
PlanetFirst
PARTNERS

WELCOME LETTER FROM FRÉDÉRIC DE MÉVIUS

Planet First Partners (PFP) launched in 2021 as a European Sustainable Investment platform. We aim to guarantee that all our investments will deliver a substantial contribution to at least one environmental or social issue and do-no-significant-harm to any other sustainability issue.

Our first sustainability report covers PFP's sustainable investment operations in 2021 and 2022. The primary purpose of this report is to provide insight into our business, the importance of sustainability and examples of how this is incorporated in our strategy and investment portfolio.

PFP has the in-house capacity and experts to understand the regulatory, technological, and scientific landscapes, deriving insights to guide and improve our investment strategy. We offer these views to our portfolio companies, directly supporting in the increasingly challenging journey of corporate sustainability reporting. More importantly, we help them to create value from sustainability.

The EU Sustainable Finance Framework entered into force in the past two years, whilst the war in Ukraine compounded with the supply-chain and inflationary crisis contributed to increased complexity across the energy markets. Europe responded to this crisis by doubling-down on the EU Green Deal and was followed by the US Inflation Reduction Act (IRA). Both the Green Deal industrial plan and the IRA provide unprecedented funding for climate mitigation activities.

2022 ended with mixed results. At COP 27 in Egypt, scientific consensus indicated that current trends of GHG emissions are likely to overshoot the Paris Agreement's 1.5˚C target, and negotiations progressed for the creation of the first loss and damage mechanism to support least developed economies. Financial markets saw a deceleration of financial flows towards sustainability-light financial products, but steady growth of allocations to robust sustainable investment strategies.

PFP matured its investment pipeline and deployed capital in 2021, investing in Sunfire and Submer. In 2022, with the unsettled state of the markets, we saw a resumption of activity in H_2, with a few opportunities entering more advanced diligence stages, but we met with a continued mismatch in valuation expectations and earlier than expected maturity of our target's technologies. Our team consolidated the foundations of our sustainable investment process, developing policies and processes, and providing active support to our portfolio companies. PFP also concluded the onboarding of Eka VC.

Finally, we successfully closed our fundraise process in Q4 2022, and on behalf of our team, I am happy to share that our sustainable investment process played an important role in building the relationship with our new Limited Partners. We closed the year energised and initiated 2023 with an exciting deal pipeline with several active files across all investment verticals. Our portfolio is maturing, with both Sunfire and Submer preparing to take the next steps in their growth trajectories. Eka VC is consistently deploying capital and issued their first sustainability report in Q3 2022.

In 2023 we are looking forward to growing our team and continuing to be selective in our investment choices as valuations are being adjusted as a result of interest rate rises and the economic slowdown. Our rigorous investment selection process and research ensures that we are confident where we deploy capital to, support our portfolio, and further develop strategic relationships with relevant coalitions and our peers in the sustainable investment space.

Frédéric de Mévius
Executive Chairman &
Managing Partner

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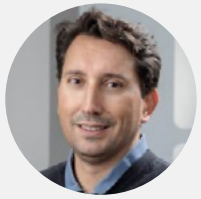

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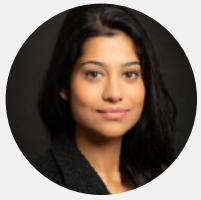

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LONDON STOCK EXCHANGE

THE PEOPLE AND THE PLANET

Planet First Partners' (PFP) exists to accelerate the growth of sustainable development. We do not subscribe to the doom and gloom views usually presented by activists, nor embrace conformist views that technology will provide a solution to all issues faced by both people and planet. As such, we acknowledge that Climate Change, Biodiversity loss, and Water scarcity require immediate action.

We will play a role in mitigating the three challenges, empowering entrepreneurs and enabling technologies that have the highest scale-up potential and that deliver market returns and substantial contributions to sustainability.

On Climate Change.

Greenhouse gas emissions are inherent to our economy. These are webs of economic activities, with different types of GHGs (CO_2, methane, nitrous oxide) being active in the atmosphere for different periods of time, and sectors contributing with direct and indirect emissions. Some things are, however, clear.

The use of fossil fuels needs to be phased out, they still represent the majority of global GHG emissions (>80%) and are the cause of 1 in 5 deaths worldwide[1]. Sectors like transportation have 100% of its emissions associated with fossil-fuels, others like agriculture have other sources of emissions like deforestation.

The need for a rapid fossil-fuel phase out was signalled at the UNFCCC COP27. Planned Government and Corporate policies and plans are likely to overshoot the 2030 1.5˚C Paris target and create challenging conditions to limit warming to 2˚C by 2050.

This carries an overwhelming risk of unpredictable and erratic meteorological and weather events, including life-threatening and catastrophic events like the ones seen in Europe and in Pakistan in 2022.

Pragmatically, this phase out will take a long time. Some sectors will struggle to substitute fossil-fuels with renewables. A good example of this is aviation, with no technical and commercially viable option to fully replace kerosene which contributes to greenhouse gas emissions.

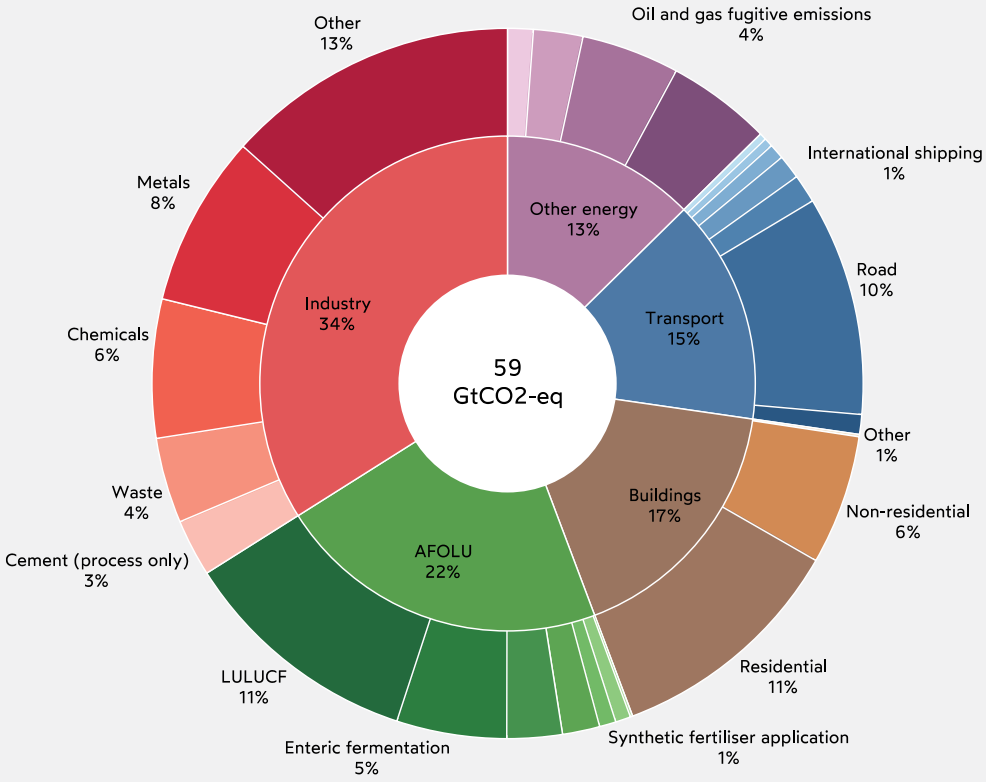

Figure 1: *CO_2 equivalent emissions by sector – IPCC AR6 (WG III contribution and Synthesis Report), data collated by PFP.*

1. Vohra et al (2021) Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem

THE PEOPLE AND THE PLANET

Other sectors are changing rapidly, with economies of scale driving the cost of renewable on par with conventional sources[2]. Wind and solar power generation are now competitive with conventional sources, driven by mature technologies and manufacturing processes, as well as system modularity.

The IEA recently estimated record clean energy investments of USD 1.7 trillion in 2023[3]. Transition of energy generation to 100% renewables in 145 countries by 2050 estimates positive outcomes, with a net present cost of USD 61.5 trillion and payback in less than a decade due to gains in efficiency and lower cost of energy[4].

Main detractors on the viability for a full transition to renewables point to the unavailability of mineral resources and the relative higher consumption of some of these (namely copper, zinc and silicon[5]) by renewable infrastructure.

Recent reports by the US Geological Service by the Department of Energy[6] are sobering – some materials face short term risk (dysprosium and cobalt), others, medium term (nickel and lithium).

Additional insights presented by Mckinsey and other research groups corroborate the idea that the absolute availability of materials is not the main issue. The relative scarcity is a consequence of the lead time to bring known reserves into production (which can be mitigated) and a failure of projections to account for material innovation and near perfect substitution (i.e., aluminium for copper, or sodium for lithium).

