



aggreko

Building in resilience

Weather-proofing European construction
in a changing climate



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How weather-proof is European construction?

The construction industry continues to make significant cuts to its emissions in an effort to minimise the worst effects of climate change.¹ But changing weather patterns and extreme weather events are now a reality for the sector, increasing the chance of project delays, and risk to colleagues working on site.

This is a problem because most forecasts predict a moderate decline in construction output through to 2025, giving contractors and suppliers far less margin for error. Large and complex supply chains are challenging enough when conditions are favourable, so the prospect of increasingly unpredictable weather will put even experienced companies in difficulty, all at a time when certainty is needed most.

Weather is already having an impact on European construction. Heavy rainfall in the UK, for instance, saw the sector's output dip by 1.9% in February 2024.² Meanwhile in warmer countries, such as Spain, officials have proposed a ban on some outdoor working during the summer months, citing the potential harm it poses to workers.³ These measures could hinder development, especially in regions where delays are already common.

Still, the sector may also benefit from changing weather patterns. ING, a consultant, points out that warmer winter weather across the continent will lead to efficiency gains, offsetting the disturbances caused by heatwaves.⁴ Whether these opportunities come to pass remains to be seen, but they all point to a need for robust and agile relationships between the managers of Europe's major builds and those supplying them.

How can businesses offset the effects of high-risk weather? What are considered the greatest threats? And where are the opportunities to minimise disruption and guarantee movement when the rain, heat or ice hits? These are the questions examined in Aggreko's latest piece of market research into European construction.

This is the second piece in a two-part series. The first report on decarbonisation can be read [here](#).

¹ <https://www.newcivilengineer.com/latest/which-construction-companies-are-on-track-to-meet-their-net-zero-targets-07-02-2023/>

² <https://www.building.co.uk/news/bad-weather-deepens-constructions-output-slump/5127204.article>

³ <https://www.politico.eu/article/heat-wave-europe-temperature-frontline-workers-at-risk/>

⁴ <https://think.ing.com/articles/milder-winters-are-enhancing-the-efficiency-of-contractors/>

Who Aggreko surveyed



853 Construction managers



8 Key regions
UK, Ireland, France, Germany, Italy, Spain, Benelux and the Nordics

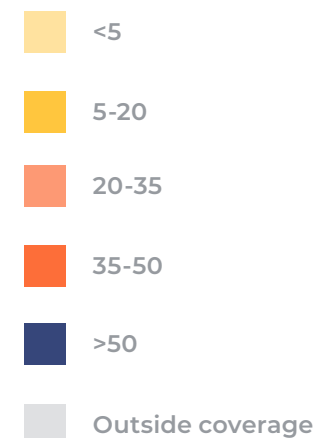


Research conducted **2024**

Share of the insured losses caused by weather - and climate - related extreme events in EEA member countries

(1980-2020) in % based on CATDAT

Historical productivity losses due to weather are not as high in Europe, especially when compared with North America and south-east Asia, but still notable. The pattern shown is expected to continue over the coming decades.⁵



⁵ <https://www.eea.europa.eu/publications/economic-losses-and-fatalities-from>

KEY FINDINGS

How is high-risk weather affecting each region?

Changing weather patterns are having a profound impact on European construction, though the weather type deemed to pose the greatest risk varies by region

Europe's range of different climates poses a major challenge for contingency planning

Rapidly changing weather has been directly responsible for both missed deadlines and financial penalties, with every region suffering to some degree

Businesses are increasingly concerned about equipment breaking down and the welfare of their employees

Financial penalties are compounding existing market pressures for some construction businesses





High-risk weather is having a profound impact on construction

Despite high temperatures typically generating the most headlines, respondents cited freezing temperatures as the greatest risk to their sites. This was followed by sleet and snow and excessive rainfall or flooding.

Europe has a diverse range of climates, some polar, so in some sense this result is expected, especially given harsher-than-expected winters in certain countries.⁶ However, with temperatures generally trending upwards, it's not unreasonable to suggest extreme heat will eventually take the top spot in the continent's more temperate countries.

It's also important to note that less than 1% of the sample said there was no specific type of weather that poses the most risk.

