

What would it cost for listed companies to contribute to solving the climate, land and water crises?

The case of the Swiss Market Index



Executive Summary

Introduction

Environmental damage caused by human activity represents a major risk for companies in the medium and long term. Although an increasing number of these companies are committing to achieve zero net greenhouse gas emissions (“Net Zero”) by 2050 and limit their environmental impact, the cost of such a transition is rarely evaluated.

Carried out by Ecometrics, Valuing Impact and Sofies and co-financed by Ethos, this study proposes an assessment of annual investments required to set up long-lasting and viable solutions for a more biodiversity-considerate transition to a low carbon economy. The assessment is proposed for the 14 industrial companies included in the Swiss Market Index (SMI)¹.

This study is innovative for several reasons; first, it emphasizes solutions that solve environmental crises rather than assessing the significance of the problem (as is often the case). Secondly, it proposes an original methodology in the field of natural capital that is based on internalized monetary costs (cost of solutions and avoided costs) by companies rather than on costs for society (negative externalities). Finally, it takes a fresh look at the importance of Switzerland’s environmental impact at the global level.

Investments are annualized to consider a wide range of solutions with different characteristics. Investments in renewable electricity, for example, will enable several decades of production while new natural carbon sinks will be added yearly to capture residual emissions. These annualized investments consider capital expenditures, operations, and maintenance costs. They are not an investment plan but represent the annual cost of the solutions from a medium-term perspective.

Results

The environmental impacts generated by the 14 industrial companies of the SMI are considerable when assessed from a Swiss perspective. The 305 million tonnes of greenhouse gases (GHG) (measured in CO₂-equivalent) generated by these companies in 2020 correspond to approximately 6.5 times the territorial emissions of Switzerland² and 2.5 times the total emissions induced released due to the consumption of Swiss citizens³ at the global level. The water consumption of these companies reaches almost 12,000 million m³, or 3.5 times that of Switzerland, while the use of cropland amounts to 6.5 million ha (more than 1.6 times the size of Switzerland). Supplementary results are available at costofsolutions.ch

1. As of 30 June 2021. The six financial and insurance companies belonging to the SMI were not included in the analysis due to methodological complexity and the lack of data to assess the environmental impact of their investments and their loan portfolio rather than that of their business and supply chains.

2. Territorial emissions considered in the Paris Agreement.

3. Federal Statistical Office, 2018.

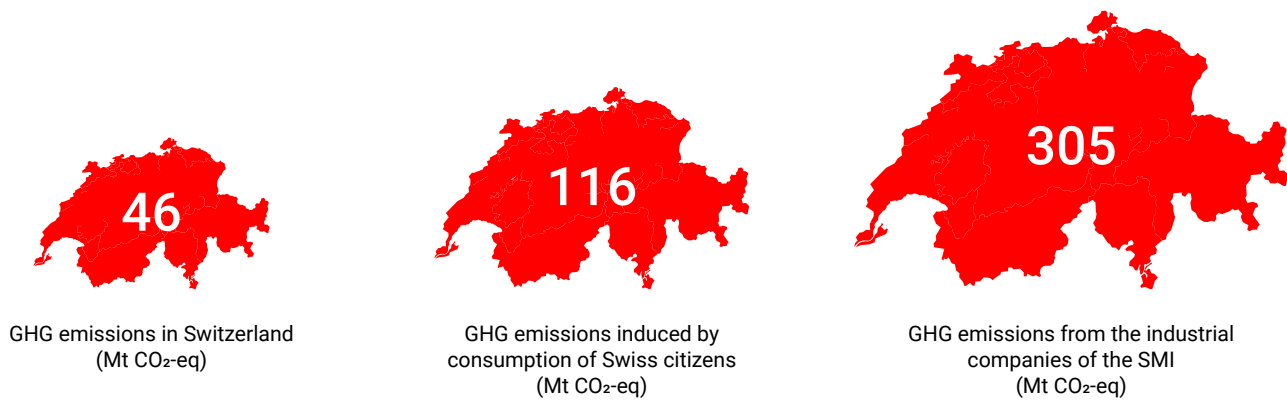


Figure 1 : GHG emissions in Switzerland, induced worldwide by consumption in Switzerland and induced worldwide by Swiss based companies.