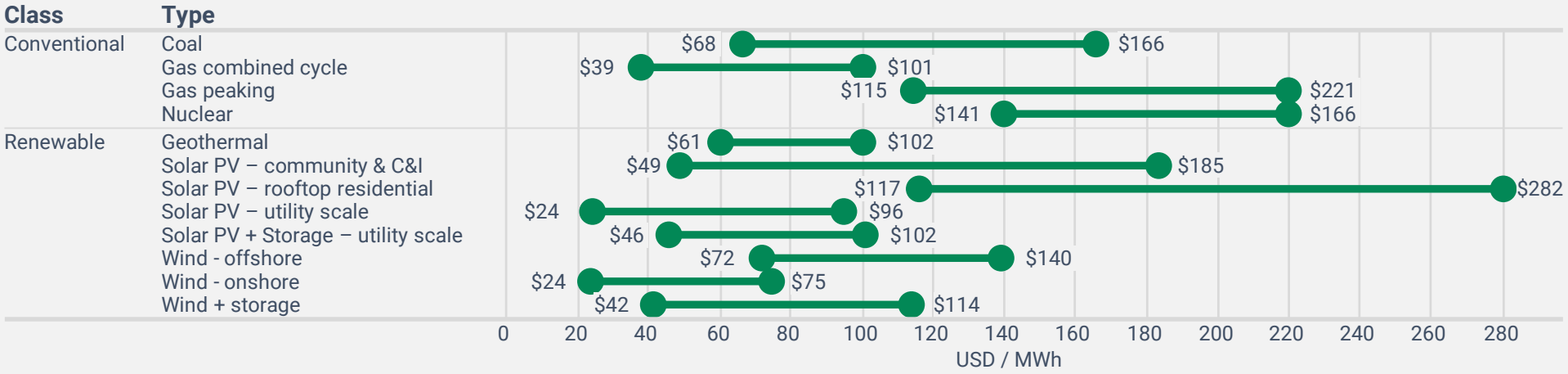

Figure 2: *Levelized cost of electricity – Lazard LCOE analysis, April 2023, data collated by PFP.*

2. IEA (2022), India's clean energy transition is rapidly underway, benefiting the entire world
3. IEA (2023), World Energy Investment 2023
4. Jacobson et al (2022) Low-cost solutions to global warming, air pollution and energy insecurity for 145 countries
5. IEA (2021), The Role of Critical Minerals in Clean Energy Transitions
6. US Department of Energy (2023), Request for Information on Critical Materials

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On Biodiversity loss.

As the second issue that requires immediate action, Biodiversity loss is different from Climate Change. There is no near-perfect indicator (like GHG emissions) that captures the impact of all economic activities on all dimensions of Biodiversity. It is, however, easier to identify drivers of Biodiversity loss.

The main driver for Biodiversity loss has been the expansion of agricultural and extractive activities over natural landscapes, which rapidly accelerated in the past 50 years. The outcomes of the expansion can be seen in the 69% decline of the Living Planet Index, indicating the population collapse of key vertebrate species globally as a result of habitat change (deforestation/conversion) or habitat degradation (chemical or physical pollution). Circa one million species were brought under extinction risk, and 85% of wetlands have been lost[7].

During this period the agricultural green revolution arrived in the Global South, bringing accelerated economic growth to developing countries like Brazil, Indonesia, and Costa Rica but ultimately destroying megadiverse habitats. In the Global North, the consolidation and intensive use of rural landscapes, leaving little room for Biodiversity to stabilise.

The World Bank projects that partial biodiversity loss could lead to an overall global loss of 2.3% of GDP[8]. However, this loss would not be evenly distributed, with 10% losses affecting low-income, 7.3% losses affecting lower middle-income, 3.6% affecting upper middle-income, and only 0.7% high income countries.

Our economy relies on many ecosystem services, from pollination of crops by native beetles, bees, and moths, to coastal erosion prevention, and the potential for the discovery of new drugs and active ingredients. PWC estimates potential for the discovery of new drugs and active ingredients. All are framed as positive externalities and as such most likely not captured in prices.[9]

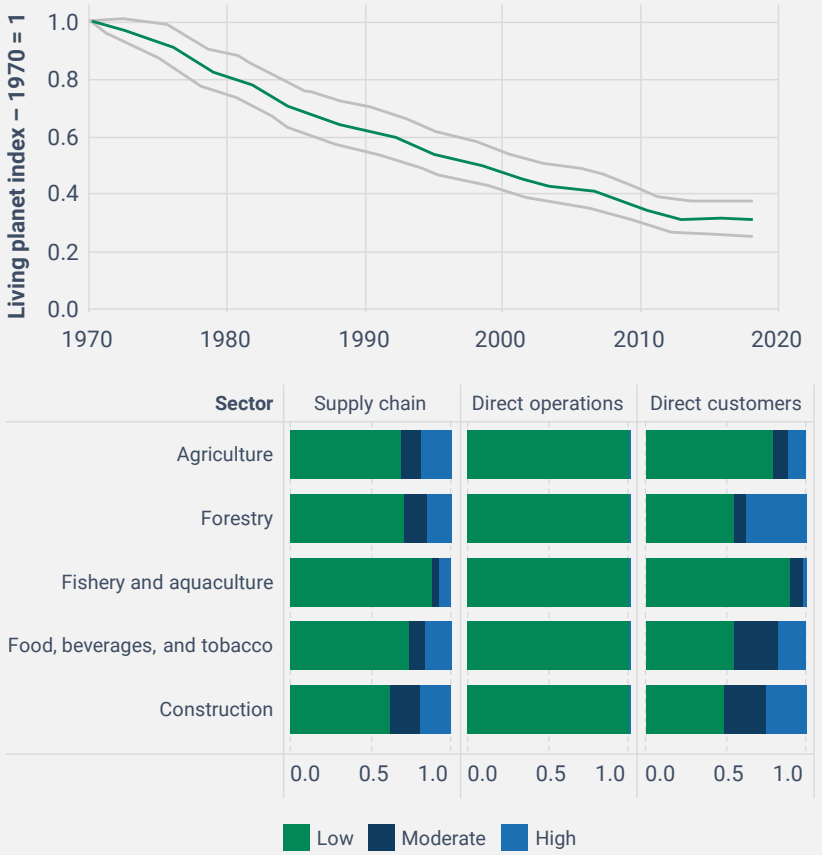


Figure 3: *Top – Living planet index indicating the decline of select vertebrate populations from 1970 to 2019.*
Bottom – sector dependency to biodiversity across value chain (% of GVA)
Data collated by PFP.

7. Source: WWF, Zoological Society of London, International Panel for Biodiversity and Ecosystem Services.
8. World Bank (2022) – Securing our Future Through Biodiversity
9. PWC (2023) – Managing Nature Risks

THE PEOPLE AND THE PLANET

On Water scarcity.

Water scarcity is one of the potential outcomes of Climate Change and Biodiversity loss, potentially manifesting in floods and droughts. It is important, however, to avoid correlation/causation traps, and subject extreme weather events links to climate change to appropriate scrutiny.

A good example of how attribution science is demonstrated is with the 2022 European droughts, which were exacerbated by climate change[10], hitting a landscape that has been intensely used both biodiversity and water wise.

Currently the western Mediterranean's combined drought indicators are reaching severe-to-extreme conditions in May 2023, worse than in 2022[11]. This potentially means that Europe could be reaching a tipping point. The continent did not rely on irrigation for most of its agriculture and not it might have to build infrastructure to adapt to a new climate norm.

The inverse of drought, storms and floods can cause significant damage. The restoration of watersheds with both physical and biodiversity improvements can play a significant role in improvement of water quality and damage prevention.

Some estimates indicate circa USD 65 billion losses for 15 million people could be avoided every year by mangroves.[12] Beyond the immediate impact of floods, rising sea water can contaminate underground water, compromising arable soils and potable water. Most of this impact will be felt in the global south, but with direct ramifications for supply chains and geopolitical stability.

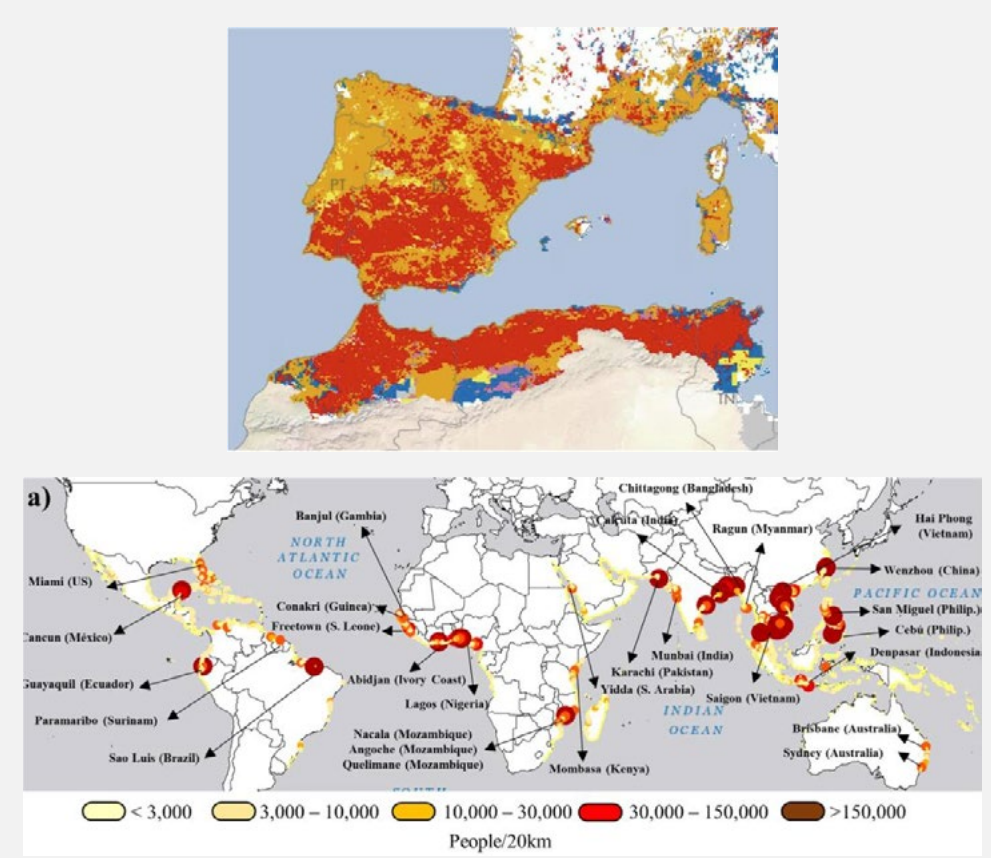


Figure 4: *Top – Western Mediterranean drought alert for May 2023 – warning conditions in orange, alert in red – GDO/EU.*
Bottom – population protected by mangroves in multiple regions – Menéndez et al. (2020).

10. World weather attribution
11. EU Commission – Global Drought Observatory (GDO), May 2023
12. Mene ndez, et al. (2020) – The Global Flood Protection Benefits of Mangroves

THE PEOPLE AND THE PLANET

What about the People?

Inequality compounds with the three issues outlined above. Those that are less prosperous in the global south and the global north tend to contribute less to these issues and have limited capabilities to adapt.