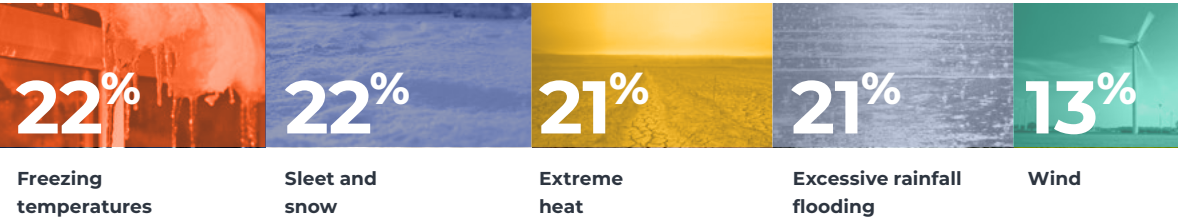
1. The weather type deemed to pose most risk is highly regional

The level of concern for certain types of high-risk weather was different depending on the respondents' location. For instance, freezing temperatures was the top concern in Ireland, Germany and Benelux. It was sleet and snow for France, Italy and the Nordics, while the UK cited extreme heat and Spain chose excessive rainfall or flooding.

The regionality of these findings is unsurprising, though an important point for those developing contingency plans and procuring equipment that's ready for all eventualities. Despite perceptions that most projects today demand similar equipment, construction managers' priorities are still relatively unique and will require robust supplier relationships as weather patterns change further.

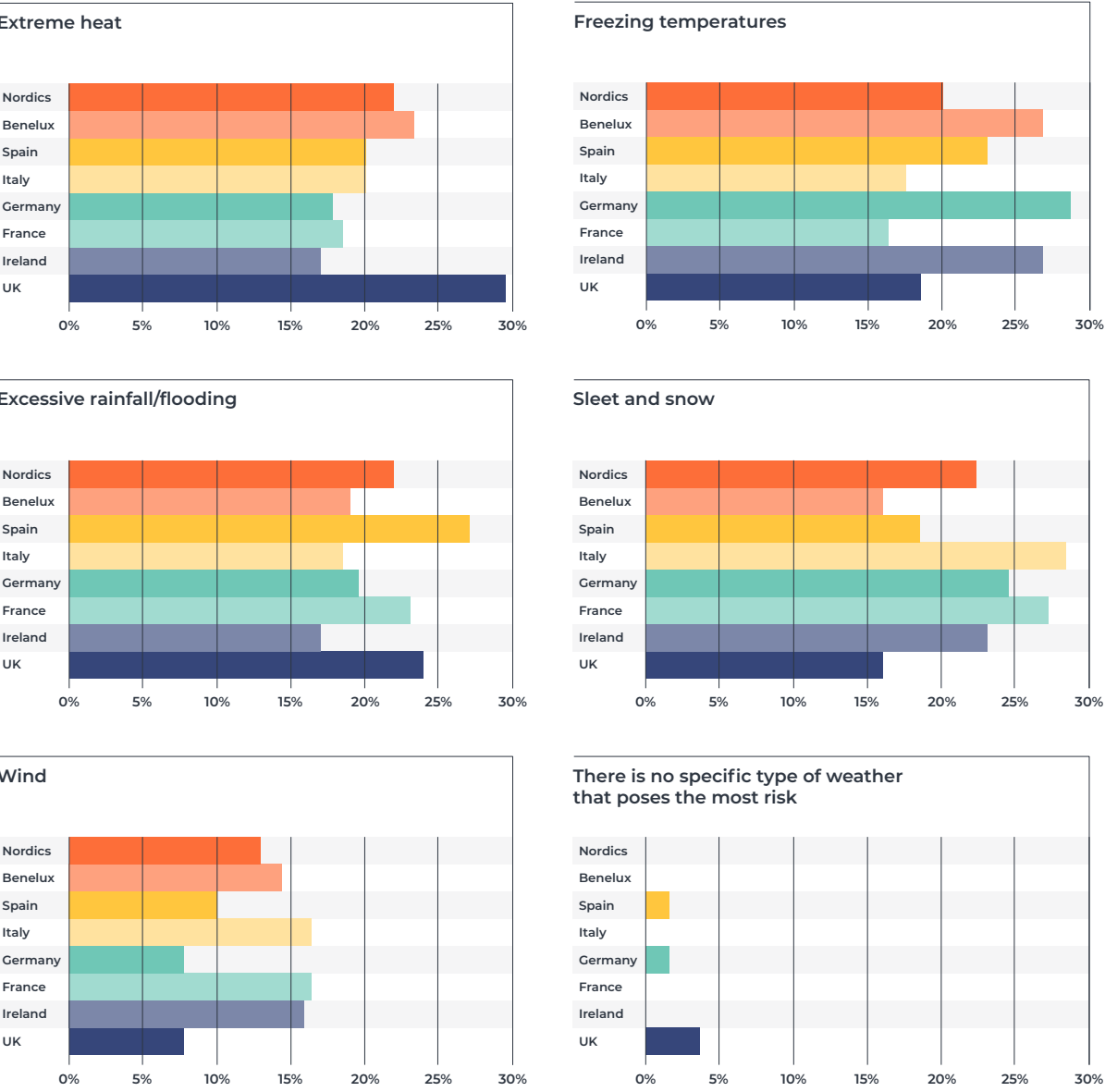
⁶ <https://www.imperial.ac.uk/news/251117/climate-change-increased-rain-snow-from/>

Q1 What type of weather, if any, poses the most risk to your sites?



