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Supply chains black as coal

How do Finnish companies manage the greenhouse gas emissions of their suppliers located in risk countries?



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1. Introduction

The climate crisis is already causing severe, irreversible and faster than predicted changes in ecosystems on all continents.¹ While the Intergovernmental Panel on Climate Change (IPCC) has warned that carbon dioxide emissions must be halved globally by 2030 and decreased to zero by 2050², the use of coal and lignite and other fossil energy has continued to grow in important production countries in Asia.

The increase in the use of fossil energy in Asia is due to population growth, the construction of urbanisation-related infrastructure and the more western consumer habits of newly wealthy parts of Asia's population. Consumption habits in Europe and other western countries are also a significant factor as the resulting emissions have been outsourced to supply chains in developing countries³. The enormous cut to greenhouse gas emissions, which is needed in coming years, will require changes of such large scale that these cannot be made without great changes in both private and public consumption.

The mitigation of the climate crisis is a corporate responsibility issue. Companies that import products to the European market play an important role in how quickly climate sustainable solutions are implemented in production countries such as India and China. Measures to manage the emissions of supplier chains are urgently needed, as the infrastructure based on fossil energy that continues to be built in production countries will lock energy solutions for years to come.

Industrial production accounts for 30 per cent of all global greenhouse gas emissions. In addition to heavy industry (e.g. steel industry), the IPCC lists the chemicals and paper industry, food processing and the textiles industry as significant sources of greenhouse gas emissions.⁴ Depending on the product the emis-

sions of the various production facilities that are part of its value chain can be a significant factor in the product's overall carbon footprint⁵.

This report examines one factor that impacts the carbon dioxide emissions of a product over its lifetime, the emissions from the supply chain's first tier production facilities. First tier production facilities are the part of the production chain with which purchaser companies have a direct commercial relationship and purchasing companies will find it relatively easy and fast to influence commercial cooperation with them.

The report describes the significance of greenhouse gas emissions from imported products as well as the purchaser companies' capacity to manage their products' carbon footprint. The report examines in detail Amfori BEPI, an environmental performance system established and managed by Amfori, an interest group for European companies. Amfori BEPI's aim is to provide tools for purchaser companies that will facilitate the monitoring and management of the environmental impacts of their value chains in risk countries. Amfori's responsibility systems, especially Amfori BSCI, which focuses on corporate social responsibility are the responsibility tools most commonly used by Finnish companies in their value chains.

Utilising a survey sent to companies, the report examines the current practices used by companies that operate in Finland and which bring consumer goods to the Finnish market in monitoring and reporting on the carbon emissions of their value chains in risk countries. At the end of the report there are recommendations for companies and decision-makers on how to create more climate sustainable value chains.

The project received financial support from Finland's development cooperation funds.

1 IPCC, 2019, *The Oceans and the Cryosphere, Summary for Policy Makers*

2 IPCC, 2018, *Global Warming of 1.5°C, Summary for Policy Makers*

3 Emissions caused by OECD countries in other countries, see e.g. Cicero, *Global Environmental Footprints*, <https://cicero.oslo.no/no/posts/klima/global-environmental-footprints> (viewed on 8 September 2019)

4 Fishedick M., J. Roy, A. Abdel-Aziz, A. Acquaye, J.M. Allwood, J.-P. Ceron, Y. Geng, H. Khesghi, A. Lanza, D. Perczyk, L. Price, E. Santalla, C. Sheinbaum, and K. Tana-

ka, 2014: *Industry*. In: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, p 10–11, available at: https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter10.pdf

5 See for example Quantis, 2018, *Measuring fashion – Environmental impact of the global apparel and footwear industries study*

2. Consumption by Finns causes emissions outside of Finland's borders

Finland monitors the attainment of national emission targets yearly⁶. The Government Programme's aim is for Finland to be carbon neutral by 2035⁷. However, territorial measurements do not take into account the emissions caused by products and services imported to Finland, and thus ignore the geography of consumption and production⁸. When emissions are assessed on the basis of consumption⁹, the overall picture of Finland's carbon emissions is much gloomier. In a study by the Finnish Environment Institute, a state-run research and expert institute, it is estimated that in 2015 consumption-based domestic end-use greenhouse gas emissions in Finland equalled 73.4 million metric tonnes of carbon dioxide equivalent (Mt CO₂e). This so-called carbon footprint of Finland was 33 per cent larger than the emissions produced in Finland's territory as listed in official statistics.¹⁰

Finland is a rich consumption society, and we import a large amount of goods especially from Asia. Of countries in Asia, China is by far Finland's largest trade partner. In 2018, Finland's direct imports from China amounted to more than 4.6 billion euros in worth. Goods imported to Finland from China

include electronics, electrical engineering, industrial machinery and equipment, metal goods as well as textiles and clothing.¹¹ A variety of products amounting in value to 355 million euros were imported to Finland from India. When calculated in euros the largest imports from India to Finland were medicines, various types of machinery, clothing, textile products and footwear.¹²

The production of different products requires energy such as electricity, which both China and India produce largely from coal and lignite. In 2016, these two countries accounted for 40 per cent of all greenhouse gas emissions from the production of electricity in the world.¹³ The consumption habits of Finns and Europeans, which depend on Asian production chains are directly linked to the climate crisis' biggest problems. Companies have an important role and responsibility in bringing products that are climate consciously produced to the market.

Corporate social responsibility refers to the responsibility companies have for the social impacts of their operations¹⁴. The environmental responsibility and climate consciousness of production is a corporate social responsibility issue. International corporate social responsibility standards have taken the environmental impacts of company value chains into account for quite some time. The OECD Guidelines for Multinational Enterprises require companies to implement measures that will continuously improve the standard of environmental protection at both the company level and, where necessary, in its supply chain by promoting e.g. the reduction of greenhouse gases.¹⁵ The guidelines

6 Statistics Finland publishes an annual summary report in Finnish on the development of greenhouse gas emissions in Finland. The report published in 2019 is available at: http://www.stat.fi/static/media/uploads/tup/khkinv/yymp_kahup_1990-2018_2019_19740_net_p2.pdf

7 Prime Minister Antti Rinne's Government Programme, 6 June 2019, p 12, available at: http://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/161664/Inclusive%20and%20competent%20Finland_2019_WEB.pdf?sequence=9&isAllowed=y

8 Salo M., Nissinen A., Mäenpää I. and Heikkinen M., 2016, Kulutuksen hiilijalanjäljen seuranta tarvitaan, available at: <https://www.syke.fi/download/noname/%7B8D2169BA-028E-404B-BBCD-CD9D8BD732F6%7D/117056>

9 A consumption-based review takes into account the lifetime environmental impacts of goods and services used domestically as well as domestic investments, meaning export is subtracted from and import is added to the amount of products produced domestically.

10 Nissinen A., Savolainen H. (Ed.), 2015, Julkisten hankintojen ja kotitalouksien kulutuksen hiilijalanjälki ja luonnonvarojen käyttö, available at: https://helda.helsinki.fi/bitstream/handle/10138/300737/SYKEra_15_2019.pdf?sequence=1&isAllowed=y

11 Tulli, Suomen ja Kiinan välinen kauppa vuonna 2018 (1–8), available at: https://tulli.fi/tilastot/tilastojulkaisu/-/asset_publisher/suomen-ja-kiinan-valinen-kauppa-vuonna-2018-1-8-;Tulli,Uljas%20Statistical%20Database

