



FINANCING ENERGY TRANSITION: TRENDS AND CRITICALITIES IN THE O-FIRE RESEARCH ACTIVITY

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The Global Energy Transition Toward Decarbonization

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THE CONTEXT

- **The energy transition needs huge investments:**
 - **climate mitigation** investments (RES generation facilities, networks, storage capacity, etc.);
 - **climate adaptation** investments (acute and chronic climate physical phenomena leading to productivity loss, assets depreciation, value chains disruptions).
- **Public funding (incentives) is not sufficient, private capital is required** to support the transition:
 - cost range estimations: **\$275 - \$400 trillion between 2021-2050.**
- **Financial markets are increasingly rewarding sustainable investments and sustainable funds have proven to be more resilient** than conventional ones, but:
- **What is really sustainable and can effectively contribute to decarbonization?**
 - «sustainable finance» must be directed towards activities that could really contribute to decarbonization (financial resources are also scarce).
- **The EU Taxonomy (Regulation 852/2020) aims at identifying sustainable activities:**
 - **by means of 3 Delegated Acts** (CLIMATE DA 2021/2139; COMPLEMENTARY DA 2022/1214; ENVIRONMENTAL DA C(2023) 3850 final) **it established the criteria (TSC) activities must satisfy in order to substantially contribute to 6 environmental objectives and not to be harmful (DNSH) to the remaining ones.**

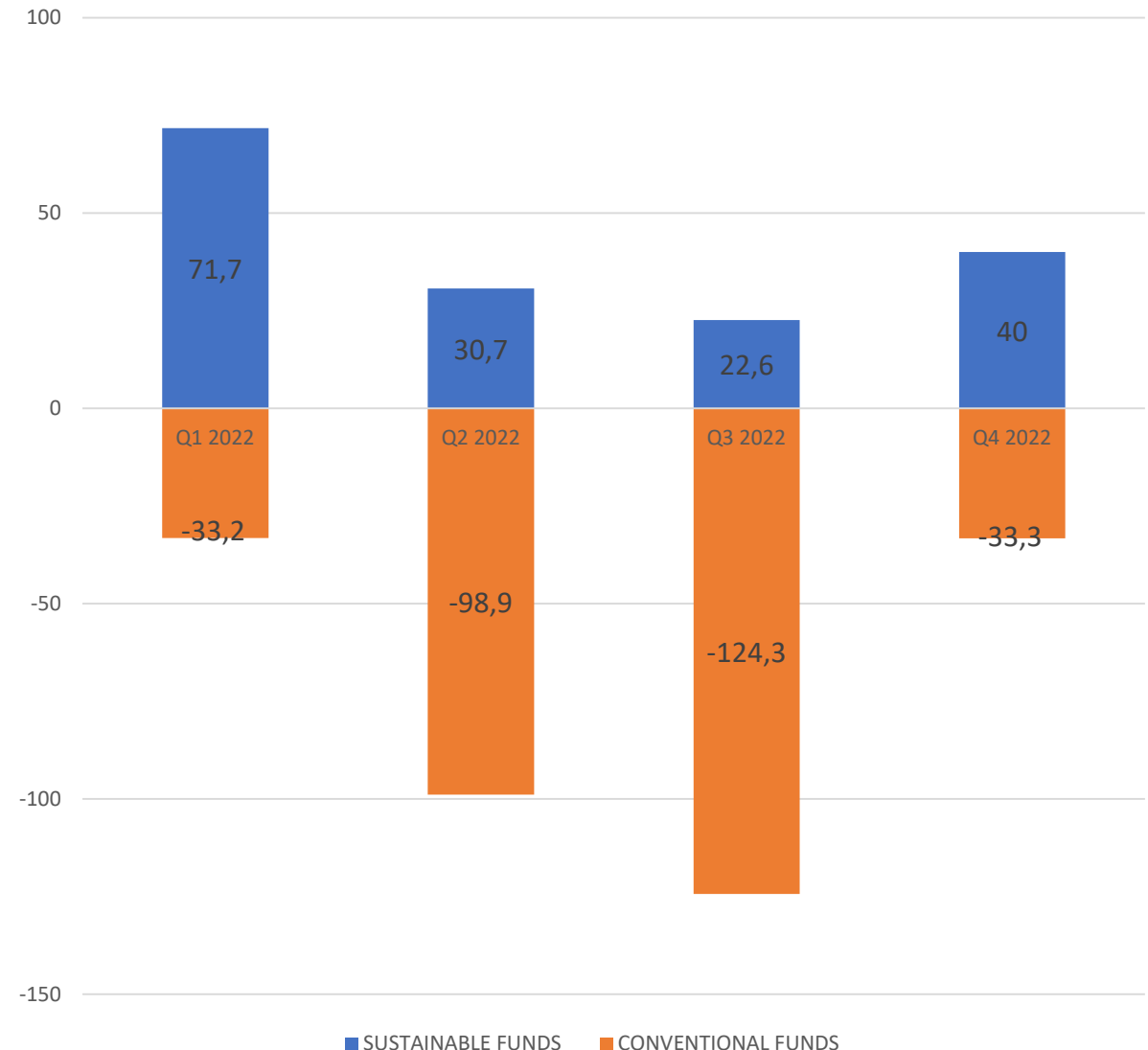
THE O-FIRE OBSERVATORY OF THE MILANO – BICOCCA UNIVERSITY

- In 2021 the Observatory on Impact Finance and Economic Implications (OFIRE) was founded at the University of Milano–Bicocca with the cooperation of *Banca Generali* and the *Italian Association of Private Equity, Venture Capital and Private Debt* (AIFI);
- Its main targets consists in:
 - monitoring the trend of sustainable finance at the world level;
 - developing different research lines in the fields of applied economics and finance, addressing the criticalities of the energy transition and ESG topics.
- In 2022 the OFIRE was involved in:
 - a comparative analysis of the performance of sustainable and conventional funds in Europe;
 - a detailed analysis of the content of the EU Taxonomy and its potential effects on the European Industrial sector.



EUROPEAN FUNDS TREND 2022: SUSTAINABLE vs CONVENTIONAL (B\$)

- **In 2022 Europe accounted for the 90% of sustainable funds flows:**
 - net inflows of about USD 39 and 7 billion were registered in the first and in the last quarter of 2022 respectively, while the second and third quarter of the same year were characterized by net outflows of USD 68 and 102 billion.
- **Negative flows were exclusively determined by conventional funds;**
- **Sustainable funds were characterized by positive flows during the whole year, though marking a decrease in net inflows during the first three quarters, proving to be more "resilient" than conventional funds for the following reasons:**
 - in many economic sectors market evidence has shown that ESG investing leads to improved risk management and higher returns on investments;
 - attention to climate change, to responsible business conducts, to diversity in workplaces and boards is increasingly affecting corporate performances;
 - the necessity to switch from short-term to longer-term value perspectives in investments is strongly emerging in all economic sectors.



THE EU TAXONOMY: A SUBSTANTIAL GAP TO BE FILLED

- The **OFIRE analysis**, *focused on the climate change mitigation target and concerning all the 564 Technical Screening Criteria*, but with a *special focus on the energy and transport sectors* (responsible for the 80% of total EU GHG emissions), **revealed that for the most of the considered economic activities eco-sustainability fundamentally depends on the compliance with pre-existing legislations** (Regulation/Directives/Technical Provisions) **and on the respect of maximum unit emission threshold calculated with the Life Cycle Assessment (LCA) approach;**
- **In order to establish the degree of alignment of the EU industrial sector with the Taxonomy 370 environmental variables relating to 1,400 European companies**, accounting for a total turnover of USD 10 billion, **were processed** (MSCI Database). **The analysis showed that:**
 - just a part of the companies disclose information about sustainability;
 - information is not homogeneous;
 - information is not aligned with the taxonomy TSC;
 - the misalignment is particularly evident for energy and transport companies.
- **Such a result is very indicative if considering that examined companies are big listed companies;**
- **The effort necessary to fill the gap will be remarkable in terms of both investments and reporting activity, confirming the necessity of huge capitals.**

RES AND FINANCIAL PERFORMANCE OF UTILITIES

- RES are central in the energy transition and in the EU Taxonomy;
- **Nevertheless investments in RES are not fully rewarded by financial markets:**
 - under the research hypothesis that an increase in the share of electricity generated from RES by EU utilities would improve their financial performance under the form of:
 - increased profitability;
 - higher market valuations;
 - lower risk.
- **a statistical analysis on the correlation between the two variables** (share of renewable electricity and financial performance) **was carried out;**
- **A panel of 150 power generation utilities was considered in the period 2011 – 2021;**
- **Financial performance was measured by means of three dependent variables:**
 - Return on Assets (ROA);
 - Tobin's Q;
 - WACC.
- **The analysis demonstrated that RES-based utilities do not have a privileged access to capital;**
- **This could negatively affect the energy transition.**

VARIABLE	DESCRIPTION	CORRELATION	POSSIBLE EXPLANATION
ROA (income before taxes/total assets)	measure of profitability; it indicates the efficiency of assets management in income generation	+	FIT and FIP contributed to the profitability of RES generation; RES generation is not affected by the volatility of fossil fuel prices; Null marginal generation costs.
TOBIN'S Q (enterprise value/total assets)	indicator of the value attributed by the market to the invested capital of the company; it is a measure of the incentive to invest.	+	in the light of the energy transition RES-based firms represent a more enticing investment opportunity compared to traditional utilities.
WACC (weighted average cost of capital)	measure of riskiness; it represents the rate of return that both debtholders and shareholders require to invest in the company	(weak) +	intrinsic features of RES (randomness and intermittency); social acceptance issues; uncertain and changing regulatory developments.

FINAL CONSIDERATIONS

- **The decarbonization of the economy requires huge investments;**
- **Climate finance is expected to play a key role in the transition** also thanks to the EU Taxonomy;
- The process is nevertheless characterized by **some criticalities:**
 - **the Taxonomy TSC are often challenging;**
 - **the current gap between them and environmental data disclosed by European companies is substantial;**
 - **RES generation, that represent the core of energy transition, seems to be perceived by financial markets as riskier than non-RES generation.**
- **The role of public policies becomes hence fundamental under a twofold point of view:**
 - **the energy transition must be implemented following a gradual and feasible path in order to achieve the decarbonization targets in a responsible and cost-effective way;**
 - **stable, certain and appealing incentive policies are necessary in order to support and strengthen the ongoing financial market trend.**
- **Just under these conditions the energy transition will be an unprecedented opportunity of economic growth and environmental protection at the same time.**

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THANKS FOR ATTENTION!

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