



*A difficult slowdown
with reason for hope*

A series exploring the recent slowdown and the path to regaining strong momentum

JANUARY 2025

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Foreword

This series of three whitepapers examines the recent slowdown in the energy transition over the past 18 months and outlines how the market can position itself to regaining the positive momentum to reach the mainstream consumer market.

The whitepaper series explores the slowdown and how strong growth can follow:

Paper 1

Explores the market slowdown across three consumer-facing technologies. It presents an analysis of the scale and impact of the slowdown, explores the key reasons behind its depth and offers a perspective on emerging opportunities that brings reason for optimism.



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Paper 2

Considers the consumer journey, addressing how businesses can design compelling product offerings and how governments can establish effective policy frameworks to drive adoption among mainstream consumers.



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Paper 3

Focuses on the financial investments necessary to support a robust recovery, both at the business and consumer levels. It outlines the funding required to ensure the energy transition sector regains its momentum and successfully integrates into the mainstream market.



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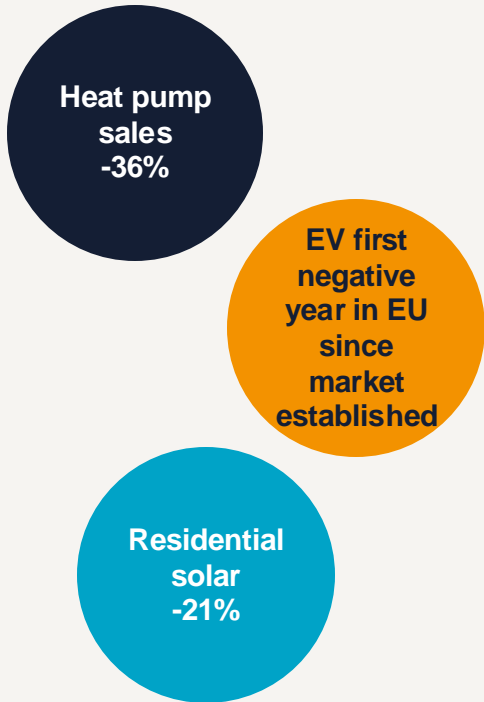
Each of these papers draws on extensive research and data analysis conducted by LCP Delta's expert teams, covering areas such as **Decarbonisation of Heat, EV Charging, New Energy Strategies** and **Solar & Battery**. Papers 2 and 3 also highlight details of where LCP Delta's bespoke consulting services have facilitated our clients with their ambitions to reach the mainstream market.



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Executive Summary

Difficult slowdown for downstream markets

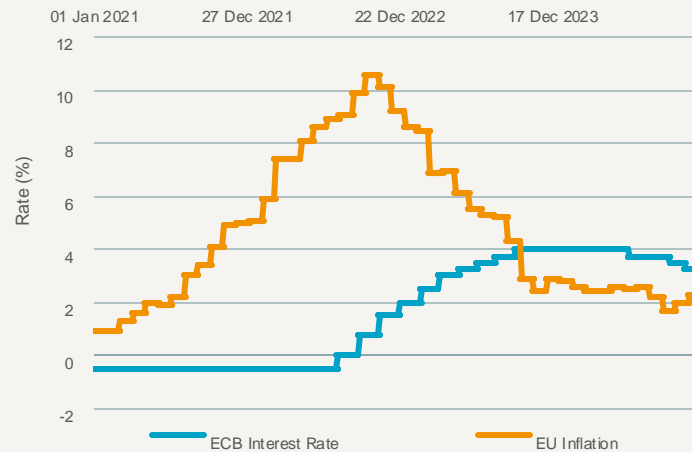


The slowdown has had meaningful impacts on businesses involved in these markets with many companies announcing job reductions. The **Northvolt bankruptcy was a significant negative last year** in Europe.

Reasons for slowdown's scale

Whilst the characteristics of any slowdown will have a number of components, we cite three that have made the slowdown difficult.

1) Cost of Living and Interest Rate Rises



Data Source: ECB

Exacerbated by:

- 2) Nascent market insufficient to provide cushion for businesses
- 3) Decline in government subsidies

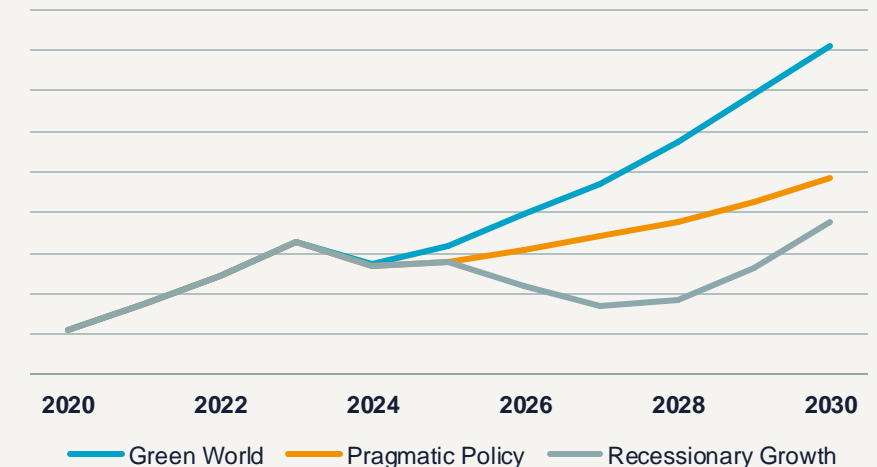
Cause for optimism

Strong momentum can be regained, and the downstream technologies can reach the mainstream consumer. We look at the car market of a hundred years ago as an example of how a technology recovered to reach the mainstream consumer.