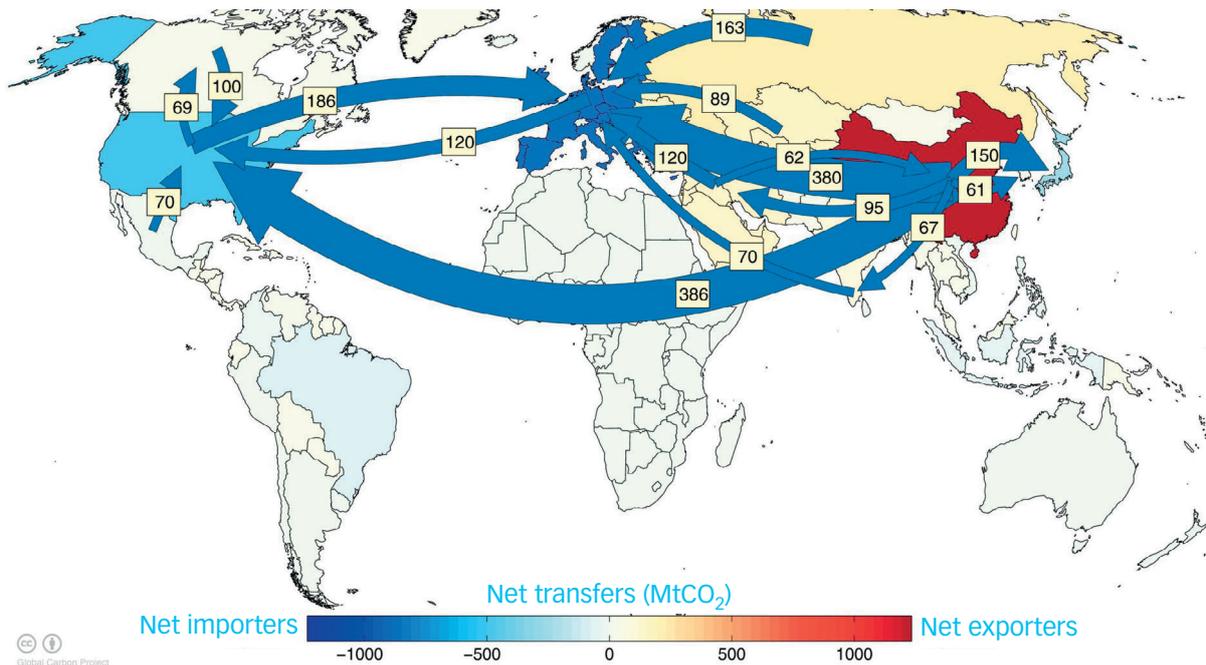
12 Tulli, Uljas Statistical Database

13 IEA, 2018, CO₂ Emissions from fuel combustion highlights 2018 edition, available at: <https://webstore.iea.org/co2-emissions-from-fuel-combustion-2018>

14 European Commission, 2011, COM/2011/0681 final, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011DC0681>

15 OECD, Guidelines for Multinational Enterprises, p.

Flows from location of generation of emissions to locations of consumption of goods and services, 16 largest emission flows (MtCO₂)



Values for 2011, the EU is treated as one region.
Source: Global Carbon Project, Peters et al 2012

encourage companies to publish up-to-date, reliable and appropriate data on their operations regularly. The guidelines highlight especially greenhouse gas emissions “as the scope of their monitoring is expanding to cover direct and indirect, current and future, corporate and product emissions.”¹⁶

The majority of business-related greenhouse gas emissions typically arise in the supply chains of companies. However, only 23 per cent of the companies that responded to a survey conducted by the international Carbon Disclosure Project in 2018 reported that they aimed to influence their suppliers’ carbon emissions. The monitoring and reduction of supply chain emissions offers substantial and nearly unused potential for reducing greenhouse gases¹⁷.

Interest in reducing consumption-based emissions is growing, because as territorial emissions shrink, a large share of emissions caused by EU Member States will in a decade’s time be consumption-based.

42–44, available at <http://www.oecd.org/daf/inv/mne/48004323.pdf>

16 Ministry of Economic Affairs and Employment, OECD, Guidelines for Multinational Enterprises, p. 29–30, available at: <https://tem.fi/documents/1410877/2870803/OECDn+toimintaohjeet+monikansallisille+yryityksille.pdf/2e3aa906-8cd6-4151-b24f-1588c079dda4/OECDn+toimintaohjeet+monikansallisille+yryityksille.pdf.pdf>

17 Carbon Disclosure Project, 2018, Closing the Gap: Sca-

ling up sustainable supply chains, p. 6, available at: <https://www.cdp.net/en/research/global-reports/global-supply-chain-report-2018>

3. How to manage carbon emissions across the value chain?

The carbon dioxide emissions caused by a company's operations or a single product are described as a carbon footprint. A carbon footprint is usually reported as a carbon dioxide equivalent, (CO₂e) making it possible to take into account not just carbon dioxide emissions but also other significant greenhouse gases such as methane (CH₄) and nitrous (Nitrous oxide, N₂O).¹⁸

The calculation and reporting of companies' carbon footprints has been promoted with various standards, guidelines and legislative projects for some twenty years. Development work has led to the definition of common standards and the various areas of a carbon footprint. Due to this, dividing a company's carbon footprint into its own emission sources (Scope 1), purchased energy emissions (Scope 2) and other indirect emissions (Scope 3) has become established practice.¹⁹ Also the calculation of a carbon footprint as well as the standardisation of related verifications and communications has been developed internationally quite extensively (see the box on page 9).

The European Union's Emissions Trading System is the largest system that requires the carbon footprint reporting of the direct (Scope 1) greenhouse gas emissions of companies. It includes verifications which are based on an ISO Standard. The obligation for reporting and monitoring is linked to the emission allowances granted to companies within the scope of the Emissions Trading System. Every year the participants must return to their national authority (in Finland this is the Finnish Energy Authority) an allowance for every tonne of CO₂e they emitted during the previous year. The

Emissions Trading System covers large industrial facilities as well as air traffic within the European Economic Area. In Finland, also smaller plants that produce district heat are part of the system.²⁰

Companies have either been required to or steered with voluntary measures to calculate their carbon footprint also in countries such as Australia, Israel, Japan, Canada, New Zealand and the United States²¹. In EU Member States such as France and Britain the calculation of carbon footprints has also been utilised as a national instrument that supplements the EU's emissions trading²². Countries are motivated to improve carbon footprint reporting as a way to encourage companies to implement emission cuts or create tools for e.g. tax instruments that are based on a company's carbon footprint. As is the case with the EU's emissions trading, the calculation and reporting of carbon footprints in international projects has for a long time focused solely on a company's own emissions and the calculation and reporting of emissions from purchased energy. The calculation of indirect Scope 3 emissions is only required rarely.²³ When a calculation has been done, it has usually been based on static computational data and various averages.

The sole use of static computational data and averages in the estimation of value chain emissions is problematic as it ignores the choices made during production, which have an enormous impact on the carbon footprint of the final product. For example, with regard to a carbon footprint, it can be very significant whether the factory where a product or its raw materials are produced uses coal

18 Sitra, Mitä nämä käsitteet tarkoittavat?, <https://www.sitra.fi/artikkelit/mita-nama-kasitteet-tarkoittavat/> (viewed on 30 August 2019)

19 Kauffmann, C., C. Tébar Less ja D. Teichmann, 2012, "Corporate Greenhouse Gas Emission Reporting: A Stocktaking of Government Schemes", OECD Working Papers on International Investment, 2012/01, p.8, available at: <http://dx.doi.org/10.1787/5k97g3x674lq-en>

20 Ministry of Economic Affairs and Employment, Emissions Trading, <https://tem.fi/en/emissions-trading> (viewed on 15 August 2019)

21 Further information OECD, <http://www.oecd.org/daf/inv/mne/Report-on-Climate-change-disclosure-in-G20-countries.pdf>

22 Kauffman C et al, p. 8

23 Ibid, p. 18

or wind as its source of energy. Static computation will not steer a value chain's producers to develop their activities towards a more environmentally friendly direction such as convincing them to choose renewable energy. For this reason, the collection of information from producers on carbon emissions is of key importance in the effective management and reduction of greenhouse gas emissions. The use of data of a high standard that is based on actual emissions is also fundamental when aiming to provide reliable information to consumers on the carbon footprint of individual products.²⁴

The determination of a product-specific carbon footprint and reporting on this must be based on five principles, relevance, completeness, consistency, transparency and accuracy²⁵. In addition to the collection of data of an adequate quality, the calculation of a carbon footprint for an entire value chain (Scopes 1–3) includes many other challenges. An effort has been made to minimise these challenges when developing carbon footprint calculation and related standards. Challenges arise especially in situations where an attempt is made to create carbon footprint examples in order to facilitate the comparison of different types of companies and products, as this will require consistent calculation methodologies, data sources and allocation of emissions. An effort has been made to develop the comparability of different kinds of products in the same product category by drawing up sector-specific guidelines. These have been developed by both the GHG Protocol and the European Commission (see the box on page 9).

In Finland, VATT Institute for Economic Research, VTT Technical Research Centre Of Finland Ltd, the Finnish Environment Institute, the Centre for Consumer Society Research and MTT Agrifood Research Finland worked together to develop a reliable method for

product-specific carbon footprint calculation. This project led to a proposal for a basic structure for a system, with which Finnish companies could produce the accurate and reliable data needed for product-specific carbon footprints and a roadmap for the creation of such systems especially in the energy and food sectors. The project was funded by numerous companies, but it did not lead to concrete applications. In 2008, Prime Minister Matti Vanhanen's Government also drew up a report on the benefits and shortcomings of climate labels with the purpose of assessing possibilities for supporting the development of labelling systems²⁶. This project did not lead to significant national policy measures either, and product-specific carbon footprint calculation was near forgotten in the domestic corporate social responsibility agenda for nearly a decade. Over the past few years, there has been renewed interest in the topic.

