Decarbonization in energy and manufacturing

Emphasizing the role of financial executives

The start of a new era

With trillions of dollars and the interest of stakeholders at risk, Deloitte set out to probe the role of financial executives in influencing and executing their organization's decarbonization strategy (D-strategy) by surveying close to 140 executives in the US energy and manufacturing industries. The onus to abate emissions is the highest on these industries, and any progress by them could set the direction for other industries.

According to our survey:

- Seventy-three percent of surveyed financial executives stated that their organizations have a D-strategy, but less than half of them had a decision-making or influencing role in developing these strategies.
- The lack of clear and consistent environmental, social, and governance (ESG) reporting guidelines emerges as the biggest challenge for over half of the executives surveyed.
- Organizations with decision-making participation of financial executives have the most comprehensive decarbonization strategy and are committing higher dollars for green investment (greater than 10% of their future cash flows) among respondents.
- Only 17% of surveyed financial executives see money spent on decarbonization as a profitable investment.
- Organizations with decision-making participation of financial executives and higher investment proportion for green seem to have found a new cash flow equation to fund their D-strategy, while their counterparts tend to follow the traditional cash flow allocation.

Challenges ahead of financial executives are new and many, something not seen in a disclosure and financial context since the introduction of Sarbanes-Oxley in 2002 and the financial crisis of 2008, respectively. But the investment challenges inherent in transitioning to a low-carbon economy provide a unique opportunity for financial executives to lead in the world's biggest business and financial transformation.

ESG metrics are becoming as important as earnings per share, meaning that the perspective and role of the CFO's office should stay one step ahead in this evolving environment.

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Vice Chair - US Energy, Resources & Industrials Leader

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About the survey

The objective of the study is to uncover costs, risks, opportunities, and reporting disclosures related to decarbonization plans, strategy, and goals of financial executives in the energy and manufacturing industries. Deloitte surveyed 140 US financial executives in finance, tax, audit, and comptroller roles.

The survey was fielded in August 2021.

About the survey: Themes

Strategy
The role of financial executives in developing and strategizing the future for net-zero growth in the business at an organization level

Challenges
Challenges faced by financial executives in enabling and executing their organization's decarbonization strategy

Economics
Responsibilities of financial executives in estimating economics and extracting value from decarbonization investments

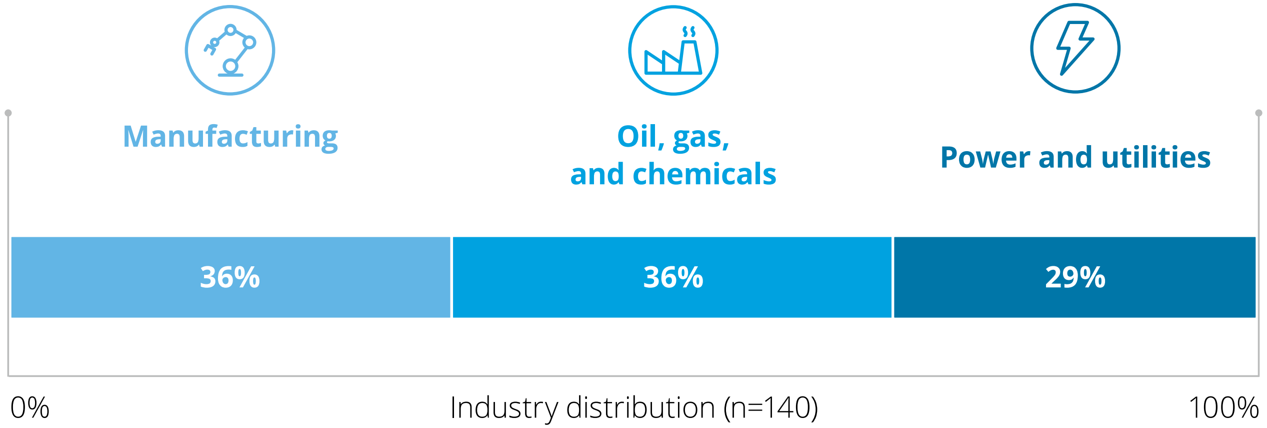
Support
Regulations, policies, and measures that will help financial executives to encourage and protect decarbonization investments

Funding
Key funding avenues that financial executives will tap into to fund their organization's decarbonization strategy

Industry nuances
Cuts by financial executives from three industries (oil, gas, and chemicals; power and utilities; and manufacturing)

Note: See the Appendix for specific questions.