Q2 What type of weather, if any, poses the most risk to your sites?

Breakdown by country



How effective supply chains can break the bottleneck

As the results make clear, weather is a highly regional challenge for construction across Europe. Yet the sector is heavily dependent on cross-border trade and movement of materials between different regions. What might pose a risk in one region, may not be a major consideration in another.

Timber rot and decay, for instance, will be a more obvious problem when stored in wetter regions; but in drier parts of Europe, fire or thermal expansion will be the key concern.

This highlights the need for suppliers that are not only prepared to reach all corners of the continent but also equipped with a large fleet of capable solutions. The range of these problems also emphasises the value of working with partners, like Aggreko, that understand weather-related challenges within construction.

2. Europe’s major projects are being hit hard by rapidly changing weather

At 92.6%, the vast majority of construction managers have experienced difficulties in the past year due to changing weather conditions. Of that figure, 75.2% said they had seen major delays, resulting in either missed deadlines or financial penalties. Only 17.3% said the weather had caused minor delays.

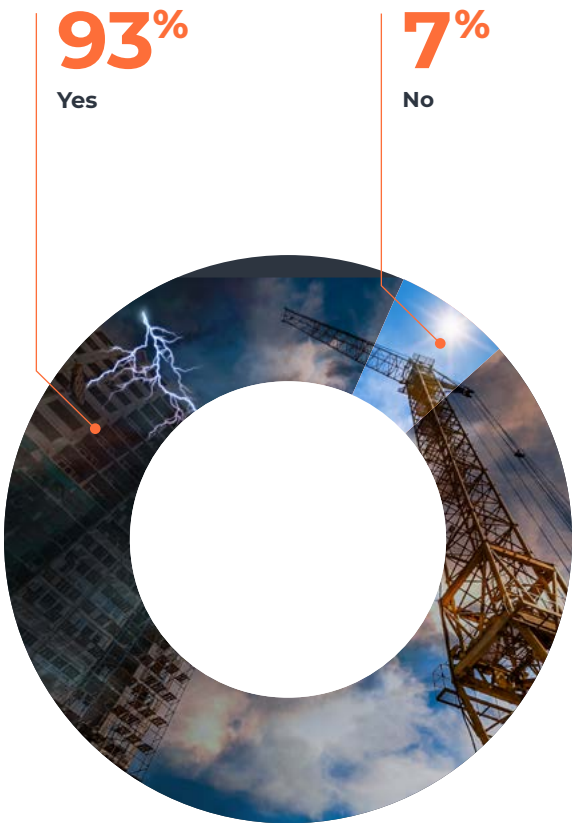
All respondents in Ireland and Italy – and almost all in France, the Nordics and the UK – said they had experienced a delay of some kind in the past year. Spain and Benelux had the highest percentage of respondents recording no delays.

...and it’s affecting the bottom line

The regions most impacted by rapidly changing weather in the past year and consequently suffered financial penalties were Italy, the Nordics and the UK.