In Finland Natural Resources Institute Finland (Luke) has developed carbon footprint calculations for bioeconomy products as part of its EcoModules tool launched in 2017²⁷. Companies that use the service with the assistance of EcoModules can calculate the climate impacts of their products in the chain's different tiers. The tool also facilitates the connecting of the chain's actors to one another so that the environmental key figures produced by various actors related to their own product are accessible to other actors in the chain for use in their own calculations. This facilitates assessments based on production chain-specific data at all the chain's various stages all the way to a consumer product.²⁸

24 Usva K., Hongisto M. et al, 2009, Towards certified carbon footprints of products – a road map for data production, p. 4, available at: https://www.vtt.fi/inf/julkaisut/muut/2009/VATT_143_2.pdf

25 ISO 14064-1; GHG Protocol, Corporate Value Chain (Scope 3) Accounting and Reporting Standard and Product Life Cycle Accounting and Reporting Standard, Principles

26 VNK, Tuotteiden ilmastovaikutuksista kertovat merkit, valtioneuvoston kanslian julkaisusarja 11/2008, available at: https://vnk.fi/documents/10616/622954/J1108_Tuotteiden+ilmastovaikutuksista+kertovat+merkit.pdf/957e7027-9032-4601-81a9-a48863a0aba8/J1108_Tuotteiden+ilmastovaikutuksista+kertovat+merkit.pdf.pdf

27 Natural Resources Institute Finland, Environmental impact assessments towards a common goal – Luke's tool helps to evaluate the life cycle of bioeconomy products <https://www.luke.fi/en/news/environmental-impact-assessments-towards-common-goal-lukes-tool-helps-evaluate-life-cycle-bioeconomy-products/> (viewed on 5 September 2019)

28 Natural Resources Institute Finland, EcoModules, <https://www.luke.fi/palvelut/osaamisalueet/kiertotalous-ja-kestavyys/ecomodules-palvelu/> (viewed on 15 August 2019)

The calculation of carbon footprints is in large part standardised – the European Commission has created a common model for the European Union for determining the environmental impacts of products

Internationally accepted and the most commonly used standards for the assessing, reporting and verification of carbon footprints include the GHG Protocol²⁹, PAS 2050³⁰ and the ISO 14060 family of standards³¹ as well as the ISO 14040 family of standards, which is for the standardisation of life cycle assessments. ISO 14050:2009 defines terminology related to environmental management that is used in the ISO 14000 series of standards. In addition, different countries have developed different types of national carbon footprint standards, including for example energy agency ADEME's Bilan Carbone in France and the Department for Environment, Food & Rural Affairs greenhouse gas emission standard in Britain.

In 2010, on the basis of the aforementioned international and national systems, the European Commission started work to develop a common European standard for the assessment of environmental impacts. The vision for the

Commission's project is to create a common European market for green products.

Thus far, the Commission's project has resulted in the creation of the Product Environmental Footprint (PEF), a common methodology for the determination of product-specific environmental impacts based on the aforementioned international standards, as well as the creation of the Organisation Environmental Footprint (OEF) for the determination of organisation-specific environmental impacts. In addition, category-specific rules, which will facilitate the comparison of the environmental impacts of products within the same product category, have been drawn up within the scope of the Commission's PEF project. The project is currently being piloted. During the pilot rules for existing product categories will be revamped and new ones will be written for new categories. The pilot includes e.g. different types of clothing and red meat.³² In the future, the Commission is expected to also provide guidelines on how the environmental impacts calculated using the PEF model can be communicated to consumers and other stakeholders.

29 The GHG Protocol by the World Business Council for Sustainable Development and the World Resources Institute includes numerous standards on drawing up organisation and product-specific lifetime analyses, further information <http://ghgprotocol.org/about-us>

30 The British Standards Institute PAS 2050 a standard developed to calculate the lifetime carbon dioxide emissions of products.

31 This contains different types of standards including those for the calculation and reporting of greenhouse gas emissions at the organisation, project and product levels, the validation and verification of greenhouse gas calculations as well as their accreditation, and on communication of environmental impacts.

32 European Commission, The Environmental footprint transition phase, https://ec.europa.eu/environment/eussd/smgp/ef_transition.htm (viewed on 16 September 2019)

The companies piloting the EcoModules service are currently predominantly Finnish, and according to the Natural Resources Institute Finland, it has thus far only performed a small number of calculations that are based on primary data from outside of Finland's borders³³.

33 Natural Resources Institute Finland, Juha-Matti Katajajuuri, telephone call on 15 August 2019

4. Amfori BEPI system in the management of carbon dioxide emissions from production facilities based in risk countries

Amfori BEPI is an environmental responsibility system, established by Amfori in 2013, the aim of which is to improve the ecological sustainability of the global supply chains of companies.³⁴ BEPI provides purchaser companies the opportunity to manage the environmental impacts of production facilities from different sectors, which are located in risk countries³⁵. BEPI is part of the broader Amfori system, which also includes the corporate social responsibility auditing scheme Amfori BSCI commonly used by Finnish companies.³⁶ The Amfori organisation, which administrates these systems comprises 2,300 corporate members³⁷ of which around 450 are members of Amfori BEPI³⁸. There are more than 5,000 production facilities located in risk countries that are included in BEPI.

Amfori BEPI comprises a five stage process, the aim of which is to improve the ecological sustainability in its member companies' supply chains. During the first stage, a company surveys the actors in its supply chain and the environmental risks related to them as well as prioritises the producers selected for the BEPI process. After this, the suppliers that have been selected to the BEPI process carry out self-assessments on 11 environmental performance areas. On the basis of the self-assessment, the company draws up a risk management and action plan related to environmental issues in its supply chain. During the fourth stage, the production facility is offered training and consultation on

the management of environmental impacts. In the fifth stage the company monitors the progress made by the producers in its supply chain according to the plan it drew up during the previous stage. During the third and fourth stage, an audit carried out by an external party can be devised for the producer, and this will be used to assess the level of the producer's environmental management systems. The assessment will assign a maturity level of 1 (basic), 2 (good) or 3 (leading), and is valid for 24 months. After this, the producer is expected to rise to the following level.

On the basis of a self-assessment, each producer will select four essential areas of development or hot spots from the 11 performance areas included in the BEPI system. The environment management system that is one of these four is mandatory for all producers. The monitoring of energy consumption and reduction of greenhouse gas emissions is one of the 11 environmental performance areas³⁹ and the related 23 questions (and their related additional questions) are included in Part D of the self-assessment form (see Annex 1). According to Amfori, more than 70 per cent of the production facilities included in the system have selected this hot spot as one of their areas of monitoring.

In the performance area containing greenhouse gas emissions, information is collected from producers on e.g. the source of the energy they use and on their energy consumption (kWh)⁴⁰. However, one of the possible choices for source of energy is just "electricity", meaning that if the producer does not produce the electricity they use, the actual source of the energy cannot be determined

34 Amfori BEPI, Improving environmental performance in global supply chains, available at: <https://www.amfori.org/content/amfori-bepi> (viewed on 12 May 2019)

35 Amfori defines risk countries according to the World Bank's Worldwide Governance Indicators WGI. The same list of risk countries is used for both social and ecological issues. Country risk classification available at: <https://www.amfori.org/sites/default/files/amfori%20BSCI%20CRC%20V2019%20Final.pdf>

36 Amfori, Vision, mission and values, Trade with purpose, available at: <https://www.amfori.org/content/vision-mission-and-values> (viewed on 12 May 2019)

37 Amfori, Our members, <https://www.amfori.org/content/our-members> (viewed on 1 August 2019)

38 Amfori, Members, available at: <https://www.amfori.org/members> (viewed on 24 June 2019)

39 The name of the performance area is "Energy Use, Transport and Greenhouse Gases (GHG), the targeting of energy efficiency, a reduction in greenhouse gases and the management of transport"

40 Amfori BEPI, Self-Assessment Environmental Questionnaire Extract. D Energy use, transport and greenhouse gases (GHG), Franzis Wimmer, email on 24 May 2019

How can production facilities located in risk countries switch to renewable energy?

Both companies and individuals purchasing electricity can choose to purchase renewable energy in numerous countries. The renewable energy market operates in connection to the physical electrical grid, but as a separate market where trade is conducted with various certificates and certificates of origin.

Those countries that rely heavily on fossil energy, such as China and India, also have their own electricity markets based on renewable energy certificates (REC), which make it possible for individual production facilities to acquire renewable energy.

In India, certificates for renewable energy are traded in two energy exchanges Energy Exchange (IEX)⁴¹ and Power Exchange India Limited (PXIL)⁴². In India, electricity companies and production facilities that use large amounts of electricity are obliged to purchase a certain amount of renewable energy certificates. However, more than the statutory amount of certificates can be purchased, and purchases can be made by all electricity users⁴³.