The optimism for recovery echoes with our recent NES report, which shows three scenarios for strong growth ahead.

Successful company strategies and government policies will be key to the strength of the recovery.

Potential Recovery Paths



Source: [Top 3 of New Energy Strategies scenarios](#)

Heat Pumps

Sales volatility is in direct contrast to the consistency the technology provides

The Decarbonisation of Heat research has noted significant weakness across Europe in the heat pump market beginning in 2023 and gathering pace in 2024, with declines in hydronic heat pump sales almost across the board. This reduction in demand has been brought about by a combination of reduced subsidies and the easing of the energy crisis but continued overall financial pressure on consumers. **Italy has seen the largest decline in 2024 at 55%**, with the UK being the only country to achieve a positive growth number, albeit this figure benefits from starting at a low base.

Overall, in the **21 countries that our research team covers, sales are down 36%*** in 2024 and are even below the installations of 2021, before the boom years of 2022/23. Whilst there is a case to be made that 2022 and 2023 were anomalies in terms of the scale of growth and rollout (sales increased 54% in 2022), many more of these types of boom years are needed to reach net zero. With this in mind, our research team are forecasting a **significant shortfall of the 60 million heat pumps** that the EU is targeting by 2030.



Thomas Barquin

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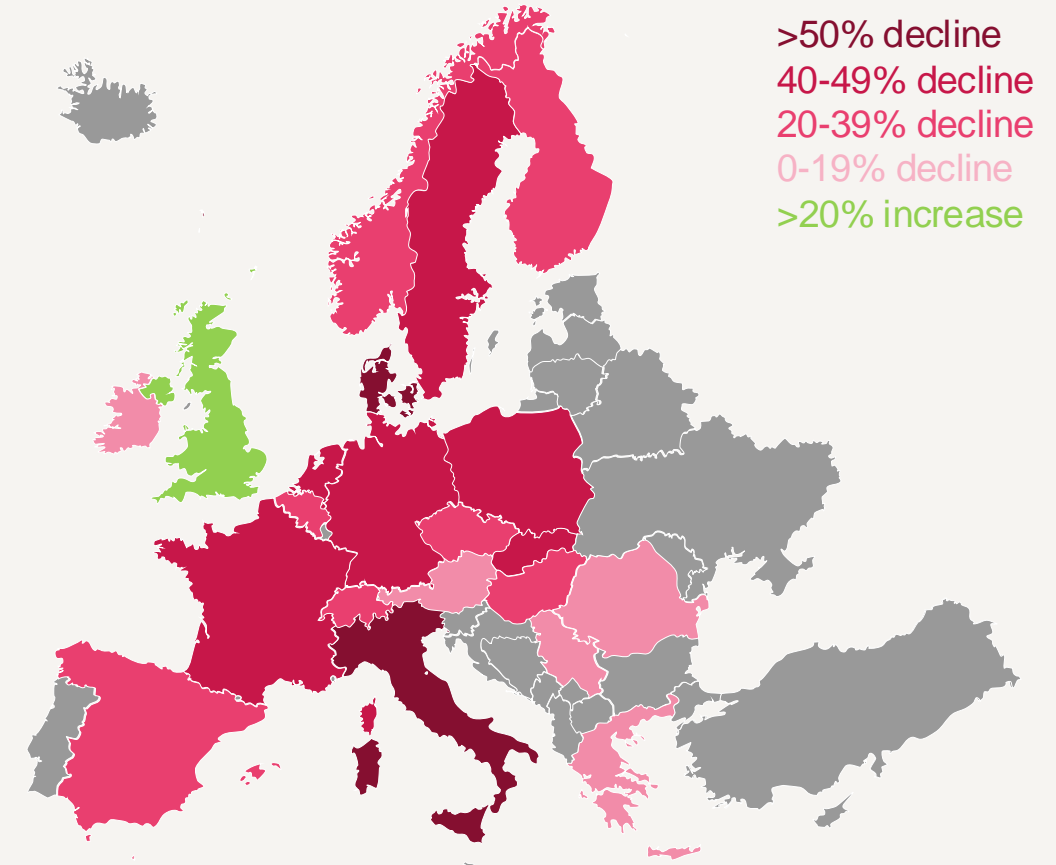
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“After years of exceptional sales, 2024 clearly was a year of contraction for the heat pump market. In 2025, no dramatic changes are expected, but rather a year of continuity and a slight recovery.”

* An estimate with final figures to be available towards end of Q1 2025

Hydronic Heat Pump Sales



Source: [Decarbonisation of Heat Dashboard on LCP Delta's subscriber portal](#)

BEV Market

Decelerating more than emergency braking

In the BEV market, our EV Charging research team finds a **more positive environment** than is widely reported, and whilst it was certainly a tough year, there were positive sales in many markets.