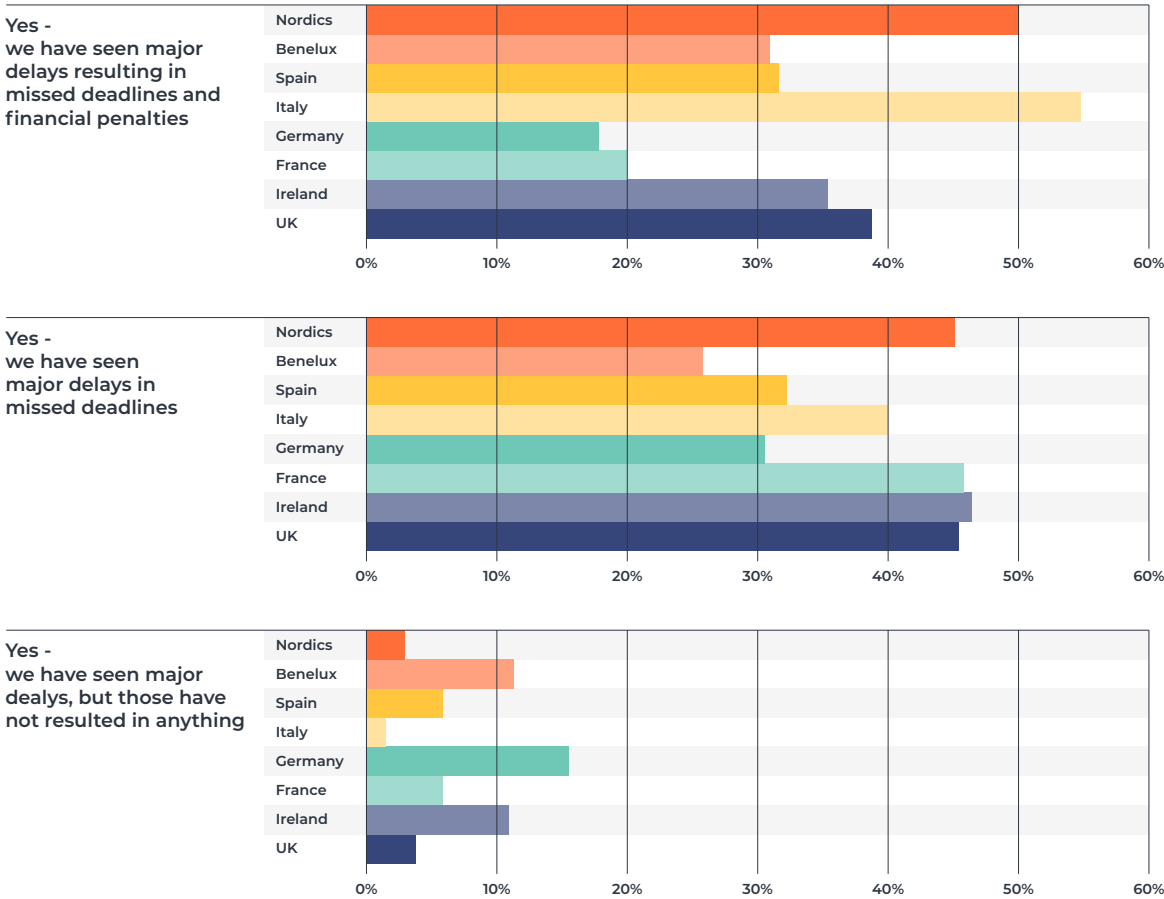
These findings suggest the sector is often underprepared or not fully supported for the full range of weather types now possible across Europe. And these issues are likely being exacerbated by the lack of access and rising costs for equipment and materials discussed in Aggreko’s [first report](#).

Q3 Have any of your projects been affected by rapidly changing weather conditions in the past year?



Q4 Have any of your projects been affected by rapidly changing weather conditions in the past year?

Breakdown by country



How effective supply chains can break the bottleneck

Effective supplier partnerships will be able to diagnose and target all weather-related challenges, regardless of where construction is taking place.

Site managers have enough to think about – let alone the potential impact changing weather might have on a build. In short, they need to know a plan is in place ahead of and during a build.

This makes it critical to choose suppliers that are capable of recommending the *right* solution.

What may be the quickest or easiest choice is not necessarily the most effective. But this can be difficult to know when conditions change so quickly. This is where Aggreko is making the difference.

Our team has the fleet and experience to deliver what's needed and at a scale required for the sector's biggest projects – heating, cooling, drying and, perhaps most important of all, moisture control.

3. Construction managers are most concerned about their equipment breaking down...

Overall, equipment breakdown was cited as the biggest concern stemming from high-risk weather. This was followed by employee welfare and damage to materials.

Equipment breakdown was among the top two concerns in every region bar Spain, suggesting those who have purchased outright are now struggling with ageing or ineffective plant.

...though all acknowledge the diverse threats posed by high-risk weather

Less than 1% said they had no concerns regarding high-risk weather, and the results were evenly spread across all regions, highlighting the pervasive impact of a changing climate on European construction.

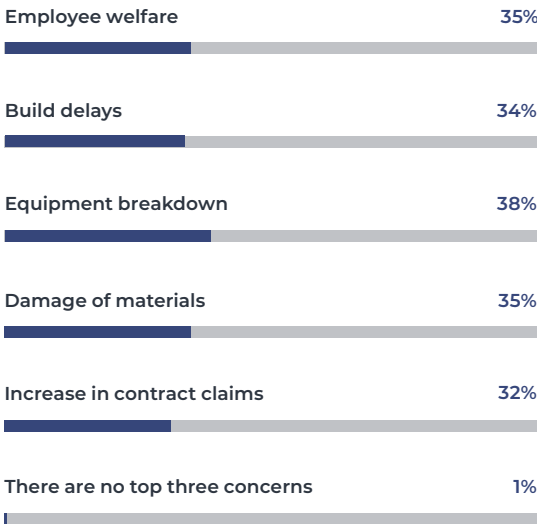


How effective supply chains can break the bottleneck

Managing risk is about anticipating challenges before they impact a project. But it's also about flexibility – because each site is unique and comes with its own set of challenges.

