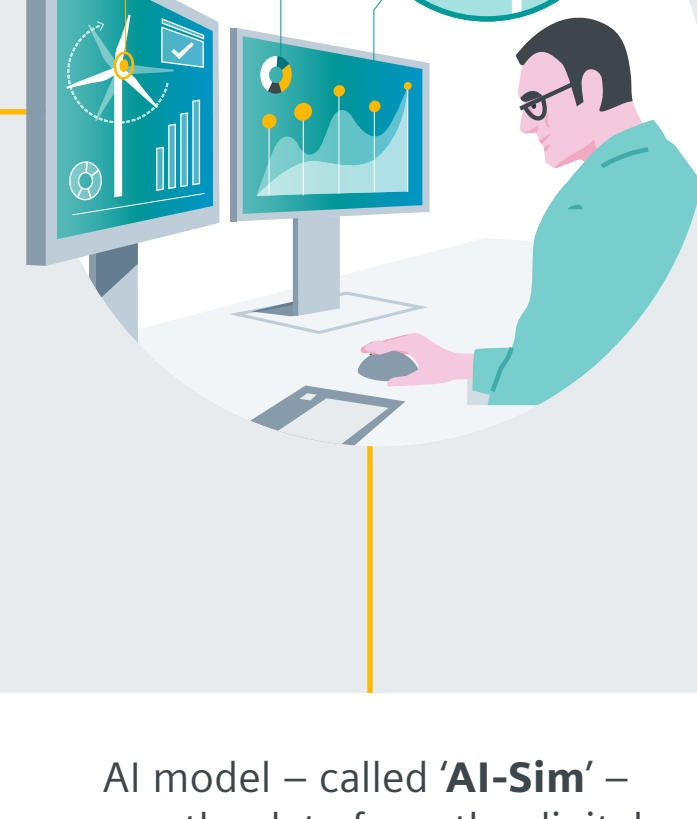


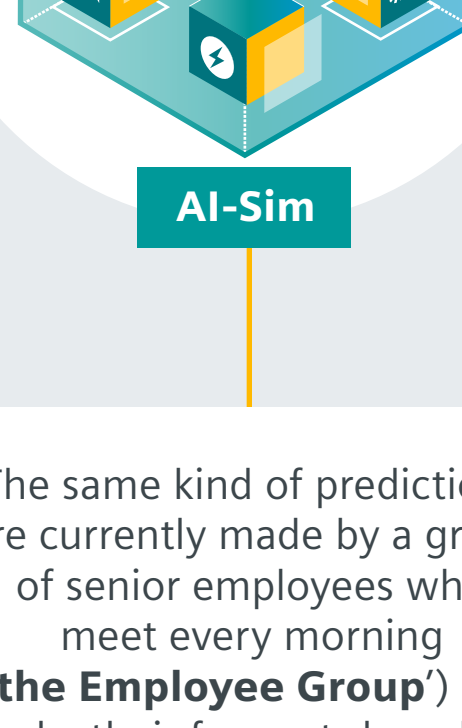
# AI in the Energy Industry

Does AI need to outperform humans before we will use it?

Imagine your organization had a digital twin system that simulated all major operations and was updated in real-time with live data...



AI model – called 'AI-Sim' – uses the data from the digital twin to continuously make predictions for key indicators.



AI-Sim

The same kind of predictions are currently made by a group of senior employees who meet every morning ('the Employee Group') and make their forecasts based on their experience/expertise.

These are then used to manually adjust operational settings...

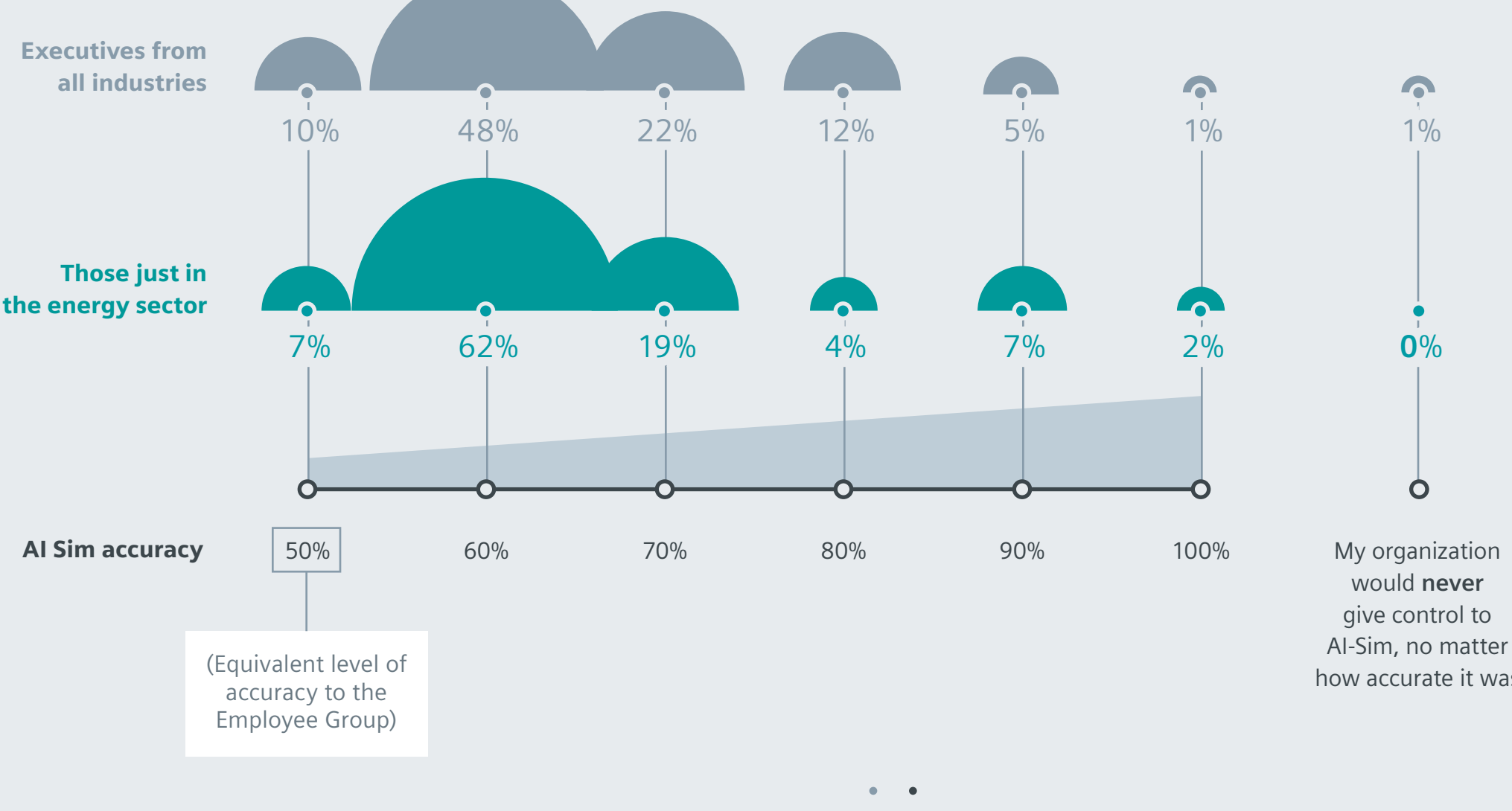


The Employee Group

The Employee Group makes accurate enough (i.e. sufficiently useful) predictions **50% of the time.**

How accurate would AI Sim need to be for you to let it take over the role of the employee group and give it autonomous control over the operational settings?

We put this scenario to 515 senior executives in industrial organizations around the world, including 117 in the energy sector:

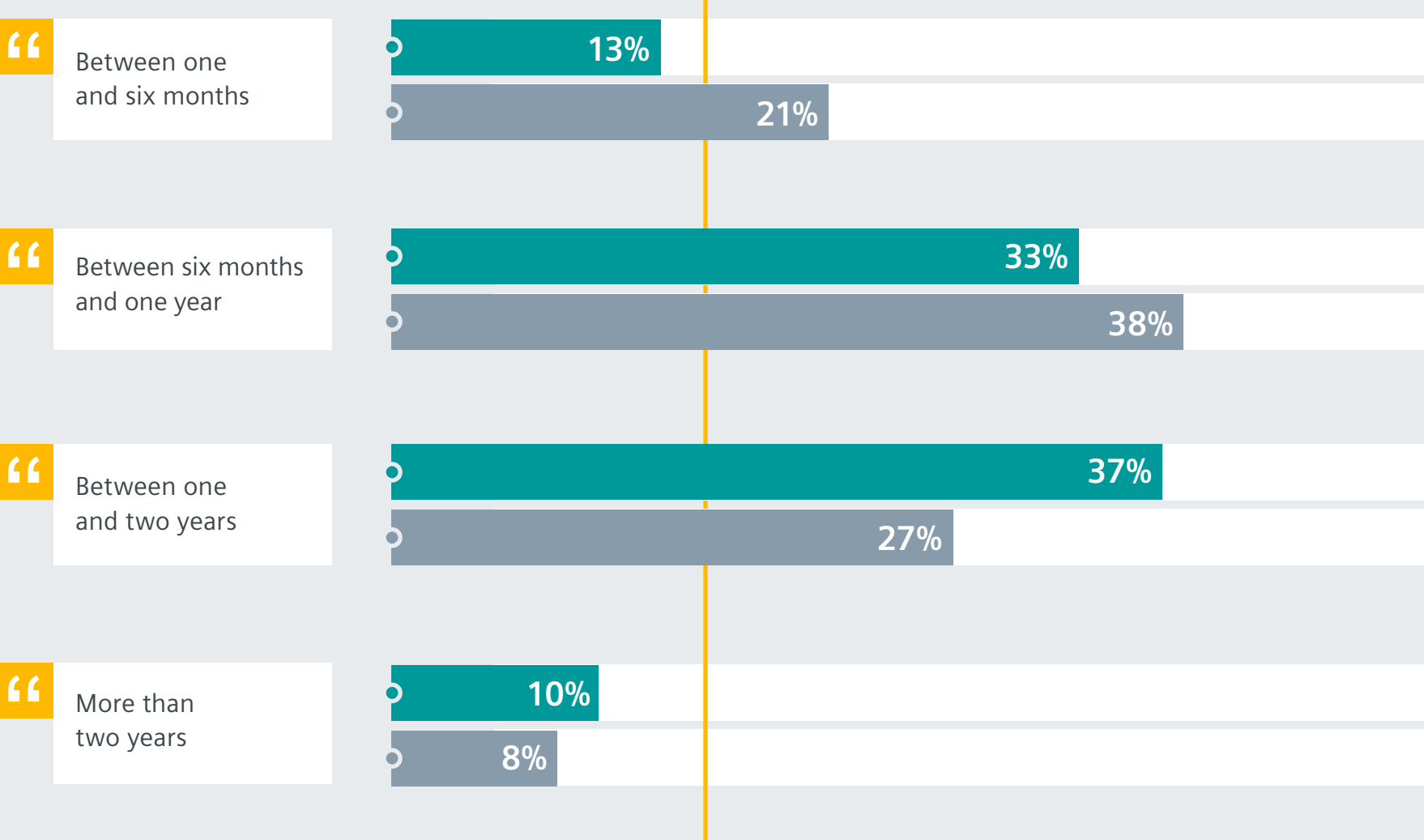


The rational choice in this scenario is that equivalent performance (useful predictions 50% of the time) should suffice, as we save the labor of the **Employee Group** by switching to AI-Sim.

Respondents demanding outperformance arguably have a stronger emotional (irrational) aversion to letting AI do the job.

By contrast, energy respondents demand less outperformance than the average, with **69%** accepting 50% or 60% from AI-Sim (compared to **58%** for all industries), suggesting a more rational outlook from energy respondents.

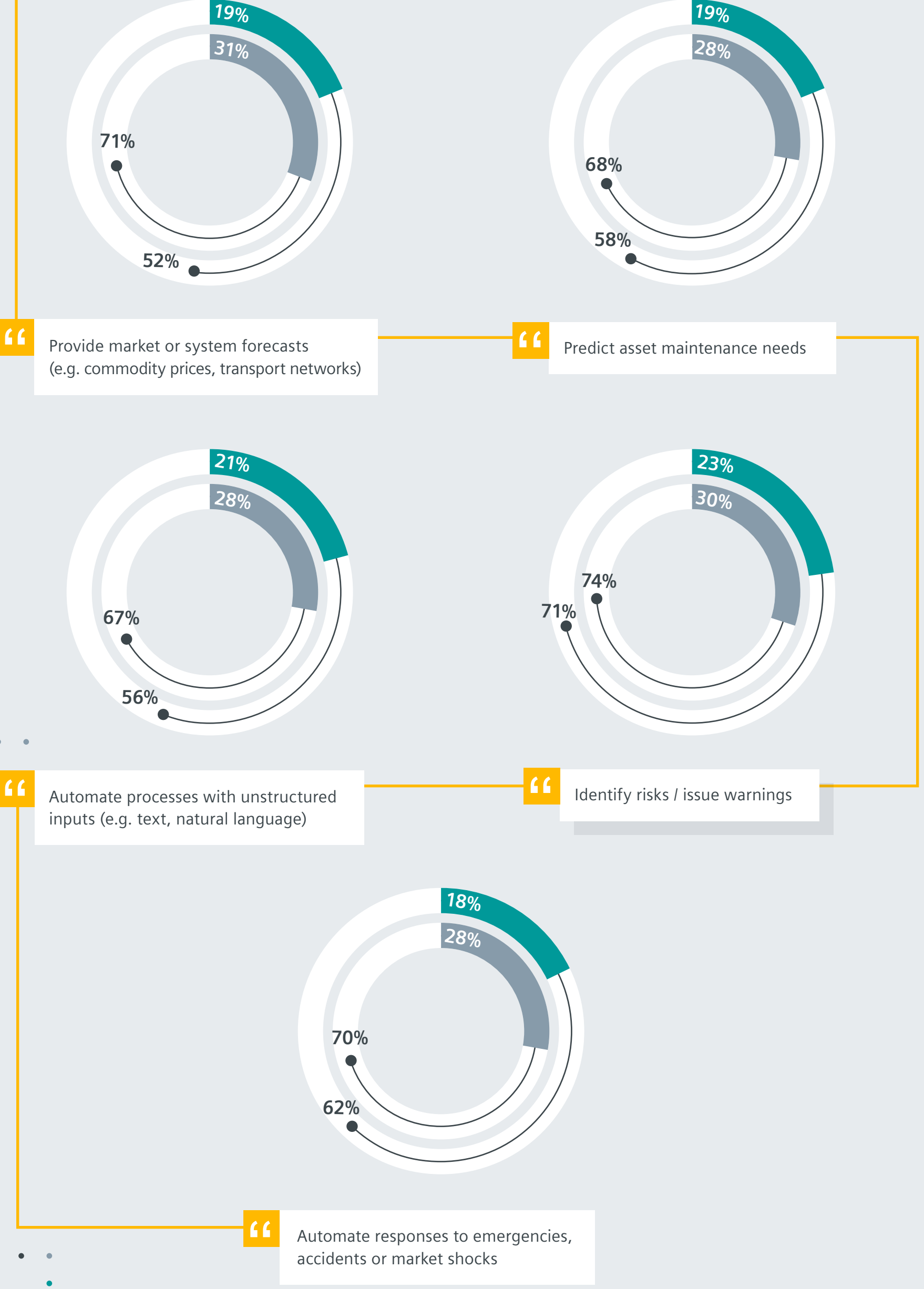
We then asked for roughly how long AI-Sim would need to demonstrate the required level of performance relative to the **Employee Group** for respondents' organizations to give control to the AI model.



The duration required is arguably a reflection of the level of risk associated with letting AI-Sim take the reins.

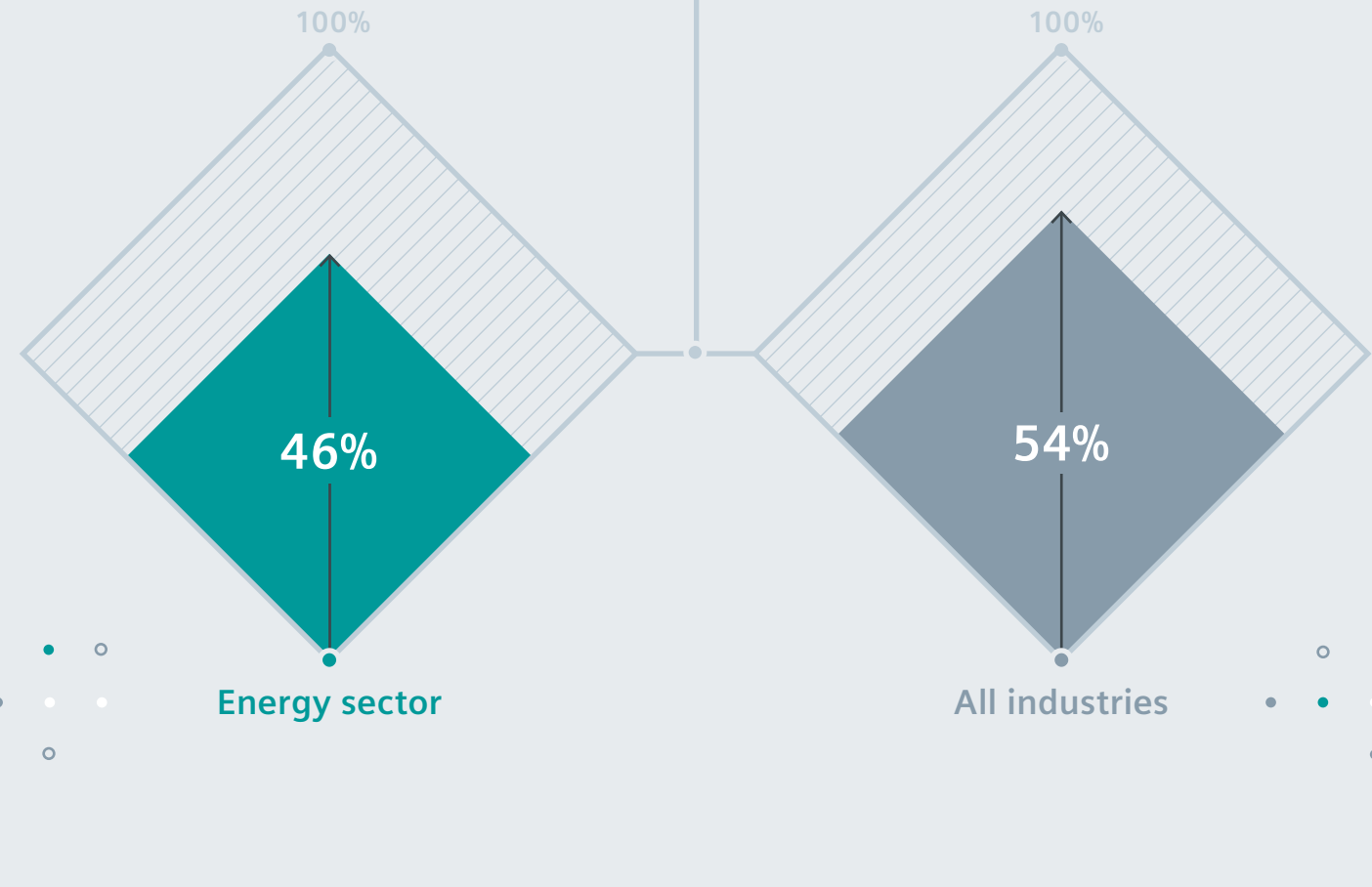
In the energy sector, unworried safety, high-cost assets and the need to maintain uninterrupted services amplify the risks.

This may be why energy respondents report lower current benefits – and near-term expected benefits – from AI applications that:



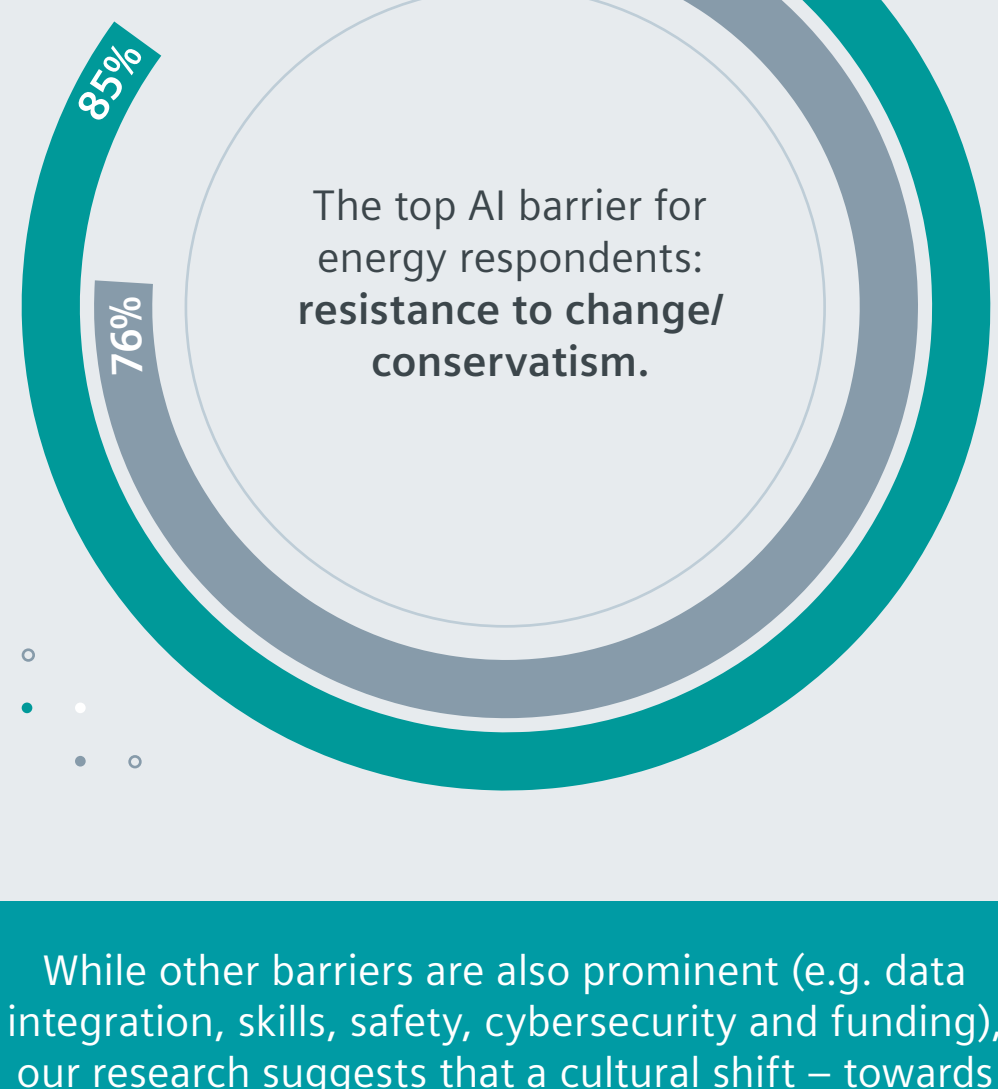
Even looking five years ahead, fewer than half of energy respondents think that their organizations are likely to give AI full control of any high-value assets within that timeframe.

Within the next five years, an AI system autonomously control some of my organization's high-value assets



Taken together, the results of our research show energy leaders are rational about AI's potential, while being cautious about its implementation.

Much of this caution is well-placed, given the importance, value and risks associated with energy assets. However, respondents report that there is an even more significant barrier to further implementation of AI...



While other barriers are also prominent (e.g. data integration, skills, safety, cybersecurity and funding), our research suggests that a cultural shift – towards embracing new ideas, models and processes – is needed in order to overcome these barriers and accelerate the benefits of AI applications in the energy sector.