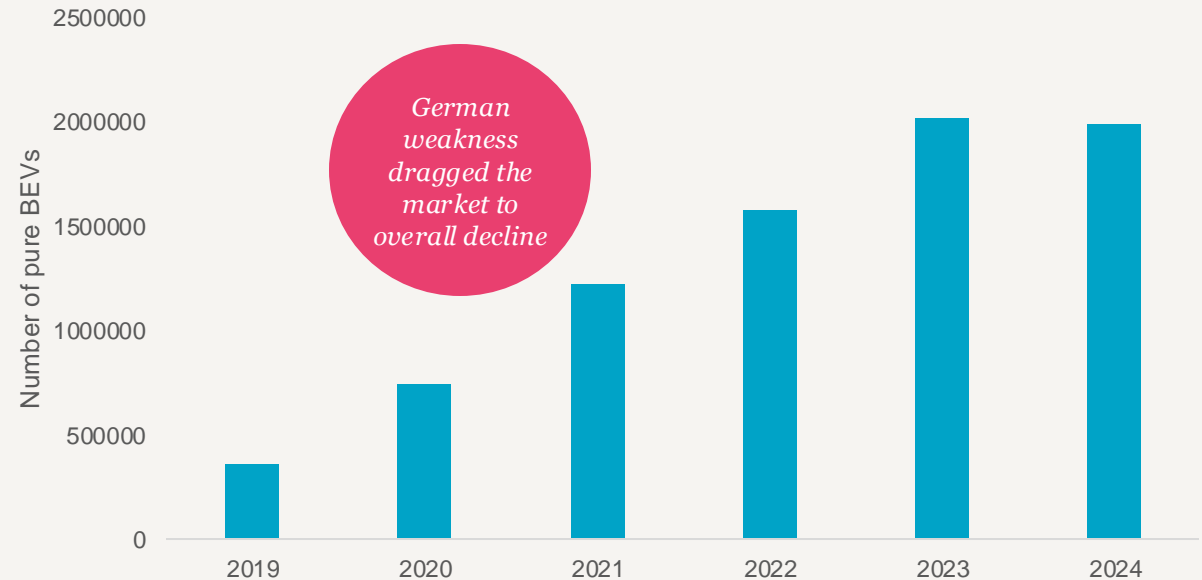
- At the high end of this is the strength of the market in **Belgium**, with **growth of 37%** in 2024 driven by company fleet EVs.
- In the middle part of the growth spectrum is the UK, which has seen EV sales rise 21% compared to the 17% growth of the year before.
- The major disappointment came from **Germany** where EV sales experienced **significant weakness** in 2024, falling 27%.
- Similarly, France BEV sales experienced a moderate 3% drop, and a material decline from the growth rate of 2023 when France saw EV sales rise 47%.

A broad summary of the BEV market is that whilst it is not as weak as many may think, it is also **not as strong as it needs to be**. We expect BEV sales will need to grow by 15-20% in 2025 to hit the new regulations that are being introduced in various countries across Europe.



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EU, EFTA & UK BEV sales



Source: [EV & EV Chargepoint Forecasts Dashboard on LCP Delta's subscriber portal](#)

EV growth stalled in 2024, a consequence of incentives being watered down or removed entirely as they were in Germany. Expect stronger growth to return from 2025, driven by stricter CO2 limits in the EU and the ZEV mandate in the UK, coupled with the launch of many new EV models targeting more affordable price brackets.

Residential Solar & Battery

Blue skies cloud over

With regards to the slowdown in the solar PV market, after the 46% growth experienced by the market in 2023, LCP Delta's Solar & Battery team is seeing **declines approaching 21%** for 2024 as the weakness across the various energy transition technologies is replicated in solar PV.

The significant fall is led by a **steep decline in Germany, Netherlands, and Belgium**, although almost all of the top 10 countries in the market also experienced a decline in the installations of residential solar. The easing of the energy crisis is an overarching reason for this weakness, but our research team also notes that there are nuances to each country, depending on the stage of development and changes in subsidies ([State of the Market report](#)). For example, **France, experienced positive growth rates in 2024**.

LCP Delta expects the residential rooftop solar PV market in Europe to recover over time, although in the short term, installation levels are unlikely to reach 2023's peak. Another segment to watch is **balcony PV, which in 2024 enjoyed 40%+ growth** (excluded from the rooftop graph on the right).



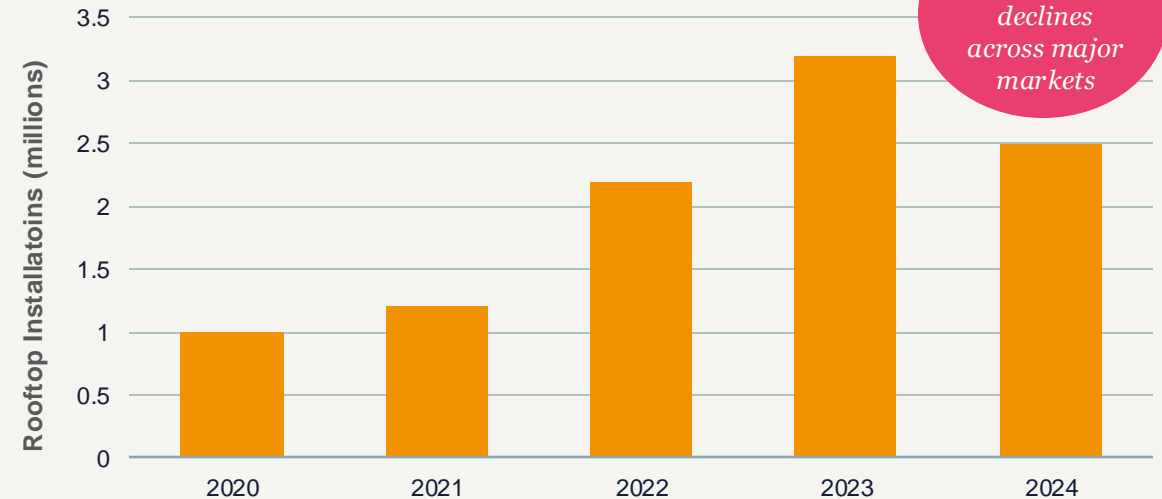
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Solar PV Annual Rooftop Installations