To mitigate these impacts with existing solutions, the study estimates that the 14 non-financial companies of the SMI should invest CHF 21.5 billion per year, which would allow them to operate without endangering biodiversity and forests and to reduce their greenhouse gas emissions by 29% (on average). The solutions currently available do not allow emissions to be reduced by 100%. Investing in solutions to capture residual greenhouse gas emissions by natural means (for example by planting trees) or technological (by capturing and storing the greenhouse gases) is therefore the only possibility to achieve the "Net Zero" goal by 2050. The study estimates that additional investments of CHF 6.5 billion per year are needed for this purpose. **Therefore, in total, approximately CHF 28 billion should be invested annually by the 14 industrial companies of the SMI, which represents 60% of their profits recorded in 2020 and 4% of the annual GDP of Switzerland.**⁴

While this amount may seem significant, the investments will not be sunken. On the contrary, they should allow companies concerned to achieve savings ("avoided costs") of around CHF 34 billion per year, which is more than the investments made ("solutions costs"). In addition, more than two-thirds of investments are in their supply chains, so the cost should be shared with their suppliers.

These costs should also be put into perspective with the societal costs incurred annually by these 14 companies worldwide, which can be estimated at about CHF 44.1 billion.

The investments identified are mainly related to the implementation of sustainable transport solutions, heating without fossil fuels, and electricity from renewable sources. Solutions related to water scarcity issues (demand management and additional supply) account for around 7% of the costs of solutions.

4. Investments are annualized to consider a wide range of solutions with different characteristics. These annualized investments consider capital expenditures, operations, and maintenance costs.