For a long time, there were far more renewable energy certificates for sale in India than there were buyers for these, but at the time this report was written, a notable shift took place on the market: there were significantly more purchase offers than there were certificates for sale.⁴⁴ This has led to a rise in the price of

certificates. This is likely to lead to increasing interest in initiating new market-based renewable energy projects and in dismantling the administrative obstacles that hinder these⁴⁵.

There is also a REC market based on renewable energy certificates in China. In 2018, China presented a draft of a new policy that would make the purchase of renewable energy certificates mandatory⁴⁶. The REC market in Thailand is also currently being opened up, and commercial actors will launch a new service that provides certificates for blockchain technology-based renewable energy by spring 2020.⁴⁷

In many countries, in addition to REC markets, production facilities have the opportunity to invest extensively in their own renewable energy production, such as solar panels or small wind turbines and wind farms, for example together with other industrial facilities.⁴⁸

41 <https://www.iexindia.com>

42 <http://www.powerexindia.com>

43 POSOCO, Renewable Energy Certificate Registry in India, FAQ, <https://recregistryindia.nic.in/index.php/publics/faqs> (viewed on 26 September 2019)

44 Mercom India, Solar Renewable Energy Certificate Trading Reduces by Half in August 2019, <https://mercomindia.com/solar-rec-trading-reduces-half-august/> (viewed on 26 September 2019)

45 Mercom India, India's REC Inventory Almost Exhausted, What's Next?, <https://mercomindia.com/rec-inventory-exhausted-what-next/> (viewed on 26 September 2019)

46 Heeter, J., Speer, B., Glick, M., 2019, International Best Practices for Implementing and Designing Renewable Portfolio Standard (RPS) Policies, p. 18, <https://www.nrel.gov/docs/fy19osti/72798.pdf>

47 Energy Web, PTT and Energy Web Foundation Launch Blockchain-based Renewables Platform for Thailand, ASEAN, Japan, <https://www.energyweb.org/2019/09/11/ptt-and-energy-web-foundation-launch-blockchain-based-renewables-platform-for-thailand-asean-japan/> (viewed on 26 September 2019)

48 For example, in India production facilities have established their own plants based on solar and wind energy. See e.g. The Economic Times, Rules for captive power plants to be amended, <https://economictimes.indiatimes.com/industry/energy/power/rules-for-captive-power-plants-to-be-amended/article-show/70121180.cms> (viewed on 26 September 2019)

Energy used in production countries is based on fossil sources

Examples of the relation between electricity generation and fossil energy use in some sourcing countries of Finnish companies

India

India's annual electricity generation capacity amounts to around 360,500 MW (c.f. Finland's annual electricity generation capacity is 13,650 MW⁴⁹). Of India's electricity generation capacity more than 63 per cent is produced with fossil energy. By far the largest part of this is produced from coal (54.3 per cent). The State and regional governments produce 54 per cent of India's electricity while the rest is produced by the private sector.⁵⁰

India's electricity consumption and production continue to grow each year, and hand-in-hand with growth in demand the production of coal and lignite also increases⁵¹. During 2016–2017, India's coal production grew nearly 3.7 per cent. Of all the coal extracted from India's mines more than 80 per cent is used for the generation of electricity. Additionally, 14.5 per cent of coal is sold directly to the priority sectors such as the production of textiles and rayon.⁵² India is responsible for 7 per cent of all global greenhouse gas emissions (c.f. the European Union is responsible for 9 per cent of all global greenhouse gas emissions).⁵³

China

China's annual electricity generation capacity is around 2,000 GW or 2,000,000 MW⁵⁴. China's electricity consumption and production also grows yearly at the same time as coal and

lignite production increase. In 2018, production of coal increased in China by 5.2 per cent to 3.55 tonnes.⁵⁵

Of the energy consumed in China 59 per cent is produced from coal. The country's aim is to decrease this share to 58 per cent by 2020.⁵⁶ State-owned companies are responsible for the majority of electricity generation, transfer and distribution in China. State enterprise China Energy, which is responsible for a 226 GW electricity generation capacity is China's and the world's largest producer of coal⁵⁷. Although the use of coal has begun to increase again after a few years of stagnation, the price of renewable energy has come down and it is now a strong competitor for coal on the electricity market.⁵⁸ The initiative shown by China's electricity consumers such as production facilities in shifting to renewable electricity could be a very significant factor in cutting back on the country's greenhouse gas emissions.

Industry uses two thirds of the energy produced by China⁵⁹. China is responsible for 27 per cent of all global greenhouse gas emissions.⁶⁰

Thailand

Thailand has an electricity generation capacity of 46,931 MW, and a significant share of electricity is produced with natural gas (58 per cent)

49 Finland's National Emergency Supply Agency, <https://www.huoltovarmuuskeskus.fi/sahkon-reservikapasiteetin-turvaaminen-valttamatonta/> (viewed on 23 September 2019)

50 India's Ministry of Power, Power Sector at a Glance All India, <https://powermin.nic.in/en/content/power-sector-glance-all-india> (viewed on 23 September 2019)

51 Ministry of statistics and programme implementation, 2018, Energy Statistics, available at: http://mospi.nic.in/sites/default/files/publication_reports/Energy_Statistics_2018.pdf

52 Indian Minerals Yearbook, 2017, available at: http://ibm.nic.in/writereaddata/files/03202018145834Coal%20and%20Lig_AR_2017.pdf

53 IEA, Atlas of Energy, <http://energyatlas.iea.org/>

54 Energyworld, China to have about 2,000 GW of installed power generation in 2019, <https://energy.economictimes.indiatimes.com/news/power/china-to-have-about-2000-gw-of-installed-power-generation-in-2019/68794188>

55 Reuters, 26.3.2019, China boosts coal mining capacity despite climate pledges, <https://www.reuters.com/article/us-china-energy-coal/china-boosts-coal-mining-capacity-despite-climate-pledges-idUSKCN1R712Z>

56 Reuters, 28.2.2019, China's 2018 coal usage rises 1 percent, but share of energy mix falls, <https://www.reuters.com/article/us-china-energy/chinas-2018-coal-usage-rises-1-percent-but-share-of-energy-mix-falls-idUSKCN1QH0C4>

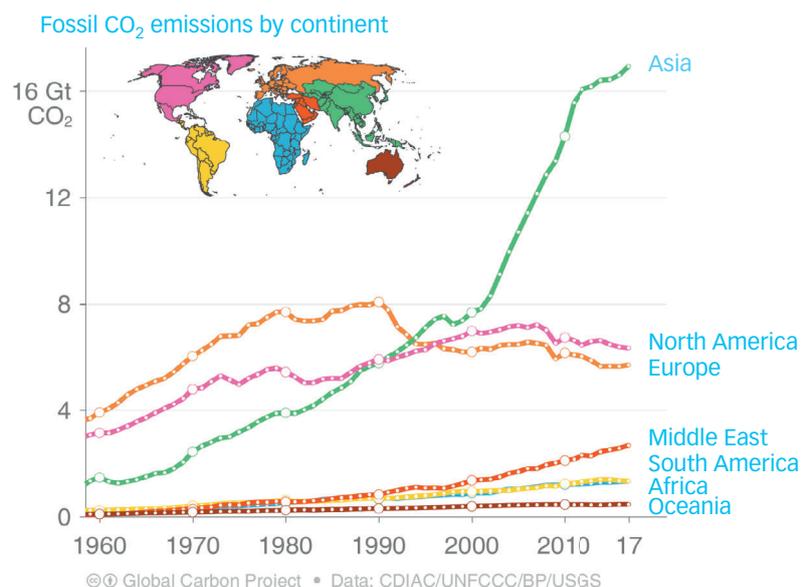
57 China Energy, Profile, <http://www.ceic.com/gjnyjt-wwEn/jtgk/chnjtjs.shtml> (viewed on 23 September 2019)

58 Myllyvirta, L., Carbonbrief, Guest post: Why China's CO2 emissions grew 4% during first half of 2019, <https://www.carbonbrief.org/guest-post-why-chinas-co2-emissions-grew-4-during-first-half-of-2019>

59 International Energy Charter, China energy efficiency report, p. 49, https://energycharter.org/fileadmin/DocumentsMedia/EERR/EER-China_ENG.pdf

60 IEA, Atlas of Energy, <http://energyatlas.iea.org/>

Asian countries which produce consumer goods for other countries are responsible for a significant proportion of global greenhouse gas emissions



as well as coal and lignite (17 per cent).⁶¹ A large share of the natural gas used by Thailand is produced in the Gulf of Thailand.