Source: LCP Delta

Source: [SOLARbase](#), [LCP Delta's solar & battery market data platform](#)

With 17 million homes in Europe already equipped with rooftop PV, we are on the cusp of crossing into the mass-market now for residential solar adoption. With many market players eyeing bundle and cross-sell opportunities with batteries, other major electric assets, and finance.

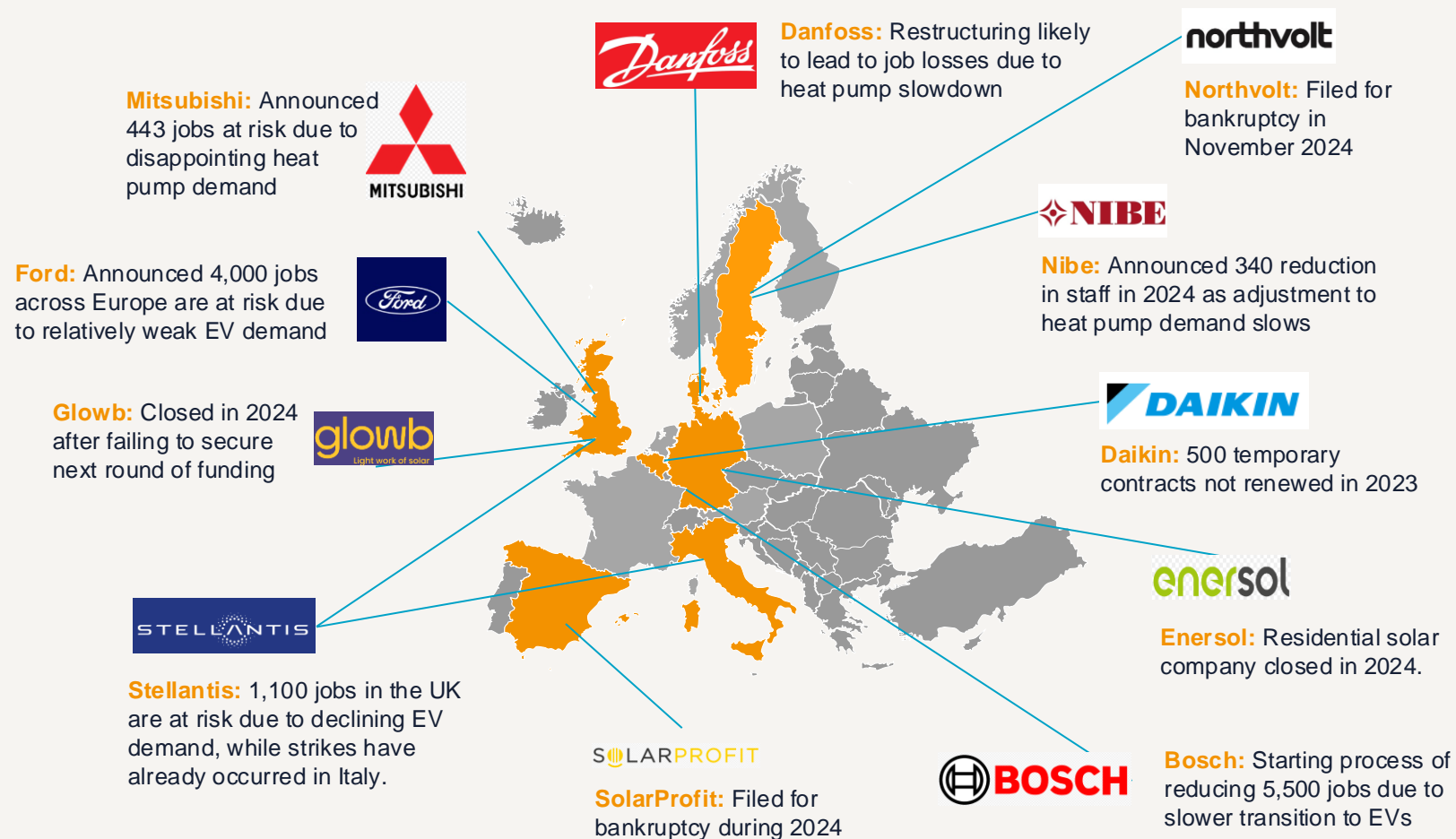
Impacts on Companies Crucial to Net Zero Ambitions

Companies at every stage of maturity have been affected by the slowdown; from start-ups through to large established companies

The market dynamics that have been detailed on heat pumps, EVs and solar PV are having significant impacts on the businesses that are driving the energy transition, even well-established businesses have been forced into negative action.

