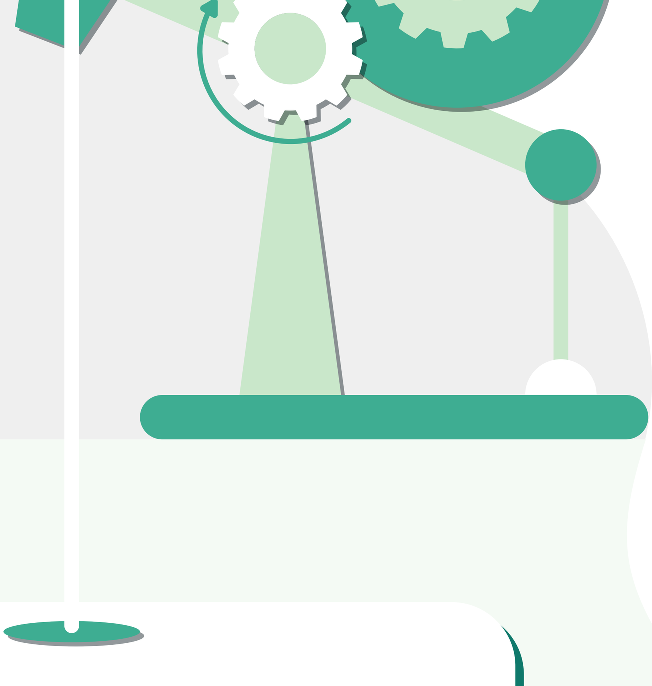
Toward Lower Emissions in Upstream Oil and Gas

Many companies are exploring how to cut their carbon emissions—including oil and gas companies. They face relentless and growing pressure to work toward a more sustainable future.

Companies must begin to reduce upstream emissions

Oil and gas upstream operations—exploration, drilling, and production—will always involve some level of emissions, but companies have a lot of room to improve. **An upstream asset can emit seven times as much CO_2 as a similar asset in a nearby oilfield.**

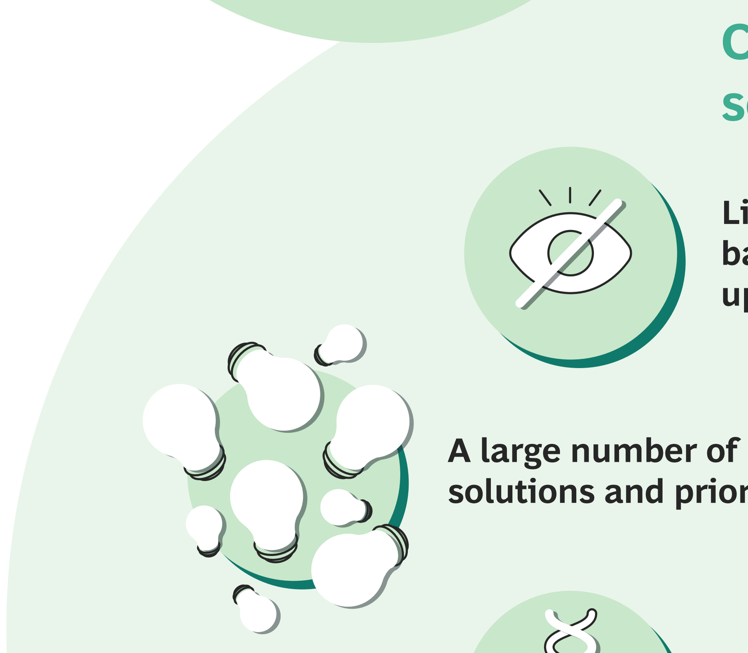
Simply divesting or shutting down oilfields is not enough. Companies need to actively reduce emissions by reconfiguring equipment and adapting their processes, workflows, and mindsets.



Decarbonizing oil and gas assets is complex

Most companies have broad networks. Facilities are often in remote parts of the world, and they have different operating parameters and priorities.

Even companies that have set ambitious emissions-reduction targets may not be ready to make the investments and operational changes that are required to achieve their goals.



Companies must confront several challenges

Limited visibility into their emissions baseline and the performance of individual upstream assets

A large number of potential solutions and priorities

Rapidly changing regulations

No clear business case for investments

Limited incentives, experience, and guidance from the leadership team

The urgency is growing

The cost of carbon emissions will almost certainly increase. Currently, only about 25% of global emissions are covered by countries' carbon-pricing systems, but more governments will likely launch such programs. That will lead to correspondingly larger risks for oil and gas companies that don't take action—and greater opportunities for those that do.

The risks

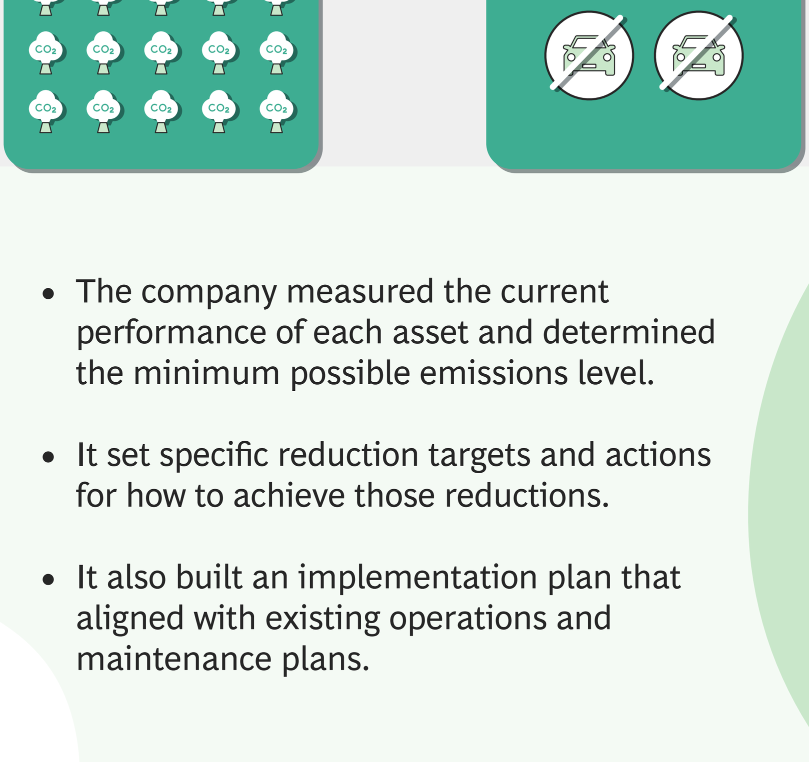
Companies could lose access to capital if investors move their money to greener options and asset classes. In extreme cases, companies could even face challenges to their license to operate.

The opportunity

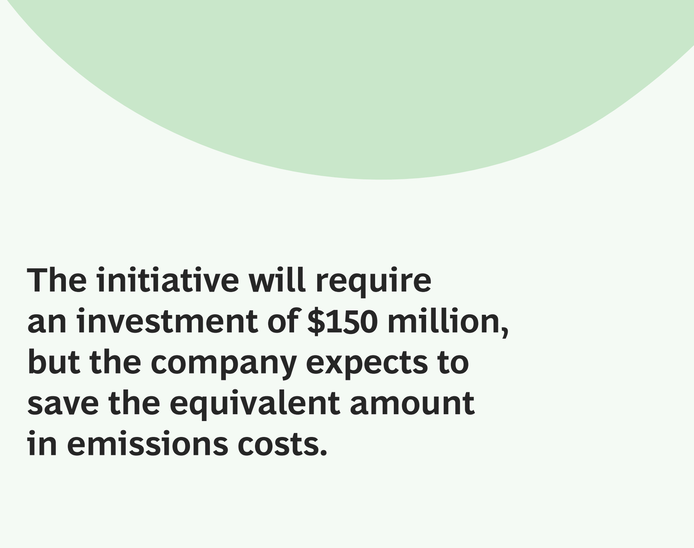
Successfully reducing CO_2 emissions from upstream operations can help differentiate an oil and gas company, making it more attractive to governments, customers, investors, and employees. BCG's analysis found that top ESG performers see multiples that are 3% to 19% higher than those of median performers.

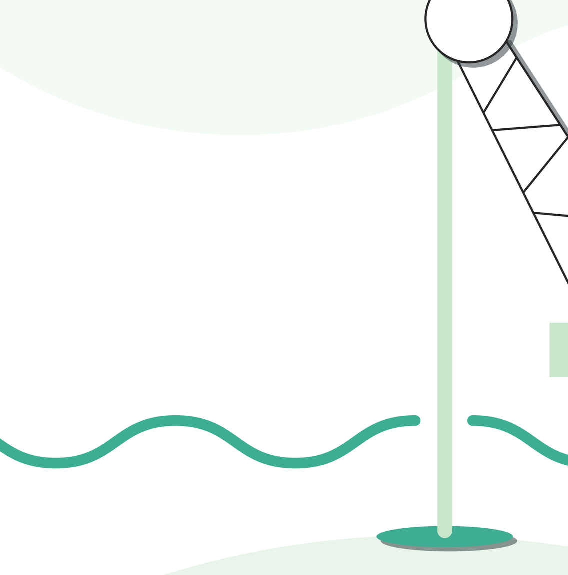
How one company is taking action at no cost

A European energy company developed a plan to reduce the emissions of its upstream assets by 500,000 tons of CO_2 each year.

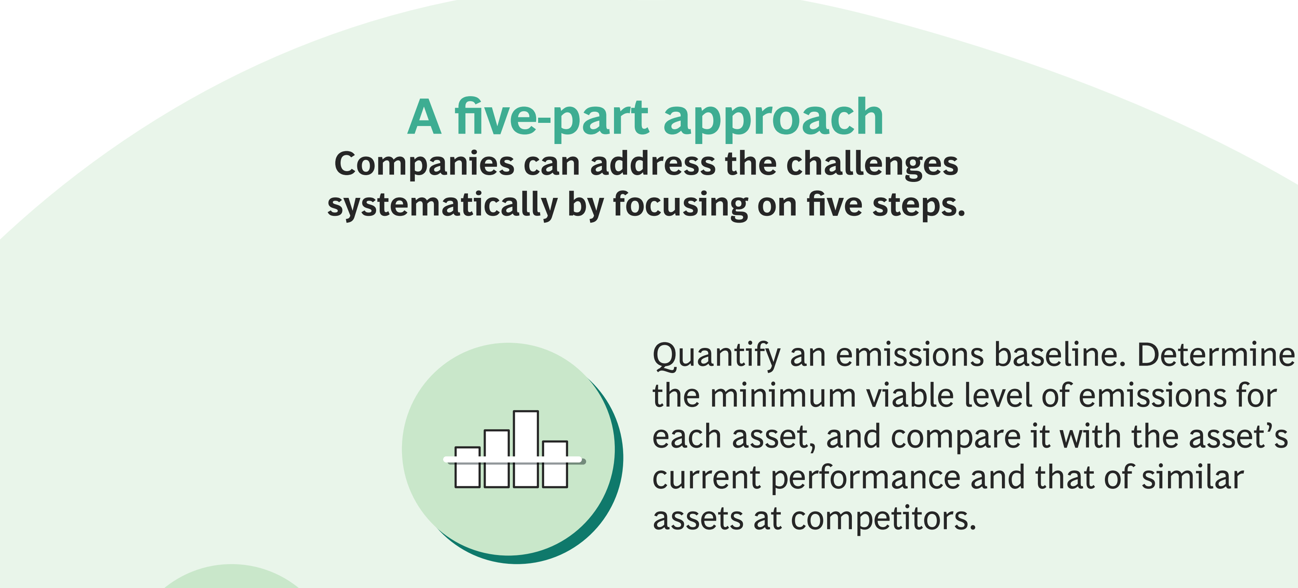


- The company measured the current performance of each asset and determined the minimum possible emissions level.
- It set specific reduction targets and actions for how to achieve those reductions.
- It also built an implementation plan that aligned with existing operations and maintenance plans.





The initiative will require an investment of $150 million, but the company expects to save the equivalent amount in emissions costs.



A five-part approach

Companies can address the challenges systematically by focusing on five steps.

Quantify an emissions baseline. Determine the minimum viable level of emissions for each asset, and compare it with the asset's current performance and that of similar assets at competitors.

Identify solutions and set targets for each asset.

Develop an implementation plan for each asset that includes key milestones and objectives.

Align relevant partners—including suppliers, equity partners, and governments.

Execute the change so that it is in line with the company's organizational structure, governance, and incentives.

Take deliberate steps to shift employee mindsets through proactive communication about CO_2 emissions. Measure performance over time, and adapt to evolving technology and regulations.