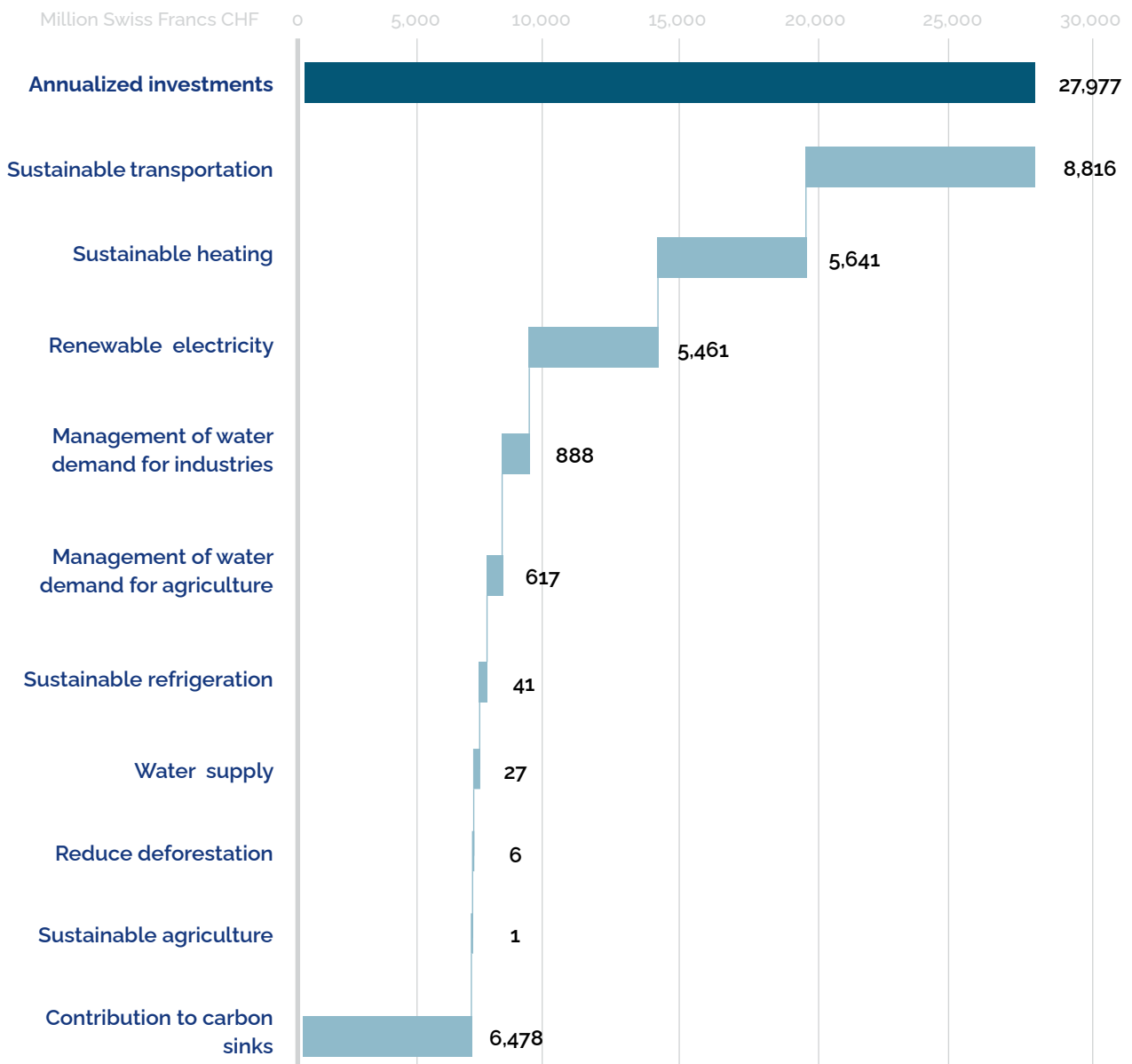


Figure 2 : Annualized investment costs per solution group and carbon sinks costs. (Million Swiss Francs CHF).

Methodology

The original methodology developed in this study and applied to the 14 largest industrial companies listed in Switzerland has three components; first, a selection of financial and environmental data published by companies (latest data for 2020) is completed by a global economic, energy and environmental model, making it possible to calculate the environmental impacts (climate change, use of soil and water consumption) by country and by emission source throughout their supply chain. This modeling is necessary because the published data is often incomplete or even non-existent. Second, the potential for reducing the environmental impact of more than 100 existing solutions, such as the use of renewable energies, sustainable agriculture, or electric mobility, as well as their associated costs (annualized, considering investment expenditure as well as operating and maintenance costs), are assessed by economic sector and by region. These solutions are then applied to each company, depending on their industry, the location of their direct activities and their supply chain.

Study Limitations

The choice of solutions and their combination are obviously subjective because it involves anticipating the future and any complex interactions from a technological, financial, and societal point of view. The results are therefore an approximation of the solutions that could be effectively deployed in the value chain of companies. In addition, since the costs of the solutions were not available for all countries, some extrapolations were made. Eventually, the modeled value chains reflect industry averages instead of company-specific value chains and were generated using publicly-available information only.

Beyond the obvious limitations associated with any modeling exercise, the main limitation of this study is the lack of relevant and reliable information published by companies on the environmental impact of their activities ("scope 1" and "scope 2" in carbon accounting terminology) or of their supply chain ("scope 3"). Transparent information on their activities (for example, on the segmentation of financial results by activity and by country) is also lacking, which requires the use of assumptions and a model. It should be noted that the type of model used here is similar to those used by companies to assess their environmental impacts; only company data is less precise.

Conclusion

Despite a lack of transparency on the part of companies, this study shows that it is possible to use available public data to assess the magnitude of the required costs for listed companies to sufficiently protect the climate, water, and land. It also shows that the responsibility of the industrial companies of the SMI in the global environmental emergency is considerable.

Eventually, if the first objective is clearly to keep a planet adapted to life, this study shows that these are not unbearable costs, especially if shared among businesses, the public sector, and other sectors, including the financial sector. In addition, the cost of solutions, such as installing solar panels or storage systems, are significantly lower than the societal costs of possible inaction. Another observation is that there is a financial sense in investing in solutions now to reduce these environmental impacts, since the cost avoided by the implementation of these solutions are higher than the cost of these solutions. The early adoption of these solutions can bring additional gains for companies and for Switzerland in terms of technology, commercial position, and image.

We hope this study will help raise awareness among companies seeking solutions to global climate, water and land crises, and focus on reallocating capital to create a sustainable future for our society. This would be a major shift in mindset as current practices focus primarily on assessing the problem rather than the solutions. To support this shift, the study makes a series of recommendations for companies and for investors.