The map outlines a few examples of the types of impacts that we are seeing in the market, ranging from job losses, to funding issues that in extremis have led to bankruptcies. All of these have resulted in the slowing of the energy transition.

Selection of impacts on companies across Europe



Sources: Company announcements/press

*Reasons for the
slowdown's scale*



The Energy Crisis - Complex Consequences

Bitter irony of the energy crisis

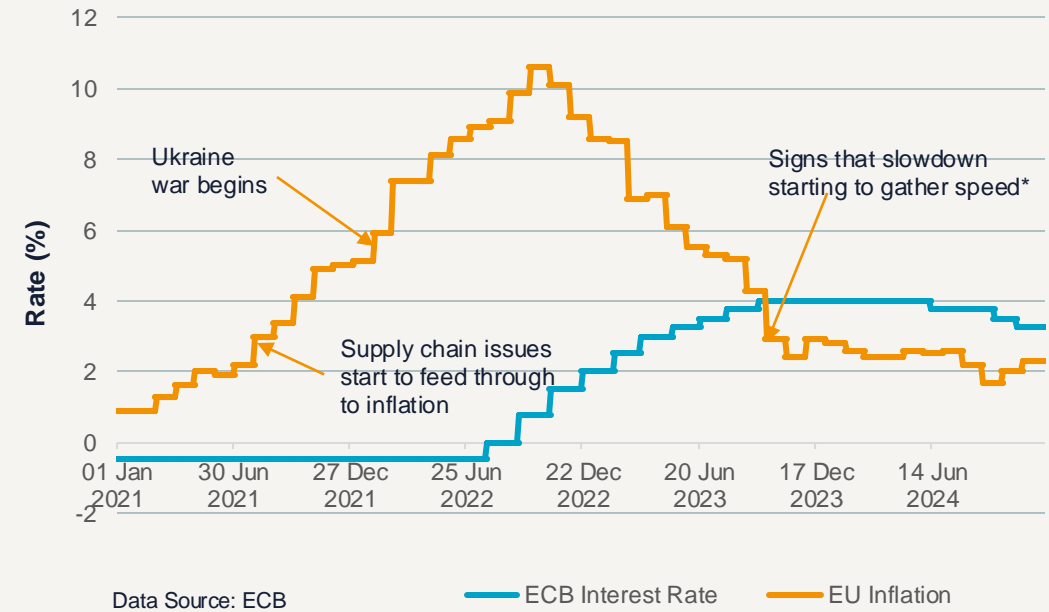
Whilst the reasons for a slowdown of an industry are typically complex, a significant reason for the slowdown in the energy transition sector was the aggressive rise in interest rates across much of the world in 2022 and 2023. **Combined with inflation, this rise in interest rates put further pressure on the finances of both companies and the consumer,** leading the latter to reprioritise their spending as the cost-of-living crisis constrained their budgets.

The reason central banks raised interest rates so aggressively was the dramatic increase in inflation that began in early 2021, as the **post covid supply chain issues** began to impact upon prices across much of the economy. As can be seen in the chart, this aggressive rise in inflation was exacerbated in early 2022 by the **energy crisis caused by the war in Ukraine**. As inflation spiralled higher, the central banks were forced to act, and interest rates rose aggressively in 2022 and 2023 as they tried to curb inflation.

This is where the irony lies for the energy transition sector; **a significant reason for the rise in interest rates that has slowed the sector, is a direct result of the aggressive energy price inflation that had so increased the sector's demand** in 2022 and 2023, as consumers looked to reduce their exposure to the prices of fossil fuels, particularly through solar PV installations.

To make matters worse, the slowdown that has happened in the sector has been impacted by two further factors; the nascence of the market and the weakening of policies across Europe.

EU Inflation & Interest Rates



* Country dependent

Mainstream Market Frustratingly Just Out of Reach

Volatility has created growing pains for the nascent market

Slowdowns are not easy environments for even the strongest and most established of companies and sectors. For a number of companies operating within the relatively nascent energy transition sector, this cyclical slowdown has been particularly difficult due to two elements:

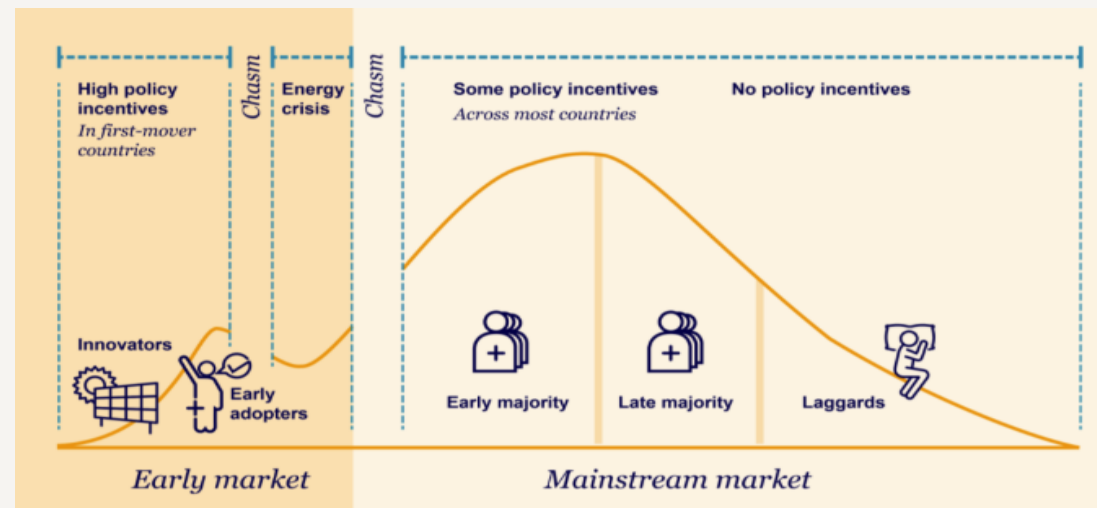
Lacking the cushion the mainstream market would provide