Hired solutions present the strongest argument for making construction more resilient in a changing climate. Developers can access the latest technologies without risk of purchasing equipment that may become obsolete in a few years. They also minimise the impact of

Q5 What are your three concerns, if any, regarding high-risk weather?

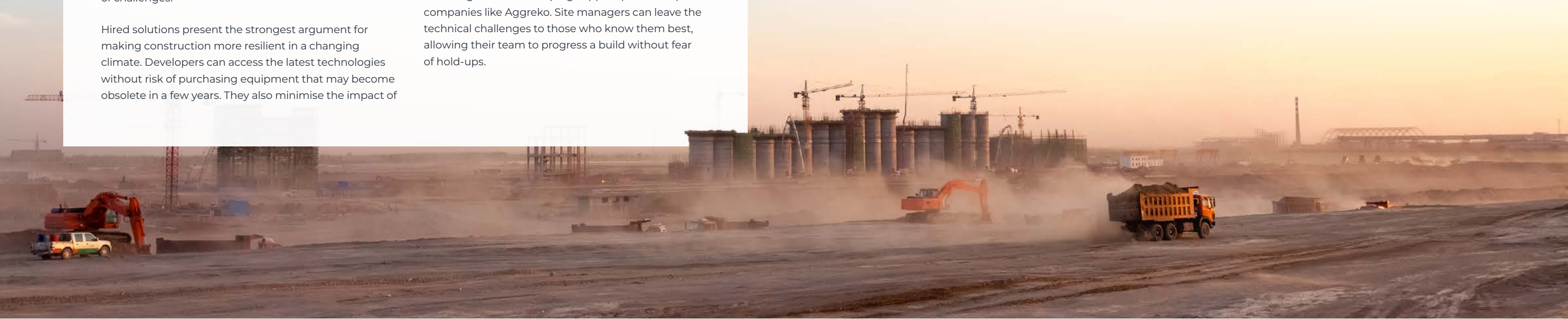
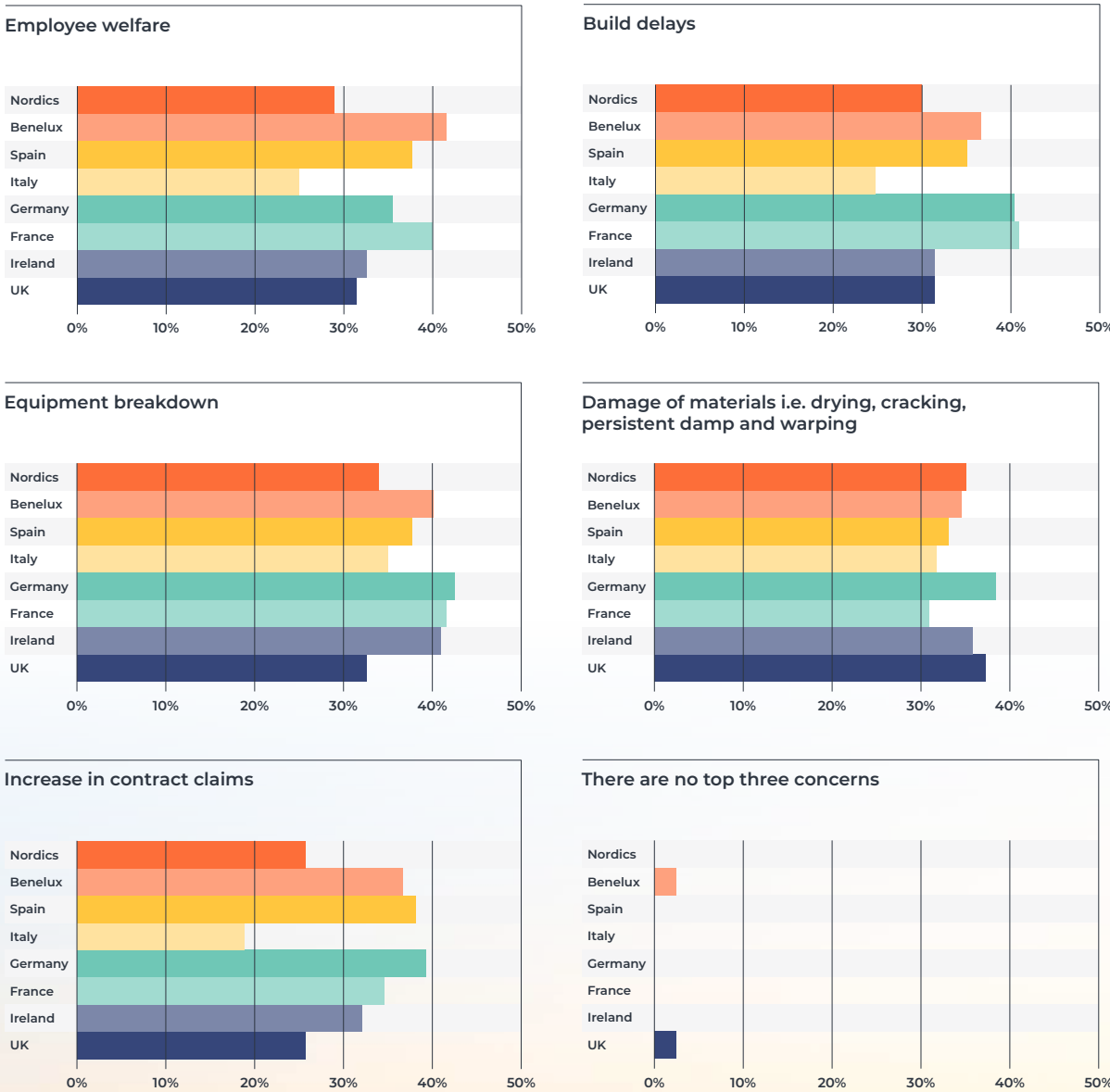