About the survey: Demographics



Note: Survey results throughout this document may show amounts that sum to more or less than 100% due to rounding.

Manufacturing: Includes companies from the aerospace and defense, engineering and construction, heavy machinery and equipment, and diversified industrial products sectors.

Oil, gas, and chemicals: Includes upstream, midstream, and downstream companies, as well as chemicals and specialty materials companies.

Power and utilities: Includes vertically integrated electric power companies, along with electric power (or electric and gas) generation, transmission, and distribution companies.

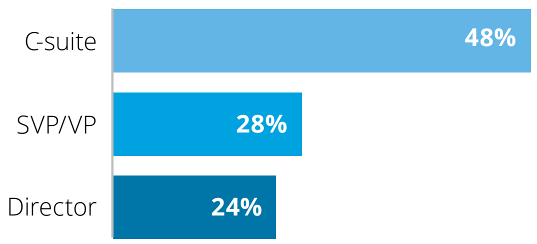
Taxonomy

- **Financial executives/office of the CFO:** Director and above in finance, tax, audit, and comptroller roles
- **D-strategy:** Decarbonization strategy
- **D-role:** Financial executives with decision-making role in the D-strategy of their organization
- **NDM:** Financial executives with non-decision-making participation in the D-strategy of their organization
- **Future-focused organizations:** Organizations that plan to invest more than 10% of their future cash flows in decarbonizing their operations, and where financial executives are in decision-making role
- **Conventional organizations:** Organizations that plan to invest less than 10% of their future cash flows in decarbonizing their operations, and where financial executives are in non-decision-making roles

Definitions

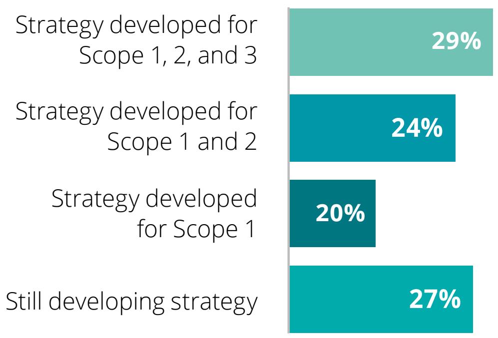
- **D-strategy only for Scope 1:** An organization has a broad decarbonization strategy and goals, focused on reducing direct GHG emissions
- **D-strategy for Scope 1 and 2:** An organization has a carbon neutral strategy, focused on reducing direct and indirect GHG emissions from operations and vendors
- **D-strategy for Scope 1, 2, and 3:** An organization has a net-zero goal and interim targets, focused on reducing direct and indirect emissions from the processes and value chain

Current role of respondents in their organization:

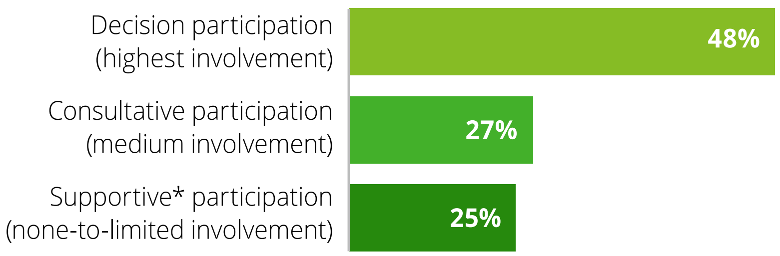


Note: This includes finance, tax, audit, or comptroller roles only.

Decarbonization strategy of respondents' organization:



Participation of financial executives in their organization's decarbonization strategy:



**In form of financial, informative, or administrative role.*

Taking the challenge

With an emission share of more than 75%[1] and cumulative debt of $2 trillion,[2] the energy and manufacturing industries are reaching an inflection point.

Are financial executives ready for this challenge? Will their traditional roles suffice?

Counting the carbon

Climate risk and carbon liabilities run into trillions, which is increasing pressure to act from a broad range of stakeholders. How should corporate management respond?