Whilst the energy crisis did increase the customer base for the downstream technologies to some extent, the easing of the energy crisis has meant the sector is still short of the vital mainstream market. As a result, the consumer base has not been wide enough to at least provide an element of cushioning during the slowdown, leading to the **accentuated impact being felt by businesses**, be it start-ups or within the energy transition divisions of well-established companies.

Fragility of financials

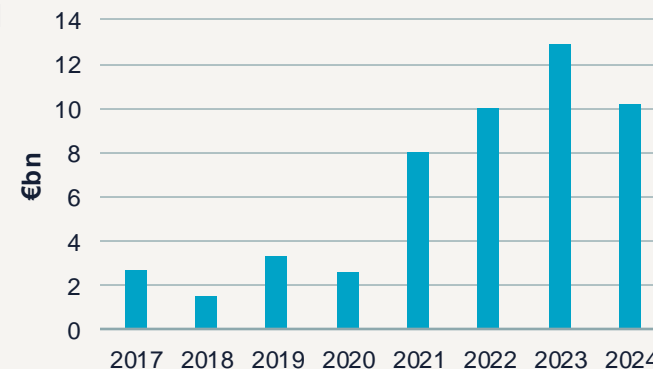
The second facet of the sector being in its early stages is that many of the companies that have entered the market with their net zero technologies have **yet to reach the stage where their balance sheets and profitability are strong enough** to comfortably absorb a market slowdown, as seen by the examples on page 8. An unfortunate negative of the positive momentum that the energy transition gained in 2022 and 2023 was that many companies needed to meaningfully expand their cost base as a result. This larger cost base has made the slowdown more difficult because the **cost base had been added at pace**, often before the business had a chance to achieve stability and profitability. This is not a criticism; it was a **logical response to the increase in demand** that they were seeing, and the drop off in demand that accelerated from late 2023 was certainly not expected. In this regard the policy developments on page 12 have been a significant factor in the scale of the weakness felt by the market.

Still Short of the Mainstream Market



Total Investment Recorded

The volatility in the nascent market has had the knock-on effect of **impacting the investment community's confidence** in the energy transition sector, which in turn has made it harder for companies to raise funds in 2024 to rebuild their financial strength.



Source: [Follow the Money report on LCP Delta's subscriber portal](#)

Policy Rollercoaster

Volatility of policy has exacerbated energy transition slowdown

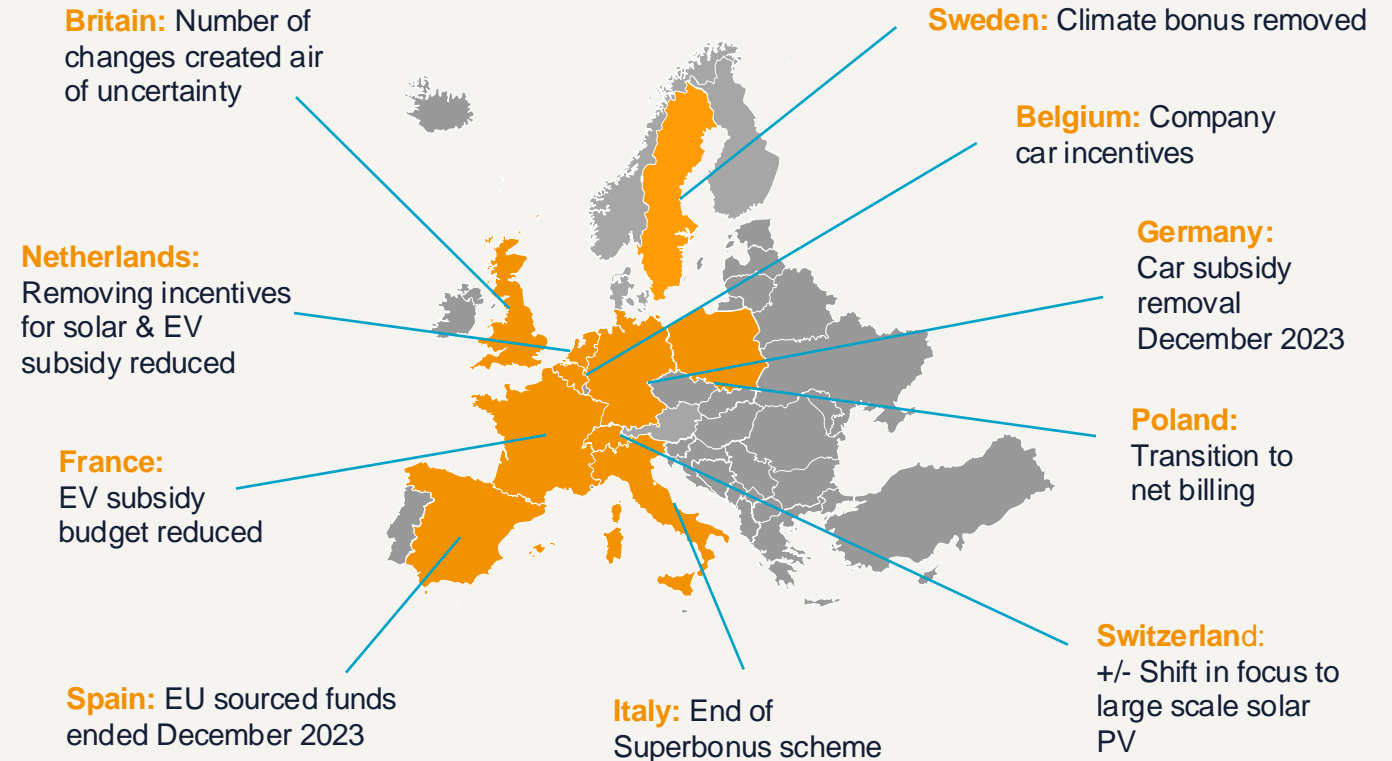
If the factors of the slowdown discussed so far had happened in isolation, whilst still difficult, companies would have found them more manageable if it hadn't been for a third major element; the **reversal of various policies across Europe**. The map provides examples of a mixture of policy changes that have been made and whilst some of them are positive, such as the company car incentive in Belgium that has helped that market grow by 37%, many of them are negative. The ending of the Superbonus scheme in Italy was the major factor in the steep decline in its heat pump market in 2023/24 and the **reduced budget in France for EVs contributed to the slowing of its growth**. At a broader level, the previous UK government created uncertainty for the whole sector with indecision over elements such as its hydrogen policy, pushing back its policy on gas boiler bans and delaying the ban of ICE car sales.