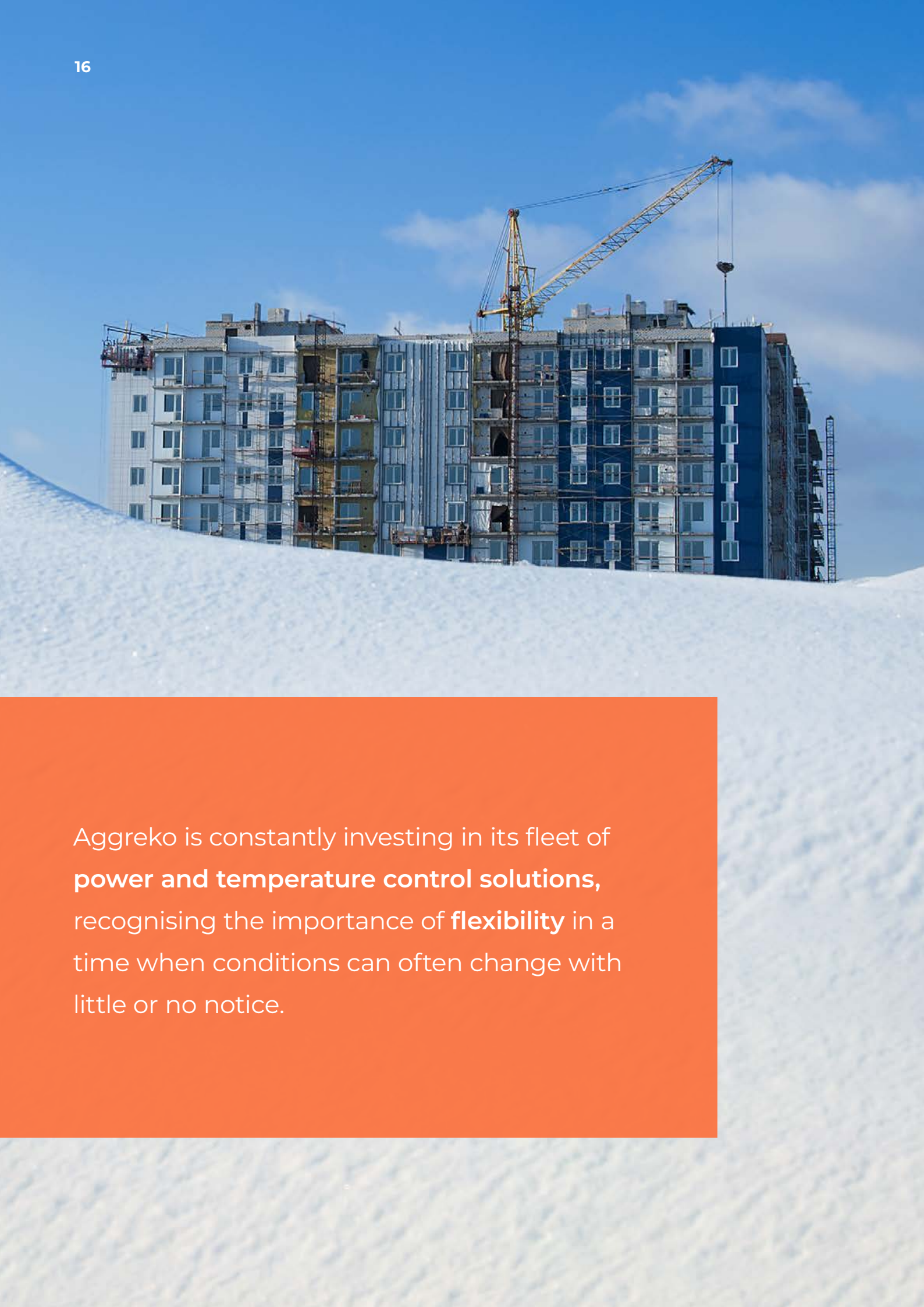
breakdowns, as engineers are able to anticipate and fix performance issues long before problems cause delays. Aggreko's remote monitoring service offers a good example of this approach in action.