Thai industry uses 44 per cent of all electricity produced in the country. Thailand is in the process of drawing up a new energy road map drafts of which have been criticised by environmental organisations. According to the plan, renewable energy would only increase to 18 per cent of all energy produced by 2037 and the majority of energy would still be produced with fossil energy (natural gas would account for 53 per cent, coal for 12 per cent).⁶²

Pakistan

Pakistan has an electricity generation capacity of 36,000 MW. The majority of its electricity is produced with fossil energy: oil, diesel, natural gas and coal (a total of nearly 69 per cent). Renewable energy accounts for less than 3 per cent of Pakistan's electricity production.⁶³

Pakistan is aiming to double its electricity generation capacity. A large share of the new

capacity is expected to be dependent on imported coal and natural gas. Pakistan has been criticised for having no plan in place for increasing the use of renewable energy.⁶⁴

Industry uses 24 per cent of all energy produced in Pakistan⁶⁵.

Turkey

Turkey has an electricity generation capacity of 88,000 MW. Fossil energy (natural gas, coal) accounts of 52 per cent of this capacity. Hydro-power also accounts for a significant share of electricity generation in Turkey, around 32 per cent. Renewable energy, solar and wind power, account for 13 per cent of Turkey's electricity generation, and the country aims to multiple their capacity by 2027 (from 12 GW to 32 GW). However, Turkey will also continue to increase coal-based energy production: Turkey intends to double its energy production based on domestic coal.⁶⁶

61 Energy Policy and Planning Office EPPO, Ministry of energy, Electricity statistics, [http://www.eppo.go.th/index.php/en/en-energystatistics/electricity-statistic?orders\[publishUp\]=publishUp&issearch=1](http://www.eppo.go.th/index.php/en/en-energystatistics/electricity-statistic?orders[publishUp]=publishUp&issearch=1) (viewed on 23 September 2019)

62 The Nation, 9.12.2018, Power plan 'a setback for sustainable energy', <https://www.nationthailand.com/national/30360098> (viewed on 23 September 2019)

63 NEPRA, State of Industry Report 2018, available at: <https://www.nepra.org.pk/publications/State%20of%20Industry%20Reports/State%20of%20Industry%20Report%202018.pdf>

64 Institute for Energy Economics and Financial Analysis, December 2018, Pakistan's Power Future, available at: http://ieefa.org/wp-content/uploads/2018/11/Pakistan-Power-Future_December-2018.pdf

65 NEPRA, State of Industry Report 2018, p. 135, available at: <https://www.nepra.org.pk/publications/State%20of%20Industry%20Reports/State%20of%20Industry%20Report%202018.pdf>

66 Situation in August 2018, Republic of Turkey, Ministry of energy and natural resources, Investor's Guide for Electricity Sector in Turkey, available at: <https://www.enerji.gov.tr/File/?path=ROOT%252f1%252fDocuments%252fAnnouncement%252fINVESTOR%2527S%2bG UIDE%2bFOR%2bELECTRICITY%2bSECTOR%2bin%2bTURKEY.pdf>

via Amfori BEPI. In this case, general country-specific emissions factors are used to estimate a carbon footprint⁶⁷. Indirect information on the source of used energy is also provided in the section where the producer states whether they purchase or produce energy from renewable sources. Additionally, the producer is asked to report whether it has implemented any measures to minimise the negative environmental impacts of the energy its uses.

According to Amfori, its objective is to further develop data collection in BEPI so that the capacity of production facilities to purchase green electricity from their market could also be assessed. This is important because according to Amfori, the majority of suppliers currently involved in the BEPI process use energy from their local grid, which is then supplemented with backup energy solutions.

In 2017, Amfori started cooperation with the MyClimate organisation, and now provides a carbon footprint calculator to companies that are its members and the production facilities they use. On the basis of a self-assessment drawn up by the production facility the carbon footprint calculator calculates the greenhouse gas emissions of the facility's own emission sources (Scope 1) and those of its purchased energy (Scope 2). The information will help the purchaser acquire data for its Scope 3 calculation of its own carbon footprint. On the basis of this information, the purchaser can in theory dig deeper into an individual product's life cycle and use BEPI to calculate a product-specific carbon footprint. However, at this time, this would require a great deal of additional work from the purchaser.

Self-assessments or verifications carried out via Amfori BEPI are not public. The system is only just starting to be used, and only a few dozen of verifications are carried out each year. Amfori is prepared to expand the system by training more external auditors.

⁶⁷ The International Energy Agency IEA calculates country-by-country energy production emissions factors yearly, see: <http://data.iea.org/payment/products/122-emissions-factors.aspx>

5. How do Finnish companies manage the carbon dioxide emissions of their supply chains in risk countries outside Finland? – CASE: Amfori BEPI

For the purpose of this report, Finnwatch surveyed the ways in which Finnish companies manage and monitor the greenhouse gas emissions of their value chains located in risk countries. In the more in-depth questions concerning the use of fossil energy the focus was on each company's direct suppliers located in risk countries, meaning the production facility with which the purchaser company has a direct commercial relationship.

The survey was sent to companies that import consumer goods to Finnish market and manage their value chains with Amfori BSCI and which could on this basis be considered relatively advanced in their work in monitoring the responsibility of their value chains located in risk countries. The survey was sent to 42 Finnish companies that are members of responsibility network Amfori BSCI. Finnwatch added Lidl Suomi to the group it sent the survey to as its parent company has Amfori BSCI membership in Germany. Including Lidl Suomi in the study ensured that it included all of Finland's largest grocery store actors.

The survey included questions to companies on the number of direct suppliers the companies have that are located in risk countries⁶⁸, the energy sources these suppliers use, and the different ways in which purchaser companies have tried to influence the greenhouse gas emissions of their suppliers. The responses to the survey are presented in the table on pages 16–23 of this report and page 24 contains a summary of the survey's results.

The response rate for the survey was 81 per cent. Musti Group, Agentur A&M Holmberg, Texmoda, Nordic Wear, Dayton, Euro East

and Willkem did not respond at all. Nordic Outdoor reported that their contact person was currently on maternity leave. In addition, Snellman Pro stated that the company did not at this time have any direct suppliers in risk countries.

⁶⁸ Some of the companies volunteered country-specific answers without being asked for them. This information has been included in the table located on pages 16–23.

Table 1 – Management by the Amfori BSCI members of the greenhouse gas emissions of their value chains located in risk countries

Company	Number of direct suppliers located in risk countries	Is the company a member of Amfori BEPI or does it use some other similar environmental performance system to manage its suppliers' greenhouse gas emissions?	How many suppliers located in risk countries are included in the Amfori BEPI process?	How many of the suppliers included in BEPI have selected greenhouse gases as an area they are monitoring?
Alko	22 suppliers located in risk countries (Argentina, Chile, China, India, Bulgaria, Moldova, Madagascar, Panama, South Africa, USA, Croatia and Peru)	No	–	–
Altia Group	18 suppliers located in risk countries	No	–	–
Balmuir	18 suppliers located in risk countries including producers of packaging	No. Balmuir joined Amfori BSCI in 2018 and has during this first phase concentrated on corporate social responsibility. The company is interested in joining BEPI in the future.	–	–
Basic Fashion	30 suppliers located in risk countries	No, but with this Finnwatch survey the company has decided to join BEPI.	Not known	–
Best Friend Group Oy	30 suppliers located in risk countries	No, at the end of the year the situation will be reassessed and at this time the possibility of joining BEPI will be considered.	–	–
Cailap	Around 10 suppliers located in risk countries	No, but is looking into the possibility of joining.	–	–
Familon	15 suppliers located in risk countries (Pakistan 4, China 4 and Turkey 7)	No. The company has just joined Amfori BSCI and has not yet considered expanding.	One Pakistani supplier is included.	–
Fine Foods	9 suppliers located in risk countries	Yes	Are not members of BEPI	–
Finlayson	16 suppliers located in risk countries (7 in Turkey, 6 in India, 2 in Pakistan and 1 in China)	No, but currently looking into joining Amfori BEPI.	–	–
Halonen	35 suppliers located in risk countries	No	–	–