UNEP's review of global absolute and per capita GHG emissions are good evidence of how China and India have been increasing its absolute emissions, but in per capita terms are still below countries like US and Russia[13].

In +2˚C warming scenarios the world could see ~200 million people being displaced within their own countries by 2050. The majority of these people are located in the global south, with less than 5 million displacements projected for Europe and Central Asia[14].

Effectively, the greatest concern that emerges for People are linked to the long-term disruption of socioeconomic systems that could escalate in wider local and regional conflicts with global repercussions.

Beyond these negative scenarios, **there is substantial upside if existing and future plans for adaptation and transition materialise.** The IEA projects a net creation of ~10 million jobs from announced pledges (countries and corporates) and ~22 from net zero scenarios[15]. The EU Fit for 55 and European Green Deal is projected to create 1 million jobs by 2030[16] and the IRA led to the announcement of over 100 thousand new jobs by clean energy companies[17].

By investing in companies and technologies that will tackle the three environmental challenges, PFP will accelerate the creation of sustainable jobs and help in mitigating and adapting societies to the new norm.

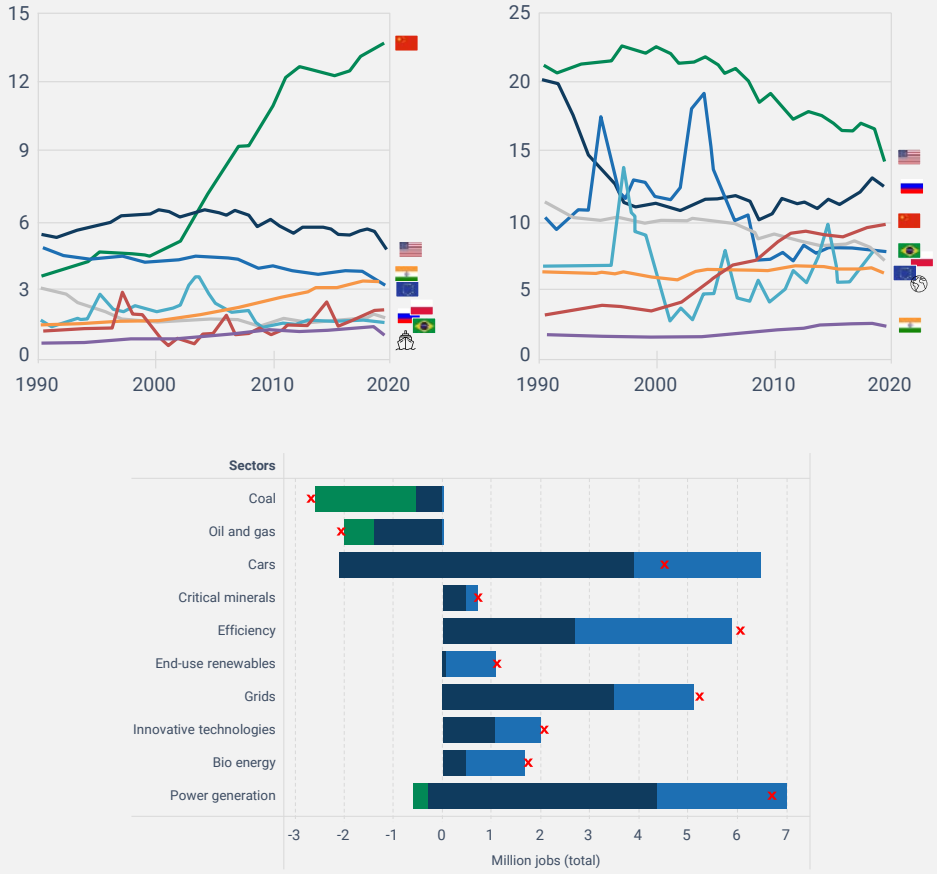


Figure 5: *Top – UNEP projections GtCO2eq total (left) and per capita (right) Bottom – IEA job creation scenarios with announced pledges of GHG reduction (blue) and net zero scenarios (yellow)*

13. UNEP (2022). Emissions Gap Report 2022: The Closing Window
14. Clement, Viviane et al, 2021 (World Bank) Groundswell Part 2
15. IEA (2021), Energy Outlook
16. Cedefop (2021). The green employment and skills transformation: insights from a European Green Deal skills forecast scenario
17. Climate Power (2023), Clean energy boom

OUR APPROACH

The EU Sustainable Finance Framework

Our choice has been clear from the start: to be sustainable investors. To achieve this we chose to adopt the EU Sustainable Finance Framework (SFF), operating with its double materiality approach[18].

Double materiality is demonstrated by corporates delivering a substantial contribution to one sustainability issue whilst doing-no-significant-harm to any other sustainability issues. Financial institutions demonstrate it by aligning their investment strategies and financial products with corporates or projects that are on their own also aligned with this logic.

The EU SFF innovated by:

- Guiding the deployment of financial resources for the EU to achieve its Green Deal and in turn its SDGs.
- Empowering asset owners to ask for greater clarity on sustainability.
- Mandating financial institutions to disclose sustainability with greater detail and clarity.
- Defining what constitutes a sustainable investment and developing the guidance for how to measure, report, and verify alignment.

The SFF is comprised of three regulations: Sustainable Finance Disclosure Regulation (SFDR), EU Taxonomy for Sustainable Activities, and Corporate Sustainability Reporting directive (CSRD).

The SFDR is the backbone of the SFF and defines three classes ofsustainability linked disclosures or fund operations – no commitment to sustainability (disclosing only aspects of adverse impact), partial commitment to sustainability (defined in Art. 8 of the regulation), and sustainable investment (Art. 9, full commitment to double materiality).

The CSRD will gradually bring ~49 thousand EU based companies and ~12 thousand non-EU companies under the remit of the SFF. Roughly 11 thousand EU companies[19] will be reporting by the end of 2024. The next five years will see smaller companies coming into scope and the approval of European reporting standards.

Shades of green in sustainable investments...

Article 9 Fund	Investments in sustainable activities that • Provide a **substantial contribution** to an environmental objective • Do no significant harm to any other environmental objective • Consider principal adverse impacts on sustainability factors
Article 8 Fund	Investments in activities that • Promote some environmental characteristics • Consider principal adverse impacts on sustainability factors

Figure 6

18. Delgado-Ceballos, et al (2023). Connecting the Sustainable Development Goals to firm-level sustainability and ESG factors
19. Initial mandatory reporting threshold set for companies with ≥500 FTEs, and ≥€20 million balance sheet or ≥40 million turnover.

OUR APPROACH

The EU Sustainable Finance Framework

By 2028, the full remit of the CSRD will be in effect, including a requirement for the provision of assurances for all the data reported.

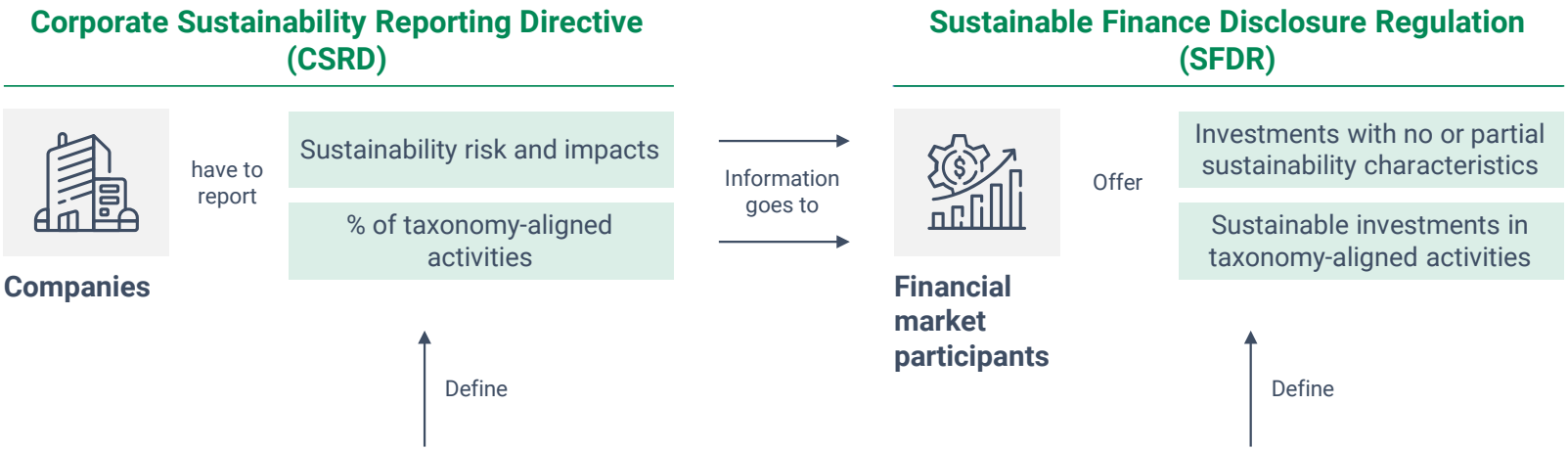
The EU Taxonomy connects the CSRD and the SFDR by introducing the European Environmental objectives with associated ambition levels, and the technical screening criteria for the assessment of substantial contribution and no-significant-harm features of economic activities. It also creates the Platform on Sustainable Finance to support the commission in developing the technical screening criteria and a social taxonomy.

Ultimately, the SFF creates three pathways for Article 8 or 9 funds to disclose their alignment with sustainability:

a) The adoption of an index designed as a reference benchmark for social or environmental objectives.

b) Targeting the reduction of carbon emissions at a portfolio level (in alignment with EU Climate Transition or Paris Benchmarks).

c) An explanation of how the investment is attaining the social or environmental objective if no index is adopted.



- A **common classification** of economic activities significantly contributing to environmental objectives
- Underpinned by technical screening criteria that **define what is sustainable** – and what is not sustainable – in the EU
- Provides the **benchmark** against which companies and investors need to measure and disclose their sustainable activities

OUR APPROACH

The EU Sustainable Finance Framework

Pathways a) and b) have been developed for public markets to-date targeting only climate change. Pathway c) focuses on the economic activities developed by corporates and requires the direct assessment of substantial contribution and no-significant-harm of social or environmental objectives.