Expert engineers are – as research has shown – a scarce resource in today's market. This is perhaps the biggest advantage when developing supplier partnerships with companies like Aggreko. Site managers can leave the technical challenges to those who know them best, allowing their team to progress a build without fear of hold-ups.

Q6 What are your three concerns, if any, regarding high-risk weather?

Breakdown by country





Aggreko is constantly investing in its fleet of **power and temperature control solutions**, recognising the importance of **flexibility** in a time when conditions can often change with little or no notice.

CONCLUSION

Keeping builds on track, whatever the weather

Aggreko's research has shown that changing weather patterns and high-risk weather events are having a profound impact on construction across Europe. And these challenges can only be expected to grow as the full effects of climate change become clear.

This will be a difficult landscape for site managers to negotiate, not least because the sector relies on a large network of suppliers that have clearly struggled to cope with disruption in recent years. Lower-than-expected output will also make it harder for firms to offset the long-term financial pressures that have resulted from weather-related delays. Flexible financing options – like that offered by hired power and temperature control – will be especially important in this respect.

Construction is a critical part of Europe's economic development, and will be directly responsible for delivering the housing and infrastructure necessary for a warmer climate in a low-carbon era. In short, the sector must succeed, regardless of the challenges it faces.

This emphasises the importance of suppliers, like Aggreko, with an ability to scale across the entire continent. Not only does this allow businesses to access the latest technologies, it also ensures contractors are capable of responding quickly to changing conditions, be it extreme heat, heavy rain or biting cold.

Aggreko is constantly investing in its fleet of power and temperature control solutions, recognising the importance of flexibility in a time when conditions can often change with little or no notice. But this investment is not just about being able to offer the right solution; it's also about being agile to change, so our team can respond quickly to unpredictable or turbulent weather in your region.

Expert advice is arguably the most important factor to consider given the results of this research. It's clear that many contractors are increasingly concerned about their equipment and the prospect of unexpected breakdown. Some are also applying the wrong solution in a bid to solve problems quickly – for instance heaters being used instead of dehumidifiers for moisture control.

This is where our engineers are able to join the dots and remove any uncertainty for your project. And with depots all over Europe, we're never far away from your site. You can't bet on the weather but you can bet on Aggreko to keep your project on track.

Our products

Aggreko provides the construction industry with a wide range of equipment suitable for your on-site applications. With a large fleet and depots across Europe, you benefit from safe, speedy and sustainable hire.



Stage V generators

- Sizes from 30 – 1350 kVA
- Reduced emissions as standard
- 50/60 Hz operation
- Quieter sound
- Suitable for alternative fuels like HVO and B10



Diesel generators

- Sizes from 20 – 2100 kVA
- Canopy and containers prevents spillage of fuel and engine fluids
- Synchronising and load-sharing capabilities on most models



Natural gas generators

- Sizes from 1375 kVA - 1875 kVA
- Can run on NG, LPG, CNG, LNG and Field Gas
- CE compliant that can meet the most demanding regulatory guidelines



Steam boilers

- 5.5T/hr and 2T/hr units
- Rapid start up and highly energy efficient
- Compact and lightweight, housed in 10ft or 20ft ISO container
- Low water volume design for maximum safety
- Pressures up to 14 bar



Boilers

- Water boilers range from 500 – 2500 kW
- Temperatures up to +105 °C and pressures up to 14 bar



Electric and IDF (Indirect Diesel Fired) heaters

- Sizes from 3 – 350 kW
- Power supply 230 single phase and 400 V 3 phase



Fuel

- Hydrotreated Vegetable Oil (HVO)
- B10
- Diesel



Fuel tanks

- 1000 – 20000 litres
- Double-walled: virtually eliminates the possibility of internal fuel spill
- Provides safety and environmental protection
- Meets varying capacity needs; minimises refill cycle



Battery Energy Storage Systems (BESS)

- Sizes from 45 kVA – 1 MW
- Minimal noise light and compact
- Reduces emissions and fuel costs
- Plug and play with Aggreko eco-system
- Manages variable loads and eliminates light load periods
- Remote monitoring



Air conditioners/DX units

- Individual units from 6 – 250 kW EUROVENT
- 100% cooling, heating and ventilation
- Heat pump leaving air temperature from 12 to +40 °C
- Dedicated units for cold store from -35 to 12 °C
- Can operate 100% fresh air or return air for energy efficiency