These three elements of:

- **Economic weakness** brought on by the cost-of-living crisis and interest rate rises.
- The **nascence of the market**.
- **Policy weakness**.

have combined to create the **difficult environment** that many companies involved in the energy transition have been through in the past 18 months.

Selection of Energy Transition Policy Developments



Source: [Various findings from Residential Energy Service](#)

Cause for optimism



Darkest Before the Dawn

The momentum can be regained

Despite the difficulties of the past 18 months there are **reasons for genuine optimism** for the energy transition. Perhaps the biggest reason relates to the fact that a significant cause of the slowdown has been the cyclical nature that every sector of the economy has been through at some point in history.

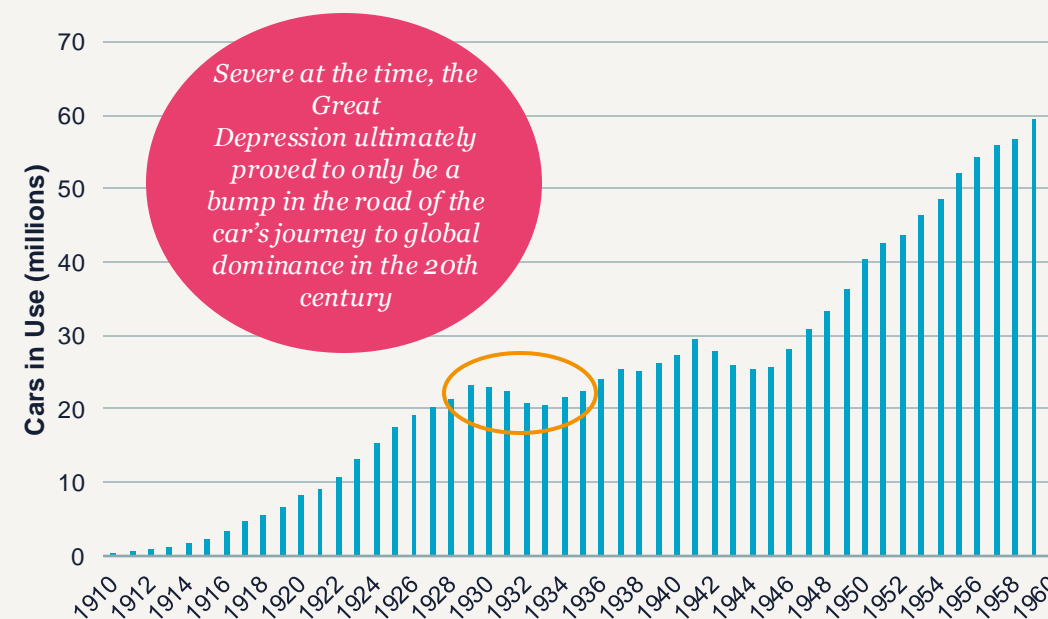
At times during this series, we will **draw from the experience of other sectors of the economy to gain insights into what might be possible for the energy transition as it looks to regain its positive momentum**. In particular, each of the whitepapers considers how the car market developed last century, going from early-stage growth to global domination. A feat that the technologies of net zero need to achieve.