$4 trillion in green capex requirement[3]

About $4 trillion in annual clean energy investment is likely needed by 2030 to achieve net-zero emissions by 2050.[4]

$1.26 trillion at risk

About $1.26 trillion in revenue losses is anticipated for suppliers within the next five years due to climate change, deforestation, and water insecurity.[5]

Cost of inaction is $4 trillion to $15 trillion

The absence of behavior change, restrictions on bioenergy use, and failure to develop carbon storage solutions could raise investment to meet net-zero emissions by an additional $4 trillion to $15 trillion.[6]

Elevating role of financial executives enables organizations to lead the low-carbon future

Suggested green roles for financial executives

1. Fulfill net-zero ambition
Many companies have committed to net-zero targets by 2050, and alignment with the CFO office is important to achieving this.[7]

2. Develop low-carbon pathways
Energy transition is expected to require a 10–30-year investment strategy, encompassing several decarbonization scenarios.

3. Become the business partner
Transitioning from a singular-focused financial expert to an all-encompassing strategic partner to business-unit heads can be key to realizing both environmental and economic goals.

4. Ascertain climate risks
A regular investigation of all channels through which climate-related risks may arise is important to formulate risk mitigation plans.

5. Identify green capital needs
Ascertaining costs associated with redesigning, retrofitting, and repurposing of processes, as well as investing in new green solutions, are the new asks.

6. Tap green finance
ESG assets under management are projected to be one-third of global AUM of $140.5 trillion by 2025.[8]

7. Evaluate the impact of changing policies
With every change in administration or a change in regulatory stance, reworking green economics becomes a daily affair.

8. Build and embrace new ESG standards
With more than 400 ESG metrics and submetrics, there are no standardized ESG reporting guideline.[9]

9. Incorporate ESG measures into executive compensation
More than 40% of the F100 companies are yet to incorporate ESG measures into their executive incentive plans.[10]

10. Enhance shareholder returns
With ESG investment picking, low-carbon companies are in demand and thus receiving new and higher multiples.[11]

Changing the lens to meet the challenge

Decarbonization is often considered a cost versus an investment.

Organizations should see senior financial executives as a strategist and catalyst for enabling their decarbonization strategy and adopting progressive ESG reporting guidelines.

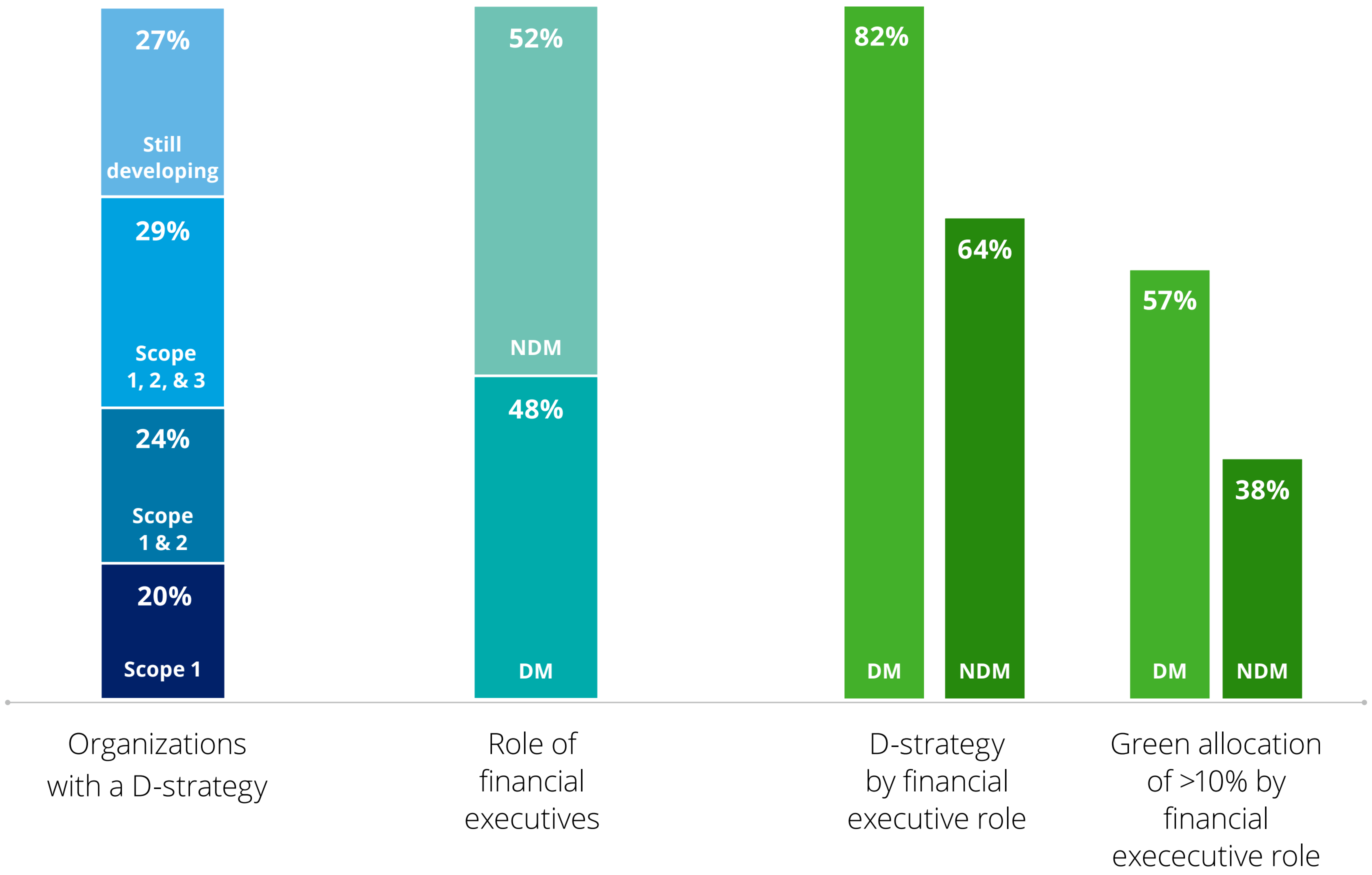
Financial executives have a key role to play in enabling their organization's D-strategy, but not all of them are currently at the table

