc.).

### **Norm-based exclusions**

Negative screening of companies according to their compliance with international standards and norms such as issued by OECD, ILO, UN, UNICEF, etc.

### **Portfolio**

A collection of investments managed by the fund manager.

### **Portfolio Decarbonization Coalition (PDC)**

The Portfolio Decarbonization Coalition (PDC) was founded jointly by Amundi, AP 4, CDP and UNEP FI - the financial initiative of the United Nations Environment Programme. Its aim is to encourage institutional investors to measure and determine their CO2 footprint and to gradually decarbonise their portfolios, thereby driving forward the reduction of greenhouse gas emissions from the private sector.

### **Positive Investment Criteria**

The selection, within a given investment universe, of stocks of companies that perform best against a defined set of ESG criteria. This may include Best-in-Class or SRI theme funds for instance.

### **Principles for Responsible Investing (PRI)**

UN-developed principles for responsible investing. Its signatories commit themselves to observing defined ESG criteria.

### **Simple Screening**

An approach that excludes given sectors or companies from a fund if involved in certain activities based on specific criteria, such as arms manufacture, publication of pornography, tobacco, animal testing, etc.

### **Smart Risk Investing Initiative**

The Smart Risk Investing Initiative was launched in 2014 during the United Nations Climate Change Conference. The aim of the initiative was to develop a Climate Risk Investment Framework by the time of the Paris climate negotiations in 2015 and to persuade the insurance industry to double so-called Climate Smart Investments from 42 billion to 84 billion US dollars. At the time of COP21, the initiative had far exceeded this target with a total of 109 billion US dollars. By 2020, the volume is expected to rise to 420 billion US dollars.

### **Social**

Social issues have a broad focus. They range from tasks related to community needs, such as improving health care and the education system, to issues related to the workplace, including respect for human rights and issues such as equal treatment and stakeholder engagement. Examples include labour standards (in the supply chain, child labour, slavery), relationships with local communities, human capital management, controversial business practices (weapons, conflict zones), health standards, freedom of association and assembly, etc.

### **Socially Responsible Investment (SRI)**

A generic term covering sustainable, responsible, ethical, environmental, social investments and any other investment process that integrates financial analysis with the influence of environmental, social and governance (ESG) issues. It includes an explicit written policy to make use of ESG criteria.

### **SRI Themed Funds**

Thematic funds may focus on sectors such as water or energy, or issues such as the transition to sustainable development and a low carbon economy. To be considered SRI, a theme fund must show an explicit SRI motivation, considering ESG considerations in the fund construction process. This requires the existence of specific mechanisms, such as the involvement of SRI expertise in stock analysis selection, the application of an ESG screen, or the management of the product by the SRI team. (Subset of positive screening).

**Stranded Assets**

Stranded assets are assets that are subject to unexpected or premature devaluations or write-downs. Against the background of the phenomenon of the carbon bubble, carbon-intensive investments are particularly exposed to the increased risk of becoming stranded assets.

**Sustainable Investments**

Sustainable investment is the general term for sustainable, responsible, ethical, social, ecological investment and all other investment processes that include the impact of ESG (environmental, social and governance) criteria in their financial analysis. It also includes an explicit written investment policy that includes the use of ESG criteria.

**Sustainable Thematic Funds**

Investments in themes or assets related to the promotion of sustainability. Thematic funds focus on specific or multiple ESG-related themes, such as climate change and eco-efficiency. Investments in sustainable themes contribute to overcoming social or environmental challenges such as climate change or eco-efficiency.

**Sustainability Advisory Council**

A committee that meets regularly and decides on the orientation of the sustainability and ethics policy or behaviour towards individual companies.

**Track Record**

A track record is an individual reference list of investment successes.

**Triple Bottom Line (TBL)**

Refers to the three pillars of sustainability - economic, environmental and social. According to the TBL concept, companies measure their performance in all three areas and report regularly.

**UNFCCC**

The United Nations Framework Convention on Climate Change (UNFCCC) is an international, multilateral climate protection agreement of the United Nations. The aim is to slow down global warming and mitigate its consequences. The UNFCCC was adopted at the United Nations Conference on Environment and Development in 1992 and entered into force two years later. In the meantime, 195 states have ratified the UNFCCC.

**Valuation-Based Exclusions**

This refers to exclusions where more than two negative criteria/filters are applied (as opposed to just tobacco or weapons for example).

**Voting Policy**

Policy of a fund to exercise its voting rights as investors to influence company behaviour.



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## 16. The Author

Dr. Andreas Walther is co-founder and partner of Carnot Capital and has been responsible for Risk Management & Compliance since 2007.

Previously, Andreas worked with the Valartis Group, an investment bank listed on the SIX Swiss Exchange and specialized in equities and derivatives. As CFO and member of the Executive Board for many years, he was responsible for the financial management of the Bank and Group. In addition, he held various board mandates in Switzerland. He began his professional career at Alusuisse-Lonza Holding AG, Zurich, in Corporate Controlling.

Andreas studied general economics at the University of St. Gallen, specializing in "Environmental Economics" and "Developing Countries". He wrote his diploma thesis on "the systematic consideration of environmental protection in strategic decisions" by Prof. F. Malik.

After completing his studies, he worked as a research fellow with Prof. A. Meier on the National Fund project on "Meaningfulness and Negotiation Processes in Economic Policy". During his doctoral studies at the University of St. Gallen he wrote his dissertation under Prof. H.C. Binswanger on "consequential costs of environmental damage in the context of national accounts" and graduated in the fall of 1990 with a doctorate in economics.



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*Carnot Capital is an investment management company, specialized in energy and resource efficiency. We founded the company in 2007 in Zurich and received 2013 the permission as an asset manager for collective investments by the Swiss Financial Markets Supervisory Authority FINMA.*

*We manage the equity funds Carnot Efficient Energy and Carnot Efficient Resources performing a sustainability examination ESG. We buy stocks of listed companies with products and technologies, that lower the consumption of natural resources. Due to rising scarcity and increasing environmental problems, those companies profit from structural growth. The stock picking is based on a value approach, where the quality of the company is central. We only invest in established, profitable companies with strong balance sheets.*

*Carnot Impact Investing is a blended approach, which differentiates itself through financial as well as social-ecological performance and by combining these two qualities and revealing the positive effects they have achieved (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 useable energy. To a certain extent, we relate maximizing the degree of efficiency to our investment activities as well: 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)*