Economic activities are assessed for delivering a substantial contribution directly to sustainability (i.e., manufacturing green hydrogen,) or directly enabling another economic activity to do so (i.e., manufacturing electrolysis equipment for the manufacturing of green hydrogen). The EU has also recognised the contribution of "transitional activities" when there are no viable technical economical alternatives.

On the chart to the right we have summarised the EU approach: setting thresholds for substantial contribution and significant harm that will be made more stringent with time. Activity 1 delivers a substantial contribution directly and activity 3 enables transitional activity 3. Activity 4 does not deliver a substantial contribution nor causes significant harm. Activity 5 causes significant harm.

The real change implemented by the SFF in the impact or sustainable investment world was the introduction of set of rules to assess if a corporate or a financial institution can make claims on sustainability. This change was portrait initially as mere semantics, and later on criticised as unstable and impossible to implement.

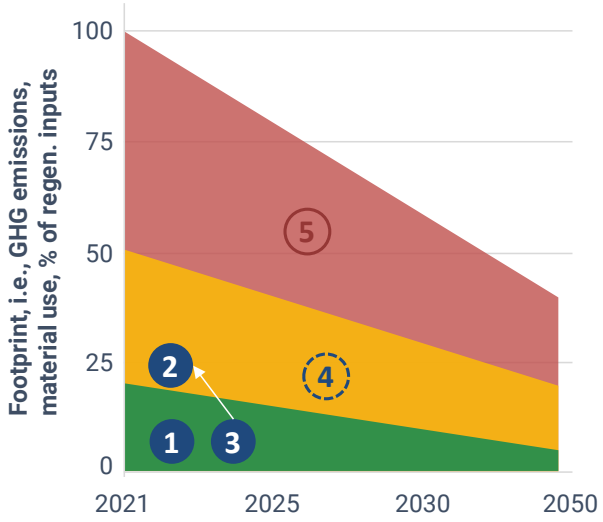
We agree that implementing the SFF means additional work for corporates and financial institutions. However, we believe that the benefits outweigh the burden. Furthermore, we do not agree that there is instability in the regulations.

It has been clear since March 2021 that investment strategies exposed to activities causing significant harm (i.e., oil and gas production) would not be allowed to be classified as sustainable. Doing so was a gamble and potentially a breach of fiduciary duty by financial institutions.

The European Union is advancing with the development and implementation of the SFF. In 2022 it linked the MiFID 2 Regulation, requiring financial product development and advisory to clearly consider sustainability disclosure and client preference.

In 2023 the EU Commission will launch new delegated acts with additional EU Taxonomy criteria and enact the European Sustainability Reporting Standards. This will bring more clarity for full reporting under the CSRD.

The EU has clearly signalled that green finance is not expected to cover the whole of the economy[20]. It is expected, however, to enable the transition of a larger part of the economy to be aligned with its sustainability objectives. Large corporates are legally required to implement transition plans, i.e., how they will lower GHG emissions to comply with EU Paris targets. This will create a demand for economic activities (products and services) that enable corporates to transition.



20. EU Commission recommendation on transition finance

OUR APPROACH

The EU Sustainable Finance Framework

PFP's investment mandate targets companies that are on the verge of coming under the full remit of the SFF. **Our portfolio companies will be leaders in the operationalisation of the SFF, firmly positioned as sustainable companies. But more importantly, we will help accelerate the growth of the companies delivering the products and services that enable the transition towards sustainability.**

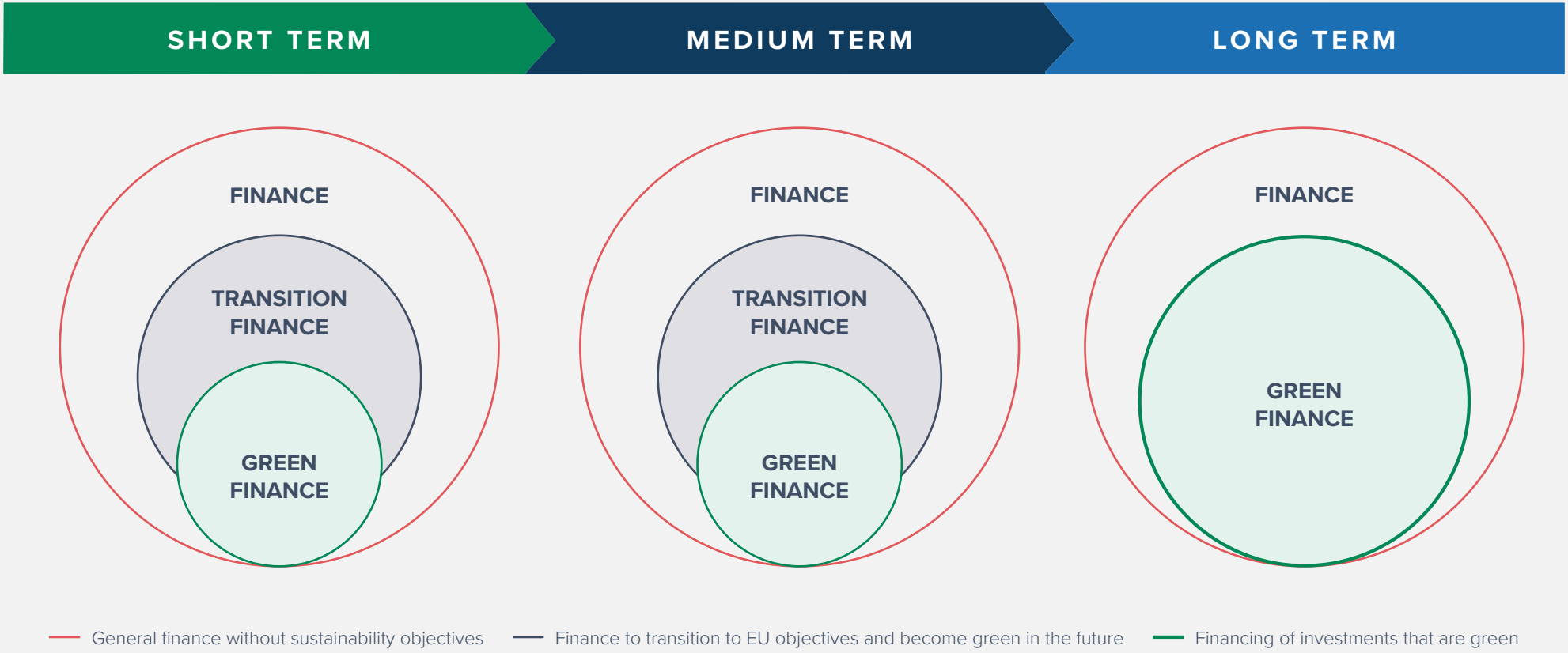


Figure 9: *Short-, Medium- and Long-term scenarios for green and transition finance. Source: EU Commission.*

OUR APPROACH

How we do it

PFP developed a proprietary Sustainable Assessment Methodology (SAM) to identify companies delivering substantial contributions to sustainability and assure that the investment and post-investment process will meet compliance requirements. More importantly, our approach is designed to support our portfolio companies in creating value from sustainability.

The SAM incorporates the EU Taxonomy (both legally enacted and proposed), the Principal Adverse Impact factors, and the SDGs and the Impact Management Project. It also incorporates the latest advice of the EU Commission on how to assess contributions to social objectives, as well as the advances in the development of new EU Taxonomy criteria.

The initial deployment of our approach for company identification and subsequent diligence can be summarised in three steps:

1) Operations, Products, and Services: We assess the impacts of operations, products, and services on key environmental and social issues to select companies that provide solutions to the defining sustainability challenges of our time.
2) Value chain: We consider the impacts and dependencies of companies across the full value chain – from the sourcing of raw materials to the end-of-life management of products. This helps us assess aspects of significant-harm to sustainability objectives as well as minimum safeguards (business ethics and labour issues)
3) Sustainable Taxonomies: We confirm alignment of the company's economic activities with the EU Taxonomy for Sustainable Activities or with PFP's approach for social sustainability.

Figure 10

OUR APPROACH

How we do it

The outcome of the three steps is delivered as a Sustainability Thesis and the Sustainability Management Plan (SMP). The Sustainability Thesis guides the formulation of all the hypothesis that need to be tested during the diligence process to determine if an investment target meets our sustainable investment mandate. It also enables our team to systematically map the KPIs needed to be measured (both on SC/DNSH and PAI) and additional sustainability factors that need tracking.

The Sustainability Management Plan reflects the outcomes of the due diligence process and incorporates all the KPIs identified during the assessment. We design these plans to support the company in the most efficient way to integrate sustainability in their operations. This includes a fine-tuned discussion of the materiality of sustainability topics vis a vis compliance requirement as well as value creation opportunities.

PFP runs a differentiated growth investment process, integrating sustainability into everything we do. Our dedicated sustainability team work alongside the investment team throughput the entire investment cycle, from sourcing and due diligence to investment, portfolio management and divestment.

Our team works hands-on-with portfolio company's management to find external support, collect and analyse data, monitor the regulatory and market landscape, package sustainability data in preparation for new fundraise processes, and to collect data for annual KPI reporting.