Less than half of surveyed financial executives have a decision-making role in developing and enabling an organization's decarbonization strategy. Does it matter? Yes, it absolutely does.

A decision-making role for financial executives can fuel an organization's D-strategy...
Organizations where the role of the financial executive is core (decision-making level) are 82% more likely (compared to 64% NDM) to have a comprehensive climate action plan encompassing Scope 1, 2, and 3 emissions.

...and powers its commitment to change.
Organizations with financial executives in decision-making roles tend to invest a higher proportion of their cash flows (more than 10% of those surveyed) in clean energy solutions. On the contrary, organizations with less involved financial executives seem to be lacking a strong green purpose and intent in their investment strategy.

Decarbonization strategy and role of financial executives surveyed



Note: NDM and DM stands for non-decision-making and decision-making, respectively.

Majority of surveyed financial executives find lack of clear and consistent ESG reporting guidelines the biggest challenge in developing their D-strategy

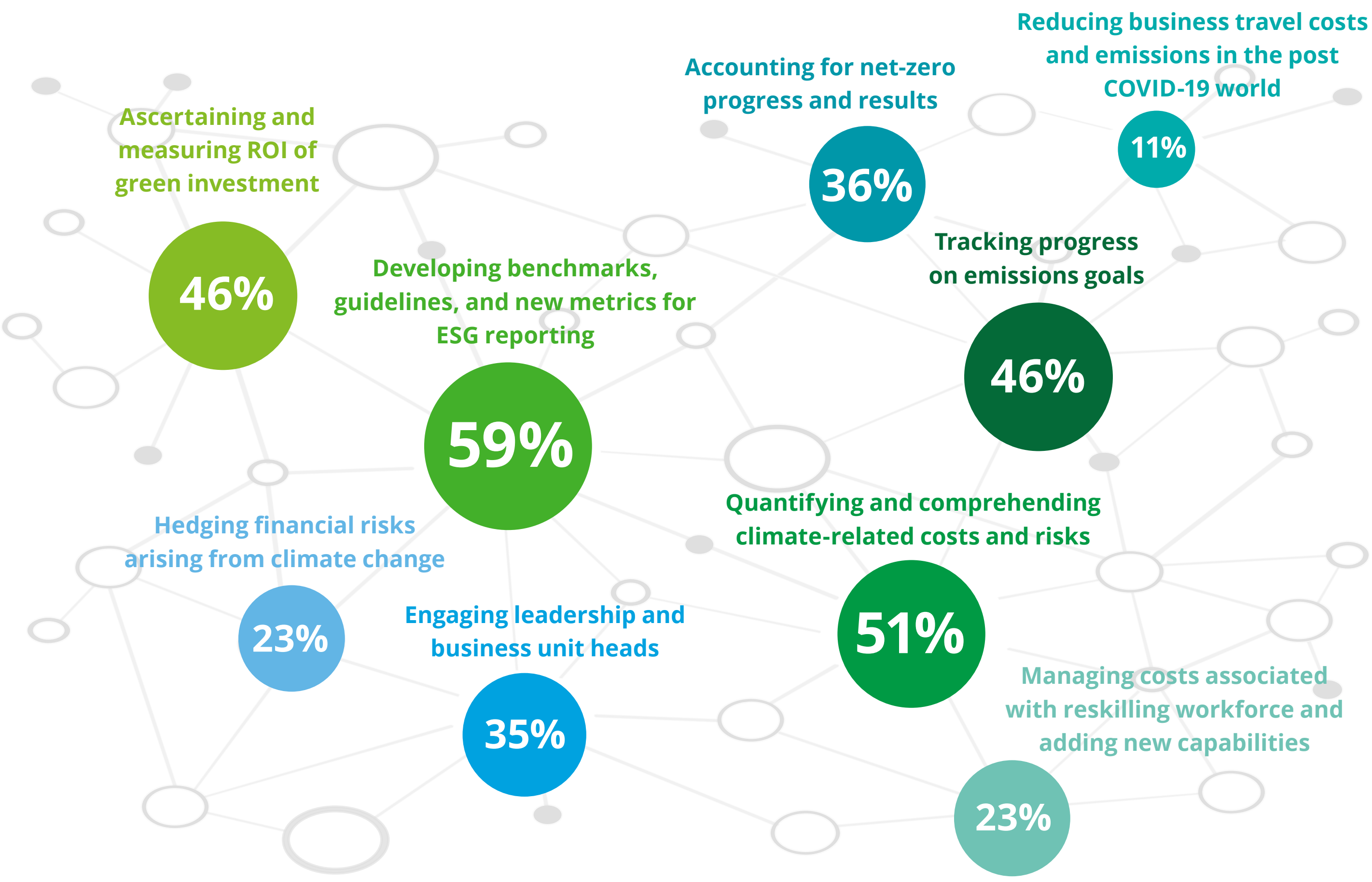
Without ESG reporting guidelines, many financial executives are figuring out the bare minimum.

Financial executives highlight many ESG-related reporting and disclosure challenges. Fifty-nine percent of financial executives surveyed have highlighted development of benchmarks, guidelines, and new metrics for ESG reporting along with quantifying climate-related costs and risks as key challenges to enable their decarbonization strategy.