How many suppliers located in risk countries use fossil energy to power their primary operations?	Has the company decided on any objectives for the monitoring or reduction of greenhouse gas emissions produced by its direct suppliers located in risk countries?	Are suppliers located in risk countries requested to supply reporting on their own carbon footprint?	Has the company incorporated requirements related to each supplier's carbon footprint into its purchase agreements?
Not known, but the company's objective is to collect this information in the future.	No, but information on energy consumption and greenhouse gas emissions in relation to production volume will be part of the information requested from producers in the future.	No, but information on energy consumption and greenhouse gas emissions in relation to production volume will be part of the information requested from producers in the future.	No
Not known	No	No	No
All Balmuir suppliers located in risk countries use fossil-based energy at least partly.	No, but the company intends to calculate the carbon footprint of different value chains as far as possible in the future.	No	No, but purchase agreements include general conditions e.g. for reduction in emissions.
Not known. In Bangladesh most likely natural gas and diesel as a backup source of energy.	Not yet, but with the introduction of BEPI this may change.	Not yet, but with the introduction of BEPI this may change.	No
6 suppliers. Other suppliers use electricity from their national grid and heat and/or pressurised steam from the district heat network. The majority of this is most likely produced with fossil energy sources. Some have plans to replace fossil energy with other sources of energy.	No	No	No
Not known	No	No	No
The majority of suppliers use electricity from their national grids, meaning their energy source is most likely for the most part fossil. Two Pakistani suppliers use hydropower as their primary source of energy,	No, but the company surveys the energy sources used by suppliers and their ability to report on their carbon footprint.	From the beginning of 2019, the company has asked its suppliers, who are located in risk countries, to provide yearly carbon footprint reports, but at this time only a few suppliers are able to report on this.	Not yet, but information related to carbon footprint will now be attached to supplier assessment forms.
6. The other suppliers use biomass as their primary source of energy,	No, but the company intends to set these in the future.	No	No
The energy sources used by all suppliers are not known. The company's main partner in Turkey uses coal and natural gas as its energy source, the partner is currently investing in solar panels, with which it will compensate some of the electricity consumption at its factory.	The objective is to reduce the entire value chain's carbon footprint by 20 % by 2020. The majority of emissions (44%) are produced from materials (primarily cotton). Production accounts for 27% of emissions, administration and resales accounts for 21%, logistics for 8% and packaging material for 1%. The company intends to increase the ambitiousness of its climate objectives in 2020 at the time its corporate responsibility strategy is adopted.	The company asks its two principle partners for precise annual data for CO2 calculation, and the aim is to expand this practice to all partners, for example, by using BEPI.	No
Not known	No, but the company is currently examining which environmental performance programme or organisation could offer the best possible tools for the monitoring and reduction of the company's carbon footprint in the future.	No	No

Company	Number of direct suppliers located in risk countries	Is the company a member of Amfori BEPI or does it use some other similar environmental performance system to manage its suppliers' greenhouse gas emissions?	How many suppliers located in risk countries are included in the Amfori BEPI process?	How many of the suppliers included in BEPI have selected greenhouse gases as an area they are monitoring?
Halti	15 suppliers located in risk countries	No. The company has joined the bluesign system, which sets requirements e.g. for the minimisation of emissions.	The company has engaged in discussion with its suppliers on their willingness to join BEPI.	–
Heinon Tukku	10 suppliers located in risk countries of which the majority are in Greece	No. The company will in time assess the possibility of BEPI membership.	–	–
Hofler	6 suppliers located in risk countries (Asia)	No, but the company is considering joining as it is developing new non-leather products.	–	–
Image Wear	4 suppliers located in risk countries	No. The company first wants to complete BSCI audits and will only then consider joining BEPI.	–	–
Kesko	Around 430 suppliers located in risk countries. The precise number varies according to purchase agreement periods.	Yes	14	9
L-Fashion Group, Luhta	Will not disclose the number of suppliers it has in risk countries. The production of L-Fashion Group products is centred in Asia, and primarily in China. The group acquires around 95% of its products from China. The group also has its own production facility in China.	No, but they are looking into joining.	–	–
Lidl Suomi (response time until the end of September, provide answers)	Will not disclose the number of suppliers it has in risk countries.	No. The company is currently drawing up an global corporate responsibility strategy, as part of which BEPI's suitability as an environmental and climate target management tool will be examined.	–	–
Logonet	10 suppliers located in risk countries	No, but with this Finnwatch survey the company has decided to join BEPI in autumn 2019.	–	–

How many suppliers located in risk countries use fossil energy to power their primary operations?	Has the company decided on any objectives for the monitoring or reduction of greenhouse gas emissions produced by its direct suppliers located in risk countries?	Are suppliers located in risk countries requested to supply reporting on their own carbon footprint?	Has the company incorporated requirements related to each supplier's carbon footprint into its purchase agreements?
Not known for all suppliers. The company's supplier in China uses electricity, which is likely fossil-based.	Halti aims to be a carbon neutral company by 2022. Additionally, the company is investigating which parts of its value chain it can extend its target for carbon neutrality to.	No, but it has started to survey possible cooperation possibilities with Climate Partner to reduce its carbon footprint.	No
Not known	No, setting these will be assessed later.	No	No
Not known	Not yet	No	No
Not known	No	No, but its own audits ask about greenhouse gas emissions and ISO 14001 certification.	No
Not known	Kesko has set science based targets ⁶⁹ for its own activities as well as for its supply chain. The primary objective with regard to its supply chain is to encourage its largest suppliers to set their own ambitious emissions targets. The target does not distinguish between Kesko's private label suppliers and its other suppliers. In risk countries, Kesko will aim to get more suppliers to join the BEPI process after which it will also be able to have an impact on reducing the emissions of its smaller suppliers.	No, but suppliers are encouraged to join Amfori BEPI. The IGS Environmental Assessment has been introduced as part of ICA Global Sourcing IGS cooperation. During the assessment suppliers are asked about energy consumption, energy sources and measures to reduce energy consumption. In addition, the audit process of building and technical trade chain Kesko Onninen's Purchasing Office in Shanghai also asks in connection with ISO 14001 certification about the implementation of an environment management system and the selected areas of improvement wherein greenhouse gases are one area.	No
Not known. The group's own factory in China uses electricity from the local grid. The electricity is likely produced from fossil fuels.	No, but the company is monitoring energy consumption in its own factory in China and aims to minimise energy use. The group is about to start the calculation of its overall carbon footprint.	No	No
Not known	No, but Lidl Suomi's objective is to set science based targets (SBT) also for its supply chain.	No	No
9	No	No	No

Company	Number of direct suppliers located in risk countries	Is the company a member of Amfori BEPI or does it use some other similar environmental performance system to manage its suppliers' greenhouse gas emissions?	How many suppliers located in risk countries are included in the Amfori BEPI process?	How many of the suppliers included in BEPI have selected greenhouse gases as an area they are monitoring?
Marimekko	30 suppliers located in risk countries	No, but the company is following BEPI's development.	–	–
Mastermark	50–100 suppliers located in risk countries. The number of active suppliers in these countries varies each year and has been decreasing because the company's procurement activities are being transferred more and more to a client.	No	–	–
Nanso	13. Of these, the Nanso brand has 11 suppliers located in risk countries (5 in Turkey, 5 in China and 1 in India ⁷⁰) and the Vogue brand has 2 (1 in Turkey and 1 in China ⁷¹).	No, but considering joining.	–	–
Orthex Group	60 suppliers located in risk countries	No. The group is focusing on the introduction of Amfori BSCI, where it still has some work left.	–	–
Pentik	85 suppliers located in risk countries	Yes	5	Not yet known, as they are new members.
Refresco Finland	5 suppliers located in risk countries	No. The company says it has focussed its responsibility work on the its responsibility work with the juice industry's Sustainable Juice Covenant.	–	–
Reima	34 suppliers located in risk countries	No, but the company is aiming to join bluesign, environmental and chemical safety system for the textile industry, which is better known in the company's export market.	–	–
S Group	Around 400 suppliers located in risk countries	Yes	Not known. The group has tested BEPI with suppliers but does not currently have objectives or monitoring for its use.	Not known

70 The data is based on deliveries made in spring 2019.

71 The data is based on deliveries made in 2018.

How many suppliers located in risk countries use fossil energy to power their primary operations?	Has the company decided on any objectives for the monitoring or reduction of greenhouse gas emissions produced by its direct suppliers located in risk countries?	Are suppliers located in risk countries requested to supply reporting on their own carbon footprint?	Has the company incorporated requirements related to each supplier's carbon footprint into its purchase agreements?
Of the company's suppliers, 17 use fossil-based energy, 4 use renewable energy and 9 use both fossil and renewable energy sources side by side. Renewable energy sources in use include hydro and solar power and biomass. Three suppliers who currently use fossil energy sources are transitioning to the use of renewable energy or planning to increase its use.	No, but the company has launched a project this year for drafting emission cut targets for its supply chains.	No	No
Not known	No	No	No
Not known	No	No	No
Not known	The group has launched a carbon footprint project to monitor carbon emissions. The project will analyse the environmental impacts of the group and its suppliers.	No	No
Not known	No, but with the introduction of BEPI membership the company intends to discuss its targets for reducing environmental impacts with its suppliers and to encourage them to acquire environmental certification for their production in addition to corporate social responsibility certification.	No	No
Not known	No	No	No
Not known. The assumption is that all of them use it at least partially.	The company has begun to examine the carbon footprint of its activities and products e.g. for cooperation with the Compensate Foundation ⁷² . The company has also tentatively discussed setting targets for reducing the carbon footprint of its supply chain.	No	No
Not known	In spring 2019, S Group published science based targets ⁷³ for its own activities as well as for its supply chain. S Group has set a million tonne emission cut targets for its value chain which it must achieve by 2030. This will also cover the emissions created during the production of sold products. The target does not distinguish between S Group's private label suppliers and its other suppliers.	The company has introduced CDP Supply chain emissions reporting this year, which includes a survey that has also been sent to some of its risk country suppliers.	No

72 Further information <https://compensate.com>

73 Further information <https://sciencebasedtargets.org>

Company	Number of direct suppliers located in risk countries	Is the company a member of Amfori BEPI or does it use some other similar environmental performance system to manage its suppliers' greenhouse gas emissions?	How many suppliers located in risk countries are included in the Amfori BEPI process?	How many of the suppliers included in BEPI have selected greenhouse gases as an area they are monitoring?
Stockmann	The Stockmann Group has around 255 direct suppliers in risk countries, of which around 120 are suppliers for Lindex and around 135 are suppliers for Stockmann.	No. The Stockmann Group promotes environmental issues primarily through its purchase offices, and the group does not at the moment have plans for joining Amfori BEPI. However, the situation will be regularly reassessed.	–	–
Sultrade	10 suppliers located in risk countries (China and India)	No, but interested in learning more about the system.	The company is currently looking into this.	–
Tammer Brands	900 suppliers located in risk countries	No. The company has focused on Amfori BSCI, but in connection with this Finnwatch survey the company is planning to join BEPI in the near future.	–	–
Tokmanni	368 suppliers located in risk countries	Yes, the company is starting to implement BEPI.	65	Not yet known
Transmeri	Around 30 suppliers located in risk countries	No. The company is setting up a development group that will focus on responsibility. The group will be tasked with determining the needed responsibility measures.	–	–
Vallila	17 suppliers located in risk countries	Yes, the company has been a member since April 2019.	0	–
Vesalainen	5 suppliers located in risk countries	No, but may join later.	–	–
Wihuri Oy Aarnio Metro-tukku	18 suppliers located in risk countries	Yes	2	Suppliers have only just registered with the BEPI process, and for this reason there is no data available yet.

How many suppliers located in risk countries use fossil energy to power their primary operations?	Has the company decided on any objectives for the monitoring or reduction of greenhouse gas emissions produced by its direct suppliers located in risk countries?	Are suppliers located in risk countries requested to supply reporting on their own carbon footprint?	Has the company incorporated requirements related to each supplier's carbon footprint into its purchase agreements?
Not known	Lindex aims to reduce the carbon emissions of its value chain by 30% before 2030. The objective has only just been set and an action plan is currently being drafted with three external actors. The plan will include Scope 3 measures, which will facilitate the monitoring and reduction of carbon dioxide emissions in cooperation with its suppliers. Stockmann is looking into possible environmental targets for its supply chain.	No	No
They use electricity from their national grids, meaning their energy source is most likely primarily fossil-based.	No, but the company intends to determine these as part of the Transmeri Group's responsibility project.	No	No
Not known	The company is collecting current data so it can set targets.	No	No
Not known	No, but the company intends to develop these after introducing use of BEPI.	No, but the company intends to make progress in this area with the introduction of BEPI.	No, but the company intends to make progress in this area with the introduction of BEPI.
Not known	No	No	No
5 of the 6 largest suppliers located in risk countries partly or only use fossil-based energy for operating their production facilities. An Indian supplier's factory is powered by solar and wind power. The factory of the company's supplier in Turkey uses natural gas. In Pakistan its suppliers also still use energy from fossil sources, such as gas, coal, diesel and fuel oil, as well as biomass, which means energy produced from local farming waste. In Egypt the company's supplier uses natural gas only in its boiler function as well as in production related to the support process for its printing process. The company's supplier in China uses natural gas in its latex production process, and in India Vallila's rug supplier utilises diesel only as a backup energy source.	No	No	No
Not known. Some have solar panels, but the share of energy produced by these is not known.	No	No	No
Not known	No	No	No

6. Summary

Much of the carbon footprint for Finnish consumption is created outside of Finland's borders. Many of the goods we use, such as textiles, clothing and electronics are produced in countries where production is based in large part on fossil energy. The mitigation of the climate crisis is a corporate social responsibility issue and companies that import products to the Finnish market have the responsibility to ensure that the products are produced in a climate conscious manner.

The results of the survey carried out by Finnwatch prove that the measures taken by companies to manage the emissions of their value chains in risk countries are very basic. Not one of the companies that responded to the survey had incorporated requirements related to greenhouse gas emissions or renewable energy into their purchasing agreements. Only Finlayson and Familon required suppliers to submit reporting on their carbon footprint. This year, S Group has also introduced use of the CDP Supply chain reporting on emissions, and the related survey has also been sent to some of the group's direct suppliers located in risk countries. Additionally, a few companies (Kesko, Image Wear) ask certain suppliers about energy consumption and energy sources, for example, as part of ISO 14001 certification reporting.

More than half of survey respondents (22 companies) did not know what type of energy their suppliers located in risk countries used to produce the products they purchase. Those parties who were aware or asked their suppliers for information about this for the purposes of the Finnwatch survey confirmed that the majority of energy sources were fossil-based. Many of the direct suppliers of Finnish companies located in risk countries use electricity from the public grid, which in many countries such as China and India means predominantly energy produced with coal. Production facilities in developing countries use diesel as a backup source of energy in case of electrical outages. Not one of the

companies that responded to the Finnwatch survey mentioned that their suppliers has purchased renewable energy certificates for the energy they used or used other market mechanisms to choose renewable energy.

Of the suppliers for companies that are members of Amfori BEPI, an environmental performance system, only 87 were involved in the BEPI process. The clear majority of these were suppliers for Tokmanni (65). Not one supplier involved in the Amfori BEPI process had undergone external verification or the purchaser company located in Finland was not aware of any such verification (Tokmanni had only just joined BEPI and for this reason was unable to access this information from the Amfori database). Only Kesko was able to report that 9 of its suppliers in risk countries monitored their greenhouse gas emissions in accordance with Amfori BEPI.

While the situation seems concerning, the other side of the coin is a promise of enormous emission reduction potential. When Finnwatch started the preparation of this study, there were only five Finnish companies registered with Amfori BEPI. As the study was being carried out this number grew to 9 as Tokmanni, Basic Fashion, Logonet and Tammer Brands decided to join Amfori BEPI. In addition, 13 companies reported that they were looking into or considering joining BEPI. Halti was already a member of the textile industry's bluesign system, and Reima stated in the Finnwatch survey that it would aim to join the system in the future. Many of the companies that had not yet committed to concrete measures, sent surveys on climate and energy measures to their suppliers.

Public debate and pressure from consumers can encourage companies to act very quickly. The companies selected for the survey alone have more than 3,000 direct suppliers in risk countries⁷⁴. If companies began to

⁷⁴ This figure does not include all suppliers as Lidl Suomi and L-Fashion Group did not provide information on the number of suppliers they have in risk countries.

demand that these suppliers take steps to use renewable energy and save energy, this would have a significant impact on greenhouse gas emissions. If these measures were implemented more broadly to all the companies' subcontractors and the effort was coordinated at the European level for example within the scope of Amfori, companies could have a significant impact on the climate sustainability of energy markets in production countries.

7. Recommendations

The climate crisis has progressed to a point where it will cause severe negative consequences during our lifetimes. Unless we are able to halt this crisis, ecosystems and coming generations are in danger.

Climate action is needed in all sectors, nationally and internationally. At the same time as Finland and companies that operate

in Finland must immediately engage in measures to cut territorial greenhouse gas emissions, measures must also be targeted at consumption-based emissions. The following is a list of urgent recommendations for companies, Amfori BEPI, decision-makers and the public.

COMPANIES

- Companies must set public timebound objectives for the monitoring and quantitative reduction of the greenhouse gas emissions created by their suppliers and entire value chain. Instead of static computational data, the baseline should be surveyed by making an effort to collect as much data as possible based on actual emissions.
- Retail chains must set Scope 3 emission reduction targets for their private label products and own import products for which they bear primary responsibility, separate from other value chain-related emission reduction targets.
- Companies must include their requirements concerning the use of renewable energy in all their purchase agreements. Investments by suppliers into the introduction of renewable energy use and their efforts to be more energy-efficient should be supported for example with temporarily increased purchase prices.
- Energy solutions by suppliers must first and foremost favour the generation of new renewable energy (for example, captive power plants maintained by production facilities or a group of producers) and only after this renewable energy certificates that can be bought from the market⁷⁵. At the same time, energy efficiency must be promoted at all production facilities.
- Companies must implement sector-specific cooperation quickly and effectively to reduce fossil energy use at production facilities in risk countries. One way to do this is to adopt the Amfori BEPI system, which facilitates the modular distribution of data on value chain emissions. Advocacy towards the governments of the largest production countries and trade associations and for the promotion of new renewable energy products must be coordinated for example on the BEPI platform. A strong signal must be sent to production countries that European markets are transitioning to non-fossil energy, and that this requirement will also be extended to apply to commercial partnerships outside of Europe.
- Cooperation is needed between companies and various lifetime calculation and carbon footprint service providers to facilitate the collection and effective utilisation of carbon footprint data. To reduce audit fatigue amongst subcontractors, companies must consolidate and share information from numerous systems into various producer databases.

⁷⁵ The effectiveness of the renewable energy certificates market should be assessed on a country-by-country basis. Common challenges related to the certificates market, see e.g. Brander M., Gillenwater, M. and Ascui, F., 2017, Creative accounting: A critical perspective on the market-based method for reporting purchased electricity (scope 2) emissions

AMFORI BEPI

- Amfori BEPI is built on dialogue between suppliers and purchasers, and very few third party verifications are carried out within the scope of the programme at this time. Regularly performed accredited verifications must be made mandatory for all the actors involved in the system. This is essential not only to maintain the credibility of the system, but also to decrease the administrative burden to small and medium-sized purchasers.
- European buyers who are members of Amfori BEPI must be obligated to extend their use of Amfori BEPI to their value chains in the same manner as quantitative requirements have been set in Amfori BSCI. According to the Finnwatch survey, even many of the companies which have been members of BEPI for numerous years have only added a few of their suppliers to the system.
- Reporting by Amfori BEPI concerning greenhouse gas emissions must be developed so it is more detailed. Production facilities must be actively encouraged to not only engage in energy saving measures, but to change the energy they use completely to renewable energy sources either by investing in their own renewable energy sources or by purchasing energy from market-based systems. A producer's possibility to purchase renewable energy should also be noted in BEPI assessments. Each production country's market-based renewable energy purchase models should also be assessed. All producers who have the possibility to acquire effective market-based renewable energy certificates or certificates of origin must be obligated to do so.
- BEPI's carbon footprint calculation should be further developed so that it will provide data that can be utilised in the calculation of a purchaser company's product-specific carbon footprints.
- Amfori must actively facilitate dialogue between the most important producer countries, producers and their European buyers and aim to steer the energy investments in the direction of renewable energy sources.
- As Amfori BEPI develops and grows, a separate list of risk countries must be drawn up for environmental and climate issues. Many countries that are not risk countries in matters related to corporate social responsibility and have sufficient labour legislation may be risk countries in environment and climate related matters.
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POLITICAL DECISION-MAKERS

- Finland must ensure that the national targets set in the Government Programme for a carbon neutral Finland by 2035 are achieved with national measures. This is necessary in order for Finland to maintain its image in international forums as a credible actor in the mitigation of the climate crisis. At the same time, Finland must draw up a strategy on how Finland will promote an end in the use of fossil energy outside of Finland and the European Union.
- Finland must begin to monitor consumption-based emissions on a yearly basis and determine a climate science based sector-proportionate target for the reduction of consumption-based emissions, which will be entered into climate legislation. This can be done in cooperation with Sweden, which is currently drawing up targets for consumption-based emissions and sector-specific measures for attaining the aforementioned climate targets⁷⁶.

⁷⁶ Stockholm Environment Institute, PRINCE: revealing the global impact of Sweden's consumption, <https://www.sei.org/featured/prince-global-impacts-sweden-consumption/> (viewed on 2 October 2019); Prince-project, <http://www.prince-project.se/swedens-main-environmental-goals/> (viewed on 2 October 2019)

- Finland has made the decision to end the use of coal by 2029. A second target that must be reached by that same year is to ensure that all coal-generated energy at all points of production are known. By 2034, Finland should not consume products which are produced with energy a significant share of which is coal-based (e.g. more than 5 per cent).
- Fundamental decisions related to the climate crisis are made in the energy policies of Finland's trade partners, such as China and India. The decisions implemented by these countries can be steered by influencing the rules for international trade. Current and future international and bilateral trade agreements must be assessed from a climate perspective and decision-makers must ensure that the investments and trade included in the scope of the agreements do not rely on fossil energy.
- The EU should look into implementing a carbon tax at its borders for products produced with fossil energy.
- Information on carbon emissions is essential for the development of different emissions-based steering mechanisms, such as carbon taxes. The calculation of carbon emissions and sector-specific calculation standards must be developed by funding their research and drafting. Statistics Finland must also report annually on Finland's consumption-based emissions and further develop reporting, to make it more accurate.
- The calculation of corporate carbon footprints must be promoted systematically by providing with government support for this as well as by speeding up voluntary measures of companies by requiring the calculation of carbon footprints in public procurement. Companies can be supported in calculating their carbon footprint for example by opening up Natural Resources Institute Finland's EcoModules tool to the public. After voluntary measures and soft steering methods have been implemented, the calculation of product-specific carbon footprints must be made mandatory.
- Finland must begin the preparation of carbon tax that will steer consumption. The implementation of carbon taxes can be initiated by applying it to specific product categories. These taxes can then be expanded to apply to all products as we acquire more experiences on effective tax solutions and data on carbon emissions becomes more common. When legislating carbon taxes, social justice should be taken into account: steps should be taken to avoid a flat tax rate that will treat everyone in the same manner. Social justice can be taken into consideration by operating e.g. in the scope of the VAT system: at the same time as carbon taxes are set for high emission products, the VAT rate for low emission products can be decreased.

THE PUBLIC

- Consumers must cease all unnecessary material consumption and opt to recycle and repair products instead of buying new ones.
- Consumers must ask companies to provide information on what type of energy is used to produce their various industrially produced consumer goods and what their related emissions are. Consumers should avoid products from unknown products, the environmental impacts of which are unknown and those produced with fossil energy.

Annex 1 Amfori BEPI self-assessment form concerning energy use, transport and greenhouse gas emissions

amfori –Self-Assessment Environmental Questionnaire - Extract

D ENERGY USE, TRANSPORT AND GREENHOUSE GASES (GHG)			
D.1	Does your site monitor and track energy consumption?	Yes	No
D.2	Does your site have any certifications on Energy Management System?	Yes	No
D.2.1	If yes, which?	ISO 50001	Other
D.3	Please indicate all energy sources used and consumption figures (kWh)	electricity	kWh
		steam	kWh
		chilled water	kWh
		coal	kWh
		oil	kWh
		fuel	kWh
		natural gas	kWh
		wood	kWh
		renewables (total)	kWh
		other	kWh
D.4	What are the main energy uses for your site?	production machinery and equipment	
		production heating	
		production cooling	
		air-conditioning	
		compressors	
		powered industrial trucks	
		lighting	
		office	
		other	
D.5	Does your site purchase or generate any energy from renewable sources?	Yes	No
D.5.1	If yes, Please indicate which	solar	wind
		hydropower	biomass
		biofuel	geothermal
		other	
D.5.2	What percentage of total energy used is this (%)?		
D.6	Does your site have systems or procedures in place that seek to reduce the site's environmental impact from Energy?	Yes	No
D.6.1	If yes, please provide details, including targets		
D.7	Does your site have systems or procedures in place that seek to reduce the site's environmental impact from Transport?	Yes	No
D.7.1	If yes, please provide details, including targets		
D.8	Does your site have systems or procedures in place that seek to reduce the site's environmental impact from Greenhouse Gases (GHG)?	Yes	No
D.8.1	If yes, please provide details, including targets		
D.9	Does your site provide training to relevant personnel in relation to:	energy	
		transport	
		greenhouse gases (GHG)	
D.10	Does your site conduct site energy audits?	Yes	No
D.10.1	How often are these done?	every 6 months	every 12 months
		every 24 months	every 36 months
		less often	
D.10.2	When was the most recent audit?		
D.11	Is your site required to monitor or calculate energy and/or GHG emissions to demonstrate compliance with applicable permits (and/or reporting standards)?	Yes	No

D.12	Does your site monitor or routinely assess emissions of GHGs associated with site processes and activities, fuel use for on-site or off-site transportation, agricultural activities etc.?	Yes	No
D.12.1	If yes, please specify (tool, method etc.)		
D.13	Does your site monitor or routinely assess emissions of fluorinated gases (F)?	Yes	No



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