Chillers

- Sized from 50 – 1550 kW
- Leaving fluid temperature from -41 to +30 °C
- Water and air-cooled chillers available
- Combine with our air handlers for ambient temperature control or HVAC applications
- Very low temperature chillers and lower GWP refrigerants



Cooling towers

- Single tower 2500 kW
- Modular design and interconnectivity allows infinite expandability
- Regulates fan speed proportional to sump temperature



Oil-free air compressors

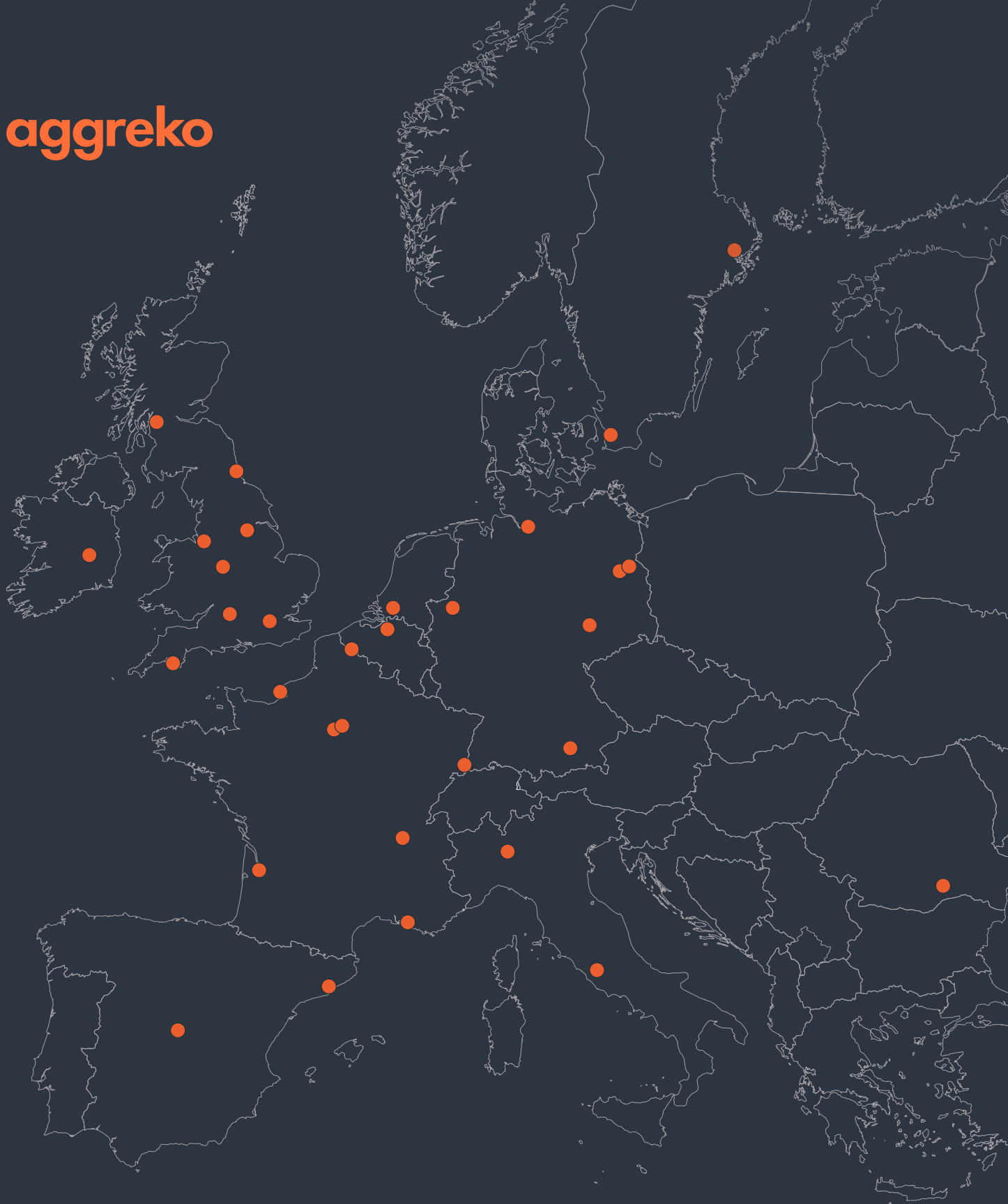
- Electric VSD 100% oil-free air compressors - 1600 cfm and 800 cfm
- Stage V diesel/HVO 100% oil-free air compressors - 1550 cfm



Moisture control

- Desiccant and refrigerant systems capabilities from 600 – 7000 m³/h
- Moisture removal up to 971 l per day
- Cascade system with air handlers, dryers and heaters
- Extra low dew point

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