The challenges and expectations will likely multiply, requiring financial executives to proactively go beyond the "bare minimum." The debate between which ESG-disclosures are the "bare minimum" and which are the "nice to have" will likely intensify over the years. Additionally, financial regulators may start putting the onus on financial executives to systematize and validate their organization's net-zero claims and progress to safeguard investors' interest.

Are financial executives ready to adopt and go by the [new] book? The SEC is already pursuing mandatory climate risk disclosure as part of the 10-K filing process by year-end 2021.[12]

Challenges faced by financial executives surveyed in developing their decarbonization strategy



Note: Survey respondents were asked to select all the challenges that apply.

Uncertainty of green economics might also be limiting forward movement: Are dollars spent on green seen as cost or investment?

Only 17% of surveyed financial executives (both decision-making and non-decision-making)—see money spent on decarbonization as a net cost savings or a profitable growth opportunity.

Decarbonization dollars are often considered costs instead of investments in the future. Eighty-three percent of surveyed financial executives see money spent on decarbonization as a cost. This take is likely limiting their organizations from going big on green. About 75% of surveyed executives plan to spend less than 25% of their future cash flows on green initiatives over the next three years.

Right now, green initiatives may be less profitable. But financial executives should change their lens and include "social benefits" into their new value equation. Current green ROI is lower. But investments in green give a license to operate and thrive due to its scalability and tech maturity in the long run (resulting in low risk, and thus the new risk-return trade-off).