In this first foray into the history of the car market, the chart shows the number of cars in use in the USA from 1910-1960. The car, as one of the major new technologies at the start of the last century, went through an initial period of strong growth, not dissimilar in length to the growth that the various new technologies involved in the energy transition have experienced so far during the 21st century. The use of cars was then impacted by arguably the greatest economic slowdown in history, the Great Depression, before **successfully regaining strong growth as it further entered the mainstream consumer market**.

Today, thankfully, we are nowhere near the economics of a great depression but the parallel of a potential strong recovery and regaining momentum is there. We can expect the **new technologies of the 21st century to emulate the recovery that the car made** as it went on to become a widespread global technology throughout the remainder of the 20th century. Indeed, as detailed in our New Energy Strategies team's whitepaper, 3 out of the 4 scenarios they have modelled result in a return to stronger growth in the years ahead. Furthermore, as detailed earlier by our research leads, they expect strength to begin to re-emerge in 2025.

However, to succeed in this endeavour, it will be vital for the technologies of the energy transition to reach the mainstream market. If this can be achieved, then there is reason for great optimism that companies will both **gain the strength that will enable them to be more resilient** when experiencing any future bumps in the road and crucially, **succeed in their mission of limiting the effects of climate change** and moving the world towards net zero.

USA Car Market 1910-1960*



Source: Statista

NB. The chart stops at 1960 because although the strong growth continues for the rest of the century, beyond 1960 it arguably becomes more of a chart showing population growth in the USA, whereas prior to that date it illustrates the continued progression of the car into the mainstream market.

The Challenge to Reach the Energy Transition's Mainstream Market

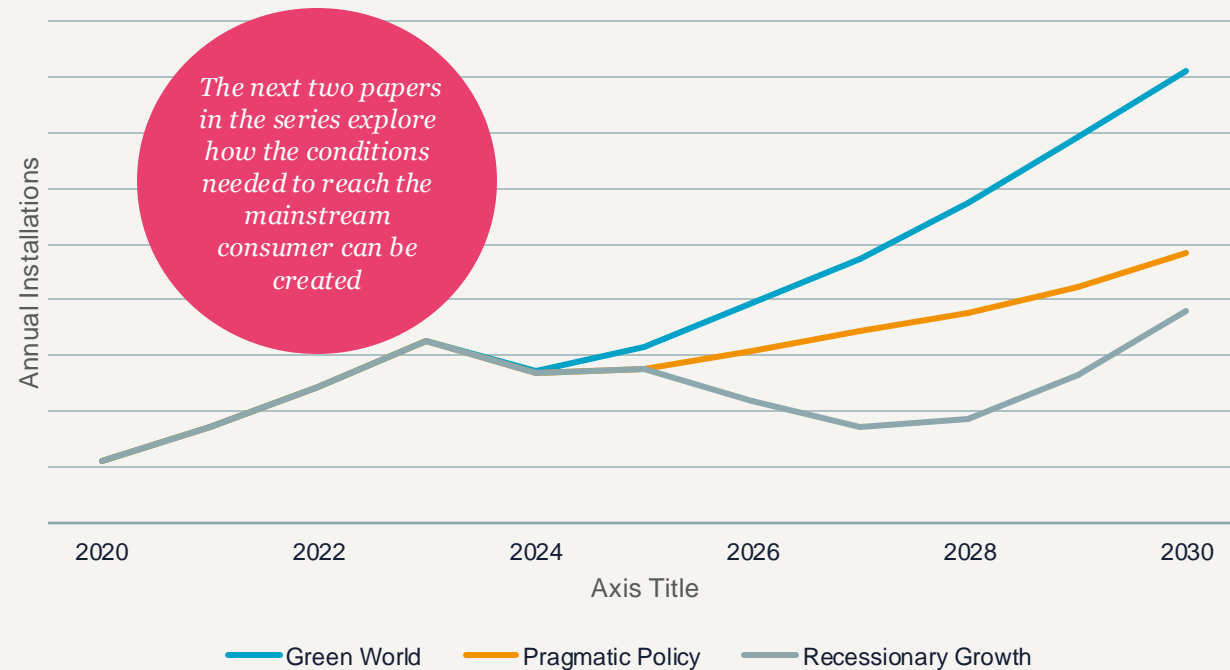
This whitepaper has sought to outline some of the main reasons why the sector has gone through a difficult time over the past 18 months and particularly during 2024. Whilst there is reassurance from history that the sector can regain its momentum, the strength of the growth will depend on the implementation of successful strategies from businesses and of effective policies from governments.

Crucially, the strength of the regained momentum will go a long way to determining whether the world can achieve net zero. We are aware that it may take a year or two to rebuild this strong momentum and believe that the preparation for the move to the mainstream market can occur during this time. This preparation forms the basis of the next two papers in the series.

The second paper in the series will look at how companies and governments can **develop customer offerings to maximise the probability of achieving the rollout** to the mainstream market.

The third paper considers how companies and governments can **establish the financial strength that both companies and consumers will need** for the roll out.

Potential Recovery Paths



Regaining Momentum: Growing Europe's Net Zero Homes Market

Virtual Roundtable Event

We hope you have enjoyed reading this first whitepaper in the series.

At the end of the series, we will be holding a virtual roundtable event where we will be hosting OEMs, energy suppliers, policymakers and investors to discuss the topics raised in the series.

If you would be interested in taking part in this virtual roundtable, please register your interest using the link on this page.

[Register interest](#)



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