	1. Pipeline entry	2. Preliminary DD	3. Confirmatory DD	4. Post DD
Investment Team	Initial contact & meeting	Understand the opportunity in much greater detail	Diligence and structuring	Value Creation Plan Implementation
	• Reach out based on deep-dives, or connect via ecosystem introduction • Assess against investment	• Sign NDA, get more date and meet management, refininf initial analysis • Draft LOI & term sheet	• Conduct DD (~8 weeks) on all aspects of the company • Work with CEO, investors and management to structure a workable deal	• Work "Hands with" in the business alongside management • Report KPIs & refine plan
	Determine fit with Planet First investment criteria	Present deal to IC to approve LOI and term sheet release	Present deal to IC, including findings from DD, for approval	Biannual and yearly report
Sustainability Team	Vertical Fit	Preliminary impact thesis	Stress test impact thesis	Sustainability Management Plan Implementation
	• Farm to Fork; Energy Transition; Industy 4.0; Green Cities	• Potential for substantial contribution to social to social and environmental objectives • Assessment of company and outline DD	• Contribution + do-no-significant-harm criteria (SC/DNSH) • Outline PAI+ and SC/DNSH KPIs MRV routine • Sustainability management plan	• Measure, Report and Verifiy KPIs, identify and correct issues to guarantee SC/DNSH
	Assess potential for contribution to sustainability	Confirm mandate alignment	Confirm potential SC/DNSH	Biannual and yearly report

Figure 11

OUR APPROACH

How we do it

Alignment of compensation with impact & sustainability

Twenty-five percent (25%) of the carried interest remuneration of the General Partner is linked to the achievement of the pre-defined sustainability milestones and portfolio performance (alignment with EU Taxonomy, as approved by the Sustainability Committee.)

Independent verification process

BlueMark[21] independently verified PFP's SFDR alignment and disclosure readiness as well as the quality and completeness of our sustainability management systems. Bluemark's key findings:

1. PFP has implemented a sustainability management system with all necessary components in place to screen investments for EU Taxonomy alignment and comply with all relevant SFDR disclosure requirements for an article 9 fund.
2. PFP's sustainability management system is strong considering the early stage of its development. There are opportunities to strengthen some elements of the system to align with best practice.

Following BlueMark's recommendations, PFP will further enhance its impact management system by implementing the following steps:

- Strengthen the documentation of a thematic-level sustainability thesis for each of the four investment verticals.
- Consider upgrading data management capabilities by adopting purpose-built tools to facilitate portfolio-level management and comparison once the number of companies grow.
- Strengthen the modelling of the links between commercial and sustainability success.

BLUE/MARK

Verifier Statement

Independent Verification Report

Prepared for Planet First Partners: 09/12/2022

Introduction

Planet First Partners engaged BlueMark to undertake an independent diagnostic assessment of Planet First Partners' SFDR disclosure readiness and an assessment of Planet First Partners' impact management (IM) systems against industry best practices. BlueMark's conclusions are intended to provide Planet First Partners with learning output on the quality and completeness of its IM systems.

Summary assessment conclusions

BlueMark has independently verified Planet First Partners' SFDR disclosure readiness as well as the quality and completeness of its IM systems. Key takeaways from BlueMark's assessment are as follows:

SFDR disclosure readiness: BlueMark's review has found that Planet First Partners has the necessary policies and systems in place to screen investments for EU Taxonomy alignment and comply with all relevant SFDR disclosure requirements for an Article 9 fund.

Strategic Intent: Clarity of Impact Strategy: Planet First Partners has set clear sustainability objectives set in line with SFDR requirements. To improve, the firm could more explicitly document a thematic-level impact and investment thesis for each of the four verticals.

Strategic Intent: Portfolio-level Impact Management: Planet First has designed a comprehensive SFDR-native impact assessment methodology that it uses to assess the impact of investments across its portfolio. To improve, the firm should implement tools to enable portfolio-level impact management and comparison.

Origination & Structuring: Impact Assessment: Planet First has developed an impact assessment process to ensure each investment fits within the EU Taxonomy and determines appropriate 'Substantial Contribution' KPIs for each. To improve, the firm should set projections, and where possible, targets for the 'Substantial Contribution' KPIs for prospective investments where there is an expectation that impact will be closely linked to commercial performance.

Origination & Structuring: Investor Contribution: Planet First has developed a robust investor contribution strategy, developing Sustainability Management Plans to articulate and monitor its contribution to the impact of investments. Multiple levers for contribution are employed, including technical assistance and capacity building.

Origination & Structuring: ESG & PAI Risk Assessment: Planet First has developed processes to assess the DNSH, PAI, and other ESG risks for each investment. To improve, the firm should ensure standardisation and consistent application of ESG assessment tools and align ESG KPIs with industry standards.

Portfolio Management: Impact Monitoring: Planet First has set out clear expectations in its policy documentation for monitoring KPIs and the firm works directly with investees to enable PAI data collection. To improve, Planet First should develop processes to enable comparison of actual impact performance versus expectations.

Portfolio Management: Impact Review: Planet First regularly reviews the sustainability aspects of its investments via quarterly updates and operational reviews. To improve, Planet First should incorporate an assessment of each investment's sustainability performance into these, and regularly capture lessons learned.

Impact at Exit: Planet First has outlined a process to ensure the impacts associated with its investments are maintained after exit. To further improve, Planet First should develop a formal exit process, including tools to enable the assessment of each investment's sustainability at exit.

Figure 12

21. BlueMark, a Tideline company, is a leading provider of impact verification services in the impact investing market. BlueMark was founded with a mission to "strengthen trust in impact investing" and to help bring more accountability to the impact investment process.

OUR PORTFOLIO

Overview

We currently hold two companies and one ecosystem investment in our portfolio.

PFP invested in Sunfire and Submer in 2021, following our core investment strategy of sustainable growth-stage companies. Both companies were submitted to our full diligence process, including the deployment of our Sustainability Assessment and Management (SAM) process. We are currently implementing the sustainability management plan for both companies and will present the details on the sector and sustainability results in the next section.

Eka VC, our ecosystem investment, was warehoused in Generation P and, as per shareholder agreement, was transferred to PFP in December 2022. Our ecosystem strategy allows PFP to deploy up to 15% of commitments to sustainable investments with an earlier stage investment mandate. The caseof Eka constitutes a fund-of-funds strategy, which required us to adapt the deployment of the SAM and our post-investment strategy.

Our 2022 Sustainability report presents data on Sunfire and Submer for the first reference period of reporting under SFDR: 1st of July to 31st of December. The SFDR regulatory filings can be found in Annex 1 of this report.

We will present an overview of Eka's portfolio, strategy for alignment with sustainable investment strategy and expect to report additional data on their aggregate portfolio in our next annual report.

OUR PORTFOLIO

Sunfire

Why are we excited about Hydrogen?

Hydrogen is the most abundant element in the universe. Global production peaked in 2021, reaching 94 million tonnes, with 99% of it coming from fossil sources (grey from natural gas, black/brown from coal)[22]. As a result, total GHG footprint of H_2 manufacturing reached 900 million tonnes in 2021.

The global production of H_2 needs to be decarbonised. The current use of H_2 represents a substantial market. An even greater demand will emerge from potential new uses of H_2 such as green steel, synthetic aviation fuel and longduration energy storage.

Two critical clarification points:

Red, blue, green H_2 – any colour can be considered sustainable as long as life-cycle footprint is well under 3 t CO_2e/t H_2 and there is no significant harm/risk to other sustainability issues:

- Blue is produced from natural gas, dependant on its availability (not the case for Europe)[23]
- Red (or pink) is produced using with nuclear electricity with assured low carbon status. Controversies are associated with the of nuclear power (and nuclear waste disposal) perceived or actual risk to sustainability.
- Green is produced via water electrolysis. Low carbon status is linked to electricity input footprint. Controversies are associated with its use of clean electricity competing with other electrification uses.
- White or golden hydrogen also exist – both are naturally occurring deposits linked to geothermal or radioactive formations. Little availability when compared to natural gas, and its use carry the risks associated with leakage.

H_2 is a potent GHG (20x the radiative forcing of CO_2) – manufacturing and transportation must account for leakage risk.

- Leakage could negate climate benefits entirely for blue and lower benefits for green H_2[24]. Local manufacturing lowers risk and is potentially cheaper[25]

The global green hydrogen market has grown 1.5x since we invested in Sunfire. It is estimated to reach €50bn until 2030[26]. There is a clear momentum for electrolysers production, with over 1.2GW of capacity shipped in 2022, up 160% y.o.y[27] and expected to increase to ~3GW in 2023.

Announced electrolyser projects from developers increased from 90GW to 175GW globally, and planned electrolyser manufacturing capacity is expected to grow from under 10GW/y in 2021 to 60GW/y in 2030.

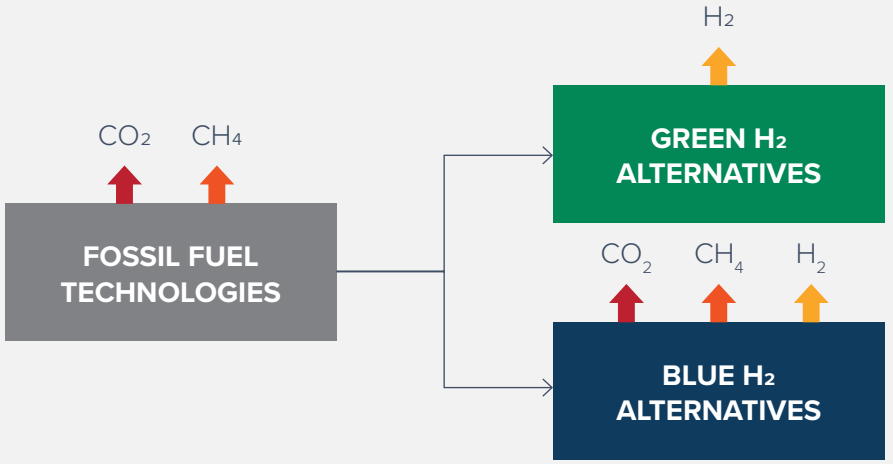


Figure 13: Outline of climate forcers emitted by H_2. Ocko and Hamburg

22. Hydrogen Council and McKinsey (2023): Hydrogen Insights 2023.
23. Howarth and Jacobson (2021) How green is blue hydrogen
24. Ocko and Hamburg (2022) Climate consequences of hydrogen emissions
25. Galimova et al (2023) Impact of international transportation on cost of green e-hydrogen
26. Hydrogen Council and McKinsey (2023): Hydrogen Insights 2023.
27. BloombergNEF (2023)

OUR PORTFOLIO

Sunfire

The European green hydrogen market is estimated at €18bn by 2030, with growth driven by regulatory targets and decarbonisation agendas. Thanks to the Repower EU, the planned green hydrogen production targets increased from 5 to 20 Mt/y in 2022, with an emphasis on reducing reliance on Russian natural gas.

On the other side of the Atlantic, US political support is unprecedented, with the IRA providing production tax credits of €3/kg investment tax credit of up to 30% for green hydrogen facilities, as well as a €9.5bn subsidy programme for hydrogen hubs, (conditioned to GHG footprint efficiency). Initial reaction shows a rapid acceleration of blue and green H_2 projects being announced (top chart – committed, planned, announced colour gradient).

The US has abundant natural-gas reserves, so the economics of blue H_2 manufacturing seem attractive at a first glance. It remains unclear, however, if the full implementation of the IRA will allow for untested and unproven methane leakage prevention and CCS technologies to be acknowledged when estimating the H_2 footprint in the application of tax credits.

The EU responded to the IRA with the announcement of additional policies (i.e., RED II directive and Hydrogen Bank) that are further accelerating announcement of electrolysis projects. The difference between the two geographies is evident in terms of projected capacity of electrolysis manufacturing.[28]

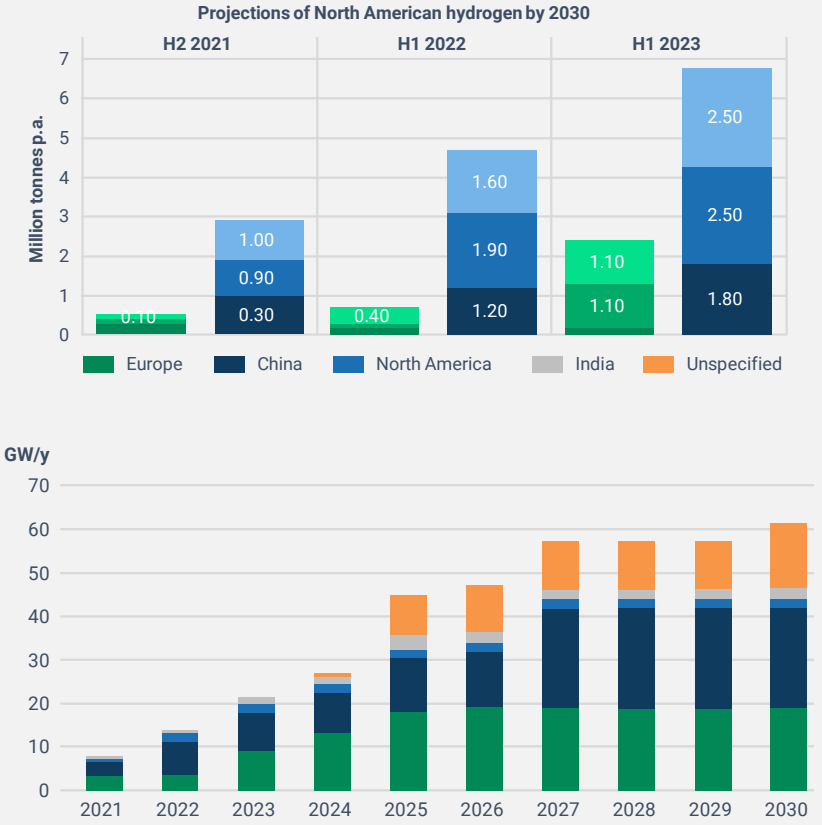


Figure 14: *Top – green and blue hydrogen production in North America – adapted from Hydrogen Council (2023)*
Bottom – electrolyzer capacity projections 2021-2030, IEA (2022)

28. IEA (2022) Planned electrolyser manufacturing capacity by region, 2021-2030

OUR PORTFOLIO

Sunfire

EU Taxonomy framing

Sunfire develops and manufactures Alkaline (AEL) and Solid-Oxide (SOEC) electrolysis equipment. We have framed the company under the EU Taxonomy as contributing to Climate Change Mitigation activity 3.2 (Manufacture of equipment for the production and use of hydrogen) enabling activity 3.10 (Manufacturing hydrogen).

In order for Sunfire to be considered EU Taxonomy aligned, all H_2 manufactured with its electrolysers must have a GHG footprint lower than 3 tons of CO_2eq/ton of H_2. These thresholds have been incorporated into the updated RED II approved in June 2023.

The EU threshold represents a target reduction of 73.4% compared with Grey H_2 GHG emissions set in alignment with EU Paris plan. The US IRA sets a range of thresholds for minimum and maximum tax credit concessions, with maximum concessions requiring ≤1.5 tCO_2/tH_2 footprint. If Sunfire launches operations in other geographies, we will adapt the EU threshold considering local regulation (i.e., the US IRA) and local H_2 manufacturing footprint.

Sunfire results: company is 100% EU Taxonomy aligned.

Sunfire ended 2022 in a strong position, having contracted €29.6mio of revenues across 4 key projects for 2023. Installed and operational capacity in the reference period (Jul.-Dec. 2022):

- SOEC – 1.6 MW
- AEL – 3.2 MW

Projected deployment in 2023:

- SOEC – 1.1 MW in two projects
- AEL – 60 MW in three projects

The Sustainability Management Plan prioritised the development of a lifecycle assessment (LCA) for the AEL modules and the implementation of sustainability governance measures.

LCA assessment of AEL modules were carried out assuming operations using renewable electricity (wind), resulting in a total footprint of 0.58 tCO_2/tH_2, with 83% of emissions associated with operations (water KOH and electricity). This is evidence that there is margin for Sunfire's AEL units to operate with mixed energy grid from countries like Sweden, Finland and France.

Estimated GHG savings per use case (green H_2 replacing conventional fossil-fuel based process) are represented above, with Grey H_2, Ammonia, Methanol and Industrial heat representing a reduction of 99% and Steel 88%.

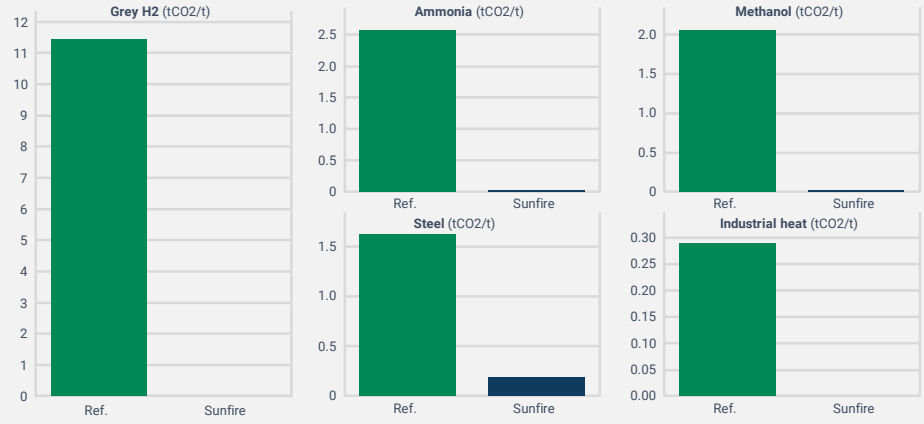


Figure 15: Projected GHG footprint for multiple applications of H_2 produced with Sunfire's technology. Data from company LCA, complied by PFP

OUR PORTFOLIO

Sunfire

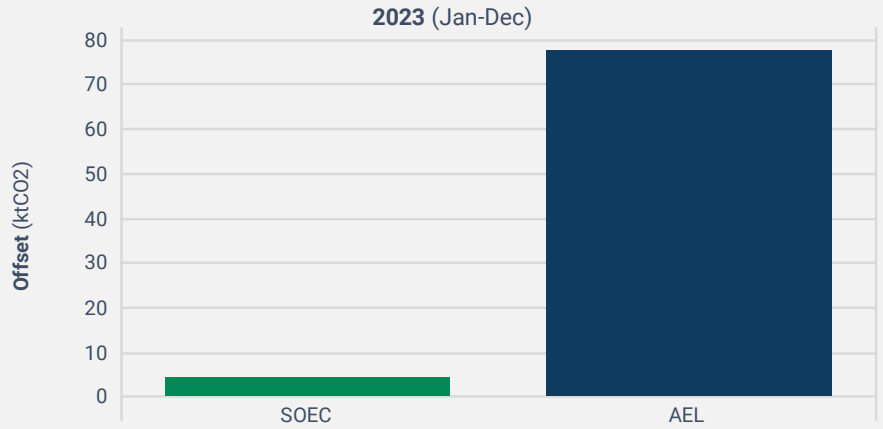


Figure 16: Projected GHG offset for Sunfire's operations. Company data, complied by PFP

Estimated GHG offset by SOEC and AEL operating units in 2022 were modest (≤1kt CO_2eq). Operations in 2023 (assuming grey H_2 replacement year-round operations) could reach a total offset of 80 kt CO_2eq.

Sunfire added 138 FTE green jobs to the economy in 2022.

Do-no-significant-harm overview.

Climate adaptation	Sunfire's units are not materially exposed to climate risks. Monthey's unit is exposed to heatwaves and Solingen unit is close to areas recently affected by floods on the Rhine valley. Both risks are considered immaterial and can be easily mitigated.
Water	The company is fully compliant with water extraction and use regulations. Sunfire's units, key suppliers, and clients (existing and pipeline) are not located in areas with high or extremely-high water stress[29].
Circularity	Sunfire is incorporating circularity into product development, with the potential for 60 to 70% by weight of stack and balance of plant to incorporate re-used or recycled parts. Waste management procedures at all Sunfire sites comply with local regulation.
Pollution	Company products do not introduce restricted substances like Asbestos on the market.
Biodiversity	Sunfire operations do not required EIA or similar instrument before installation. Neither Company units nor tier 1 supplier were found to be potentially negatively affecting areas relevant for Biodiversity.
Minimum safeguards	Company and tier 1 suppliers operate in low-risk geographies for human rights and labour rights violations. Company is rolling out new supplier code of conduct in 2023 to incorporate additional checks, including biodiversity. Sunfire hired new head of compliance to implement ACB and code of conduct policies in December 2022.

Principle Adverse Data reported as per Sustainability Management Plan and incorporated in PFP's regulatory filings (Annex 1).

What to expect in 2023?

Sunfire is accelerating operations and preparing to engage with new raise process. PFP provided support for the company to develop the documentation and integrate sustainability into the process. We expect new investors to benefit from the structured sustainability narrative, facilitating diligence and securing sustainable investment credentials.

In terms of new developments, we expect to work with the company on the field testing of the new SOEC design (with an updated LCA to be developed in the next 36 months) and accelerate the development of the company's supply chain policy.

29. https://www.wri.org/aqueduct

OUR PORTFOLIO

Submer

Why are we excited about data-centre cooling?

Modern developed economies rely heavily in their digital infrastructure to maintain continuous and healthy growth. PFP believes that there is no socioeconomic development without the expansion of this digital backbone.

For this development to be sustainable, data-centres need to expand with a lower energy footprint, and to reach new geographies.

The IEA estimates that data-centres used ~220tWh in 2021, representing 0.9% of global energy related GHG emissions to service ~4.9 billion internet users with 3.4 zettabytes[30]. As chip processing capacity increases, so does heat generation. Cooling requires a substantial use of energy, and new generations of processors are limited by the capacity of air to conduct heat.

Global measurements of Power Use Efficiency (PUE) have dropped to ~1.6 by 2012 and have not changed much in the past 10 years (see chart on the right, Uptime Institute data). This means that there is still a 66% energy inefficiency, almost entirely linked to cooling.

Data by the Uptime institute indicate that 49% of the industry has adopted net-zero commitments, and that 44% aim at achieving it by 2030[31]. However, this pathway is mostly being achieved by relying on carbon offsets.

Companies like Amazon and Microsoft have been ahead of Total as acquirers of renewables between 2010 and 2021.

Projected compound annual growth of 5.4% by 2030 for spending in datacentre construction (USD billion/y, bottom chart[32]) will add pressure to netzero commitments. It is unlikely that carbon offsets will be able to cover the expansion. Also, Scope 3 GHG reporting will increase pressure to lower energy use.

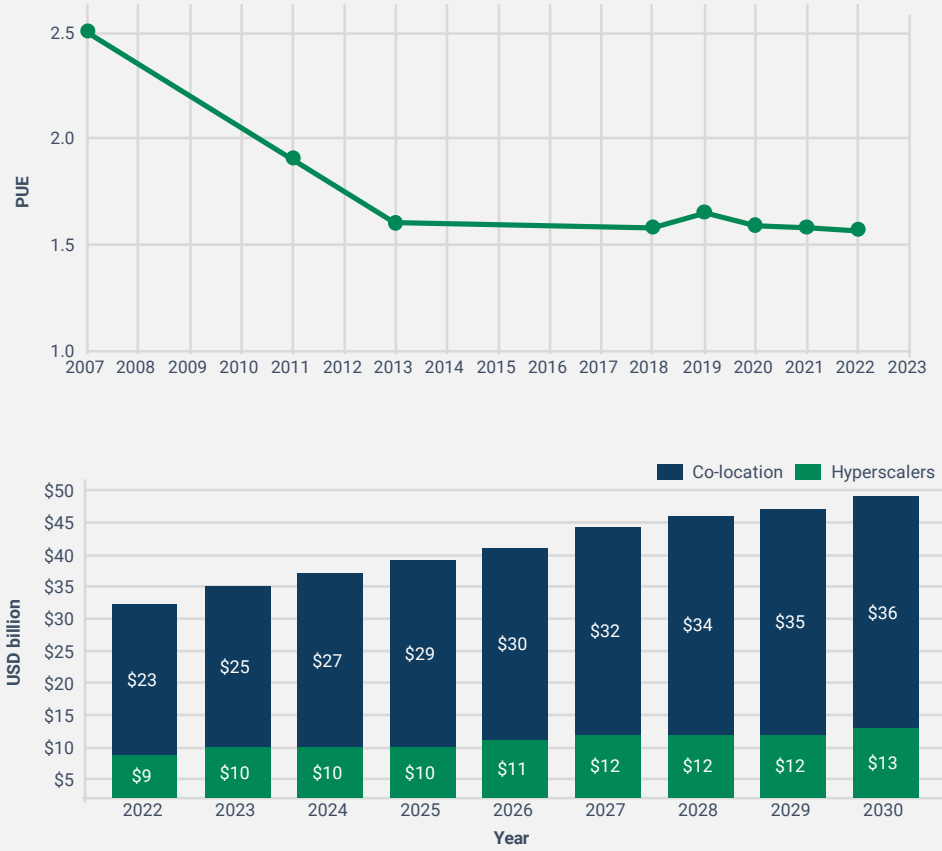


Figure 17: *PUE projections. Data by Uptime Institute, compiled by PFP*
Bottom – investment projections for data centers in North America. Data by McKinsey, compiled by PFP

30. IEA (2022), Data Centres and Data Transmission Networks
31. Uptime (2023) Unravelling net zero
32. McKinsey (2023) Investing in the rising data centre economy

OUR PORTFOLIO

Submer

Direct liquid cooling (DLC) is one of the key solutions to enable at the same time the expansion of processing capacity (replacing low conductivity air for specialised fluids) and lowering considerably PUE.

DLC has been in the market for several years, with single and dual phase liquid cooling systems. Dual phase systems have recently met a major setback with the announced PFAS production permanent shut-down by 3M. Single phase systems rely mostly on synthetic fluids and can be deployed in conventional racks, direct-to-chip, or in several forms of immersion with active or passive circulation.

DLC offers data-centre operators the possibility of lowering PUEs to 1.1 or even 1.03, achieving close to 90% energy efficiency. These substantial gains are a result of an improvement in thermal conductivity when compared to air-based cooling systems that can, at best, reach PUEs of 1.5.

Awareness over DLC systems and willingness to adopt have improved, with 57% of DC operators believing that air will be replaced in the next 4 to 6 years (up 9% from 2021). Key constrains for a more rapid adoption are lack of standardization and ease to retrofit existing facilities[33].

It is expected that smaller scale deployment with conventional racks and direct-to-chip will dominate retrofits for now, whilst new-builds and highdensity computing will see a faster uptake of immersion cooling.

Beyond energy consumption, DC operations can also consume large volumes of water. This is associated with an alternative to conventional chillers, reducing energy consumption but exacerbating the use of potable or nearpotable water.

Data-centre expansion is becoming an increasingly rival use of energy. The data above shows the rapidly growing energy use in GW/y for different types of DC operators1. Irish data centre metered energy consumption jumped from 5% to 14% between 2015 and 2021 in Ireland[34].

The Irish Government, different from a suspension as in the Netherlands and Singapore, proposed the adoption of efficiency measures to prevent rivalry for renewable energy use. The EU and other geographies will soon implement overarching legislation to require minimum PUE levels as well as the reuse of waste heat.

The combined effect of local regulations, the first reference period for the European Energy Efficiency Directive (EED), the CSRD and the SFDR Scope 3 GHG emissions reporting requirements will represent substantial tailwinds for direct liquid cooling.

33. Uptime (2023) Direct liquid cooling shows promise, but challenges persist.
34. Ireland (2022), Central Statistics Office

OUR PORTFOLIO

Submer

EU Taxonomy framing

Submer manufactures liquid immersion cooling equipment for the ICT industry. We have framed the company under the EU taxonomy as contributing to Climate Change Mitigation activity 3.6 (Manufacture of other low carbon technologies) enabling activity 8.1 (Data processing, hosting, and related activities).

In order for Submer to be considered EU Taxonomy aligned, the GHG emissions savings offered by the adoption of the technology have to be verified against incumbent via an LCA, and the enabled data-centre has to demonstrate that it is implementing all relevant expected practices outlined in the European Code of Conduct on Data Centre Energy Efficiency[35] or CENCENELEC document CLC TR50600-99-1[36].

Different from Sunfire, this technical screening criteria is rules-based, requiring Submer to develop a peer-reviewed LCA to calculate potential offset and verify compliance with practice code. Effectively, the adoption of liquid immersion cooling is considered a future step, beyond current expected practices.

Submer results: company is 100% EU Taxonomy aligned.

Submer ended 2022 with great progress in its commercial pipeline for both hyperscalers and on the crypto clients. The company has almost completed the transition to a new HQ and manufacturing site, accelerated by a no-fault/ no-injury fire involving a test unit. The new site will have a 30MW manufacturing capacity and expanded office and R&D space.

The company delivered 32.6MW of power. SmartPod (22 units) and Micropods (18) respond for 1.4 MW, Crypto (39) represent 31.2MW.

Submer's sustainability plan prioritised the development of its LCA covering three basic pod configurations: micropod, smartpod, and megapod. The total system efficiency and overall footprint was mostly dependent on the footprint of the electricity used to power the DCs. The micropod exhibited some sensitivity to ambient air temperatures, with PUE varying ~0.10 per 10˚C increments.

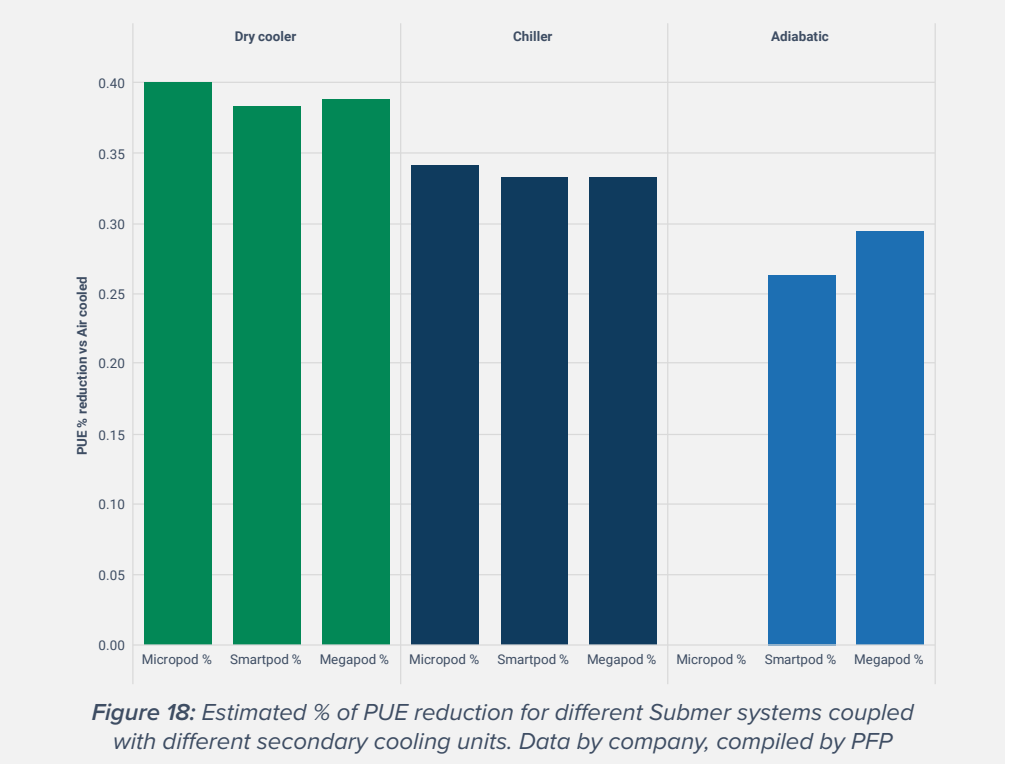


Figure 18: Estimated % of PUE reduction for different Submer systems coupled with different secondary cooling units. Data by company, compiled by PFP

The company has several generations of cooling pods deployed in over 100 locations. **LCA based estimates indicate that the company enabled its clients to offset 6.35 kilotons of CO2eq in the period of June to July 2022.**

These results and the LCA model will be improved in 2023 to better capture the variation in incumbent technology (currently benchmarked against conventional air system) and local energy grid footprint.

Submer added 24 FTE green jobs to the economy in 2022.

35. JRC (2021)
36. CNELEC (2019)

OUR PORTFOLIO

Submer

Climate adaptation	Submer's HQ is located in an area with potential increased exposure to heatwaves, but this is not considered a material risk.
Water	The company is fully compliant with water extraction and use regulations. The company is not affecting areas with high or extremely-high water stress.
Circularity	Submer's pods contain a high percentage of recyclable materials in its composition, and its R&D unit-initiated work with potential suppliers to identify potential biobased poly-alfa-olefin suppliers for the coolant fluid.
Pollution	Company products do not introduce restricted substances. Liquid coolant fluid is readily biodegradable.
Biodiversity	Submer operations do not required EIA or similar instrument before installation. Neither Company units nor tier 1 supplier were found to be potentially negatively affecting areas relevant for Biodiversity.
Minimum safeguards	Company and tier 1 suppliers operate in low-risk geographies for human rights and labour rights violations. Submer is updating its supplier code of conduct in 2023 to align with OECD requirements. Company is also reviewing ACB and code of conduct policies.

Principle Adverse Data reported as per Sustainability Management Plan and incorporated in PFP's regulatory filings (Annex 1).

What to expect in 2023?

Submer is accelerating operations with its US crypto unit, which will add pressure for supplier diligence in China. The company hired a new Head of Sustainability in December 2022 (starting effectively in Q1 2023). Company is also preparing to engage with new raise process. PFP provided support for the company to develop the Life-cycle assessment and will continue to provide support in the raise process.

In terms of new developments, we expect to work with the company on refining the post-LCA model to improve granularity in projecting GHG offset as well as integrating it with commercial operations.

OUR PORTFOLIO

Eka

Eka is positioned as our only ecosystem investment. This component of our investment strategy is designed to aid in pipeline formation by connecting our investment strategy to an earlier stage vehicle.

The onboarding process involved the assessment of Eka's existing portfolio of investments and an assessment of potential alignment with our Sustainable Investment mandate.

This alignment was confirmed, with companies like Hived, Hylo and Sourceful being mapped as aligned with environmental issues (signalled on the right in green), and ithers like Urban Jungle and Paired aligned with social issues (signalled on the right in blue).

Our teams worked together on how to update their own impact approach to guarantee alignment with SFDR Article 9 requirements. The fund's earlier stage investment strategy as well as their UK base puts them at much greater distance from mandatory remit of the EU Sustainable Finance Framework.

What to expect in 2023

Eka has committed as part of the onboarding process with PFP to guarantee that their diligence and investment decision will seek alignment with the demonstration of a substantial contribution and no-significant-harm criteria.

Post investment, they will support their portfolio companies to deliver on the sustainability thesis.

It is important to highlight, however, that as an earlier stage investment strategy, there is a risk that as the company's technology and market fit matures, there will be a drift from sustainability.

PFP will work with Eka in their 2023 reporting process to develop an MRV strategy to check potential substantial contribution and verify viability to collect detailed PAI data.

CONCLUSION

Views from the sustainability team

Reviewing 2022 and a look at 2023

In retrospect, 2022 may be remembered as the year in which climate change concerns converged with energy security and industrial policy, manifesting in the emergence of a raft of policy measures designed to boost the deployment of clean technologies.

Following the outbreak of the war in Ukraine, the European Union launched the **RePowerEU** plan to reduce its dependence on Russian fossil fuels and accelerate the roll-out of clean energy. The plan included measures to boost the use of renewable hydrogen, speed up the permitting of renewable energy technologies, and ramp up the deployment of solar PV, wind power, and heat pumps.

Geopolitical considerations also shaped the introduction of the U.S. Inflation **Reduction Act** (IRA) in August 2022, which allocated $369 billions of funding to clean technologies through tax breaks, grants, and loans. While the IRA is certainly the most ambitious U.S. climate legislation to date, the bill is as much – if not more – an industrial policy aiming to shore up domestic manufacturing capacity and challenge China's dominance in clean technologies.

The adoption of the IRA triggered a pushback from countries across the globe against some of its provisions that tie subsidies to domestic manufacturing requirements. Concerned about the protectionist elements of the IRA, European policymakers called on the U.S. to remove any domestic manufacturing requirements or grant exemptions to European manufacturers, arguing that these requirements would encourage companies to shift investments from Europe across the Atlantic. Following weeks of diplomatic efforts and no signs that the U.S. administration was willing to amend the IRA, the idea of enhancing **European clean tech subsidies** gained traction among EU leaders in late 2022. This was followed by a series of policy measures in the first quarter of 2023, including:

1. Adjustment of the EU state aid framework: empowering member states to ramp up public investments into clean technology value chains.
2. Net Zero Industry Act: legislative proposal to facilitate the domestic manufacturing of clean technologies through manufacturing target, faster permitting procedures, green public procurement frameworks, and other measures.
3. Critical Raw Materials Act: legislative proposal to reduce dependency on third countries and increase domestic capacity for extracting and processing raw materials of strategic importance to clean technology, space, and military industries.

We expect that industrial and trade policies will continue to loom large for clean technologies in the year ahead. In the U.S., the technical implementation of the IRA is in full swing and while technical details of certain funding mechanisms are still pending, more than $75 billions of investments have been announced in clean energy projects since the adoption of the IRA in August 2022.[37] In Europe, policymakers still have substantial work ahead of them to finalise the proposed measures and enhance Europe's clean technology competitiveness. Although gas prices have come down from their peak in 2022, we expect that boosting clean technologies as a means of decoupling from Russian fossil fuels will remain a strategic imperative in Europe for years to come.

Overall, we believe that the convergence of energy security, industrial competitiveness, and climate change concerns – and the emerging policy response – constitute a structural step-change that provides additional tailwinds for clean technologies across PFP's portfolio and investment verticals.

What will be our focus in 2023?

The Sustainability team is prepared for another year of intense regulatory, market and technology monitoring. PFP has recently joined the Cleantech for Europe coalition and we are keen on exploring new coalitions to collaborate with our peers.

37. As of 13 April 2023: https://e2.org/clean-energy-announcements/?ref=ctvc.co

CONCLUSION

Views from the sustainability team

This summer will see the release of a new batch of EU Taxonomy technical screening criteria, the final consultation of the European Sustainability Reporting Standards, the approval of the RED II legislation, the clarifications on the implementation of the US IRA.

The next few months will be the centre stage for the scientific publications, think-tank positions and institutional reports on climate change in preparation for the COP-28 in the UAE. These are already coming through, with the IEA indicating that solar investments will eclipse investments in oil production[38]. A new paper published in June proposes that losses from fossil fuel asset stranding (in Germany, France, Italy, UK and the US) would not be as hard as initially proposed, these being absorbed by very-high income individuals protected by their absolute wealth[39].

Our team has assumed the institutional goal to develop a study on the geopolitics of supply chains critical to PFP's investment strategy, as well as to directly support the continuous deepening of the investment thesis for each vertical.

In the meantime, the aforementioned tailwinds will bring new and exciting companies to our deal pipeline. We are looking forward to working with prospective companies to help ascertain if there is a good fit with our sustainable investment mandate. and then move onto the full diligence and investment process.

These are the moments where we feel that our positive feedback loops between the investment, corporate and sustainability teams create PFP's uniqueness. Our deal teams work as one to find the right companies, build the relationship with the founders and run an efficient and precise diligence process.

We believe that what we are doing is slowly becoming the new norm. Soon PFP will help to create the critical mass necessary to transition our societies towards sustainability.

We look forward to reporting to you again in 2024.

Sergio Henrique Collaço de Carvalho
Head of Sustainability

Marcel Metzner, PhD
Senior Sustainability Associate

Florence Perramond
Sustainability Associate

38. IEA (2023), World Energy Investment 2023
39. Semieniuk et al., Joule (2023): Potential pension fund losses should not deter highincome countries from bold climate action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