Financial incentives including grants, credits, and R&D support are the option most selected (31%) by financial executives surveyed to safeguard their green investment and enhance ROI.

Perception and commitment of respondents toward decarbonization investment

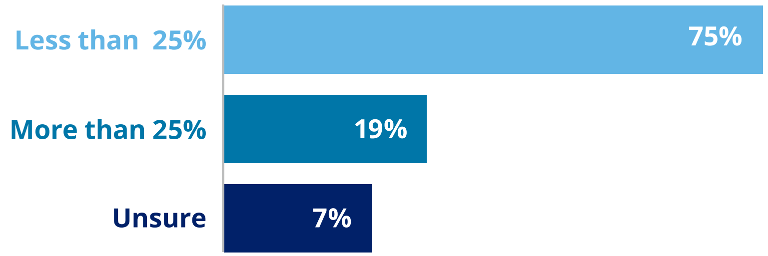
Mindset

About the money spent on decarbonization

35%	19%	16%	14%	9%	8%
Essential cost to stay relevant and competitive in the marketplace	Unavoidable cost to ensure regulatory compliance and business continuity	Necessary marketing and branding cost with long-term gains	Cost with marginal or uncertain savings and gains	Investment with net cost savings in the long term	Investment for new revenue or growth opportunities

Result

As a percentage of future cash flows toward decarbonization



Approach

For funding the decarbonization strategy

1 in 3

Financial executives surveyed are looking for financial and tax incentives to safeguard their decarbonization investment

Funding the green

Financial and tax incentives from governments and regulators are important, but the math is more complicated.

Internal cash flows will likely not be enough to fund decarbonization. From reprioritizing use of future-growth capex, exploring partnerships to share capital and risks, tapping into green bonds and tax credits, to divesting carbon-intensive resources, the options are unlimited for organizations.

Respondents of both future-focused and conventional organizations indicate government action is important to resolve challenges and create the “new” playing field, with notable differences

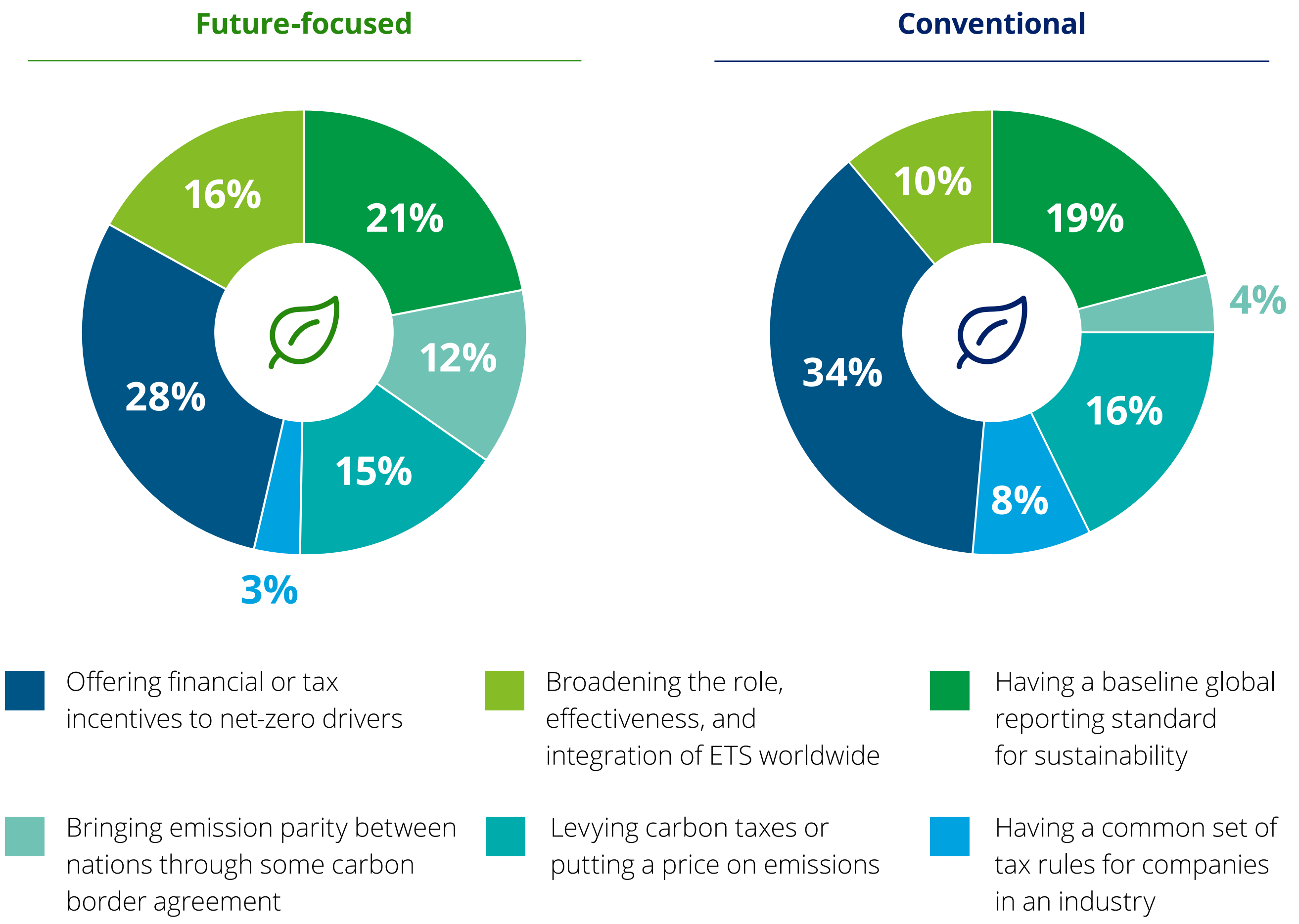
Future-focused organizations—with involved financial executives—anticipate broader changes affecting not just their own company’s bottom line.

Grants and incentives by governments are key to both future-focused and conventional organizations...
Both future-focused (28%) and conventional (34%) organizations seem to be relying on grant and tax incentives from the government for protecting and encouraging their decarbonization investment. With the US government considering a $3.5 trillion spending blueprint, the D-strategy of both future-focused and conventional organizations needs to adapt to new tax credits and climate legislations.

...but the intent of seeking grants and incentives differs between the two groups.
Conventional organizations seem to be largely seeking financial and tax incentives to improve their organization’s bottom line and competitiveness. On the other hand, most future-focused organizations seem to be seeking support to create the “new” playing field until emissions parity between nations is achieved, reporting is standardized, and emissions trading systems (ETS) are integrated.

The bottom line:
This financial strategy of conventional organizations—spend less on green (less than 10%) and ask for more support from government (34%)—may invite questions from investors on their green commitment and competitive capability without incentives.

Exploring the green math: Protecting or encouraging decarbonization investment



How are financial executives planning to fund their D-strategy? Does this mean breaking away from the traditional, linear internal cash flow allocation approach?

Future-focused organizations—with involved financial executives—are largely ready to explore a new cash flow equation, while many of their counterparts still follow the traditional approach.

Future-focused organizations tend to be exploring a new cash flow equation...
The top three choices of surveyed future-focused organizations to fund their D-strategy are reprioritizing use of future growth capex (32%), exploring JVs and partnerships to share capital and risks (20%), and divesting carbon-intensive resources (15%). These organizations are positioning to initiate financial transformation to grab the green opportunity.

...whereas their counterparts are generally following the traditional cash flow allocation approach.
About 36% of respondents from conventional organizations use internal cash flows from operational savings as their primary funding channel. These organizations seem to be maintaining their historical cash flow allocation approach, not exploring new avenues.

Tapping ESG funds and issuing green bonds and tax credits (8%) are still not the primary funding channels of most respondents as they are seen more as a valuation play (especially ESG funds). Future-focused organizations will increasingly monetize these routes.

Deciphering financial equations: Respondents' primary channel to fund organization's decarbonization strategy

Future-focused

32%
Reallocate growth capital from carbon-heavy resources, assets, businesses, or product lines

20%
Explore partnerships and joint ventures to share capital and monetize tax benefits

15%
Divest carbon-heavy resources, assets, businesses, or product lines

Conventional

36%
Use internal cash flow from operational savings

2x
Twice as likely to seek assistance and grants from government or regulators

Industry nuances

There is no one-size-fits-all solution.

Stressed financial health of oil companies, evolving regulatory landscape for power and utilities, and hard-to-abate sectors in manufacturing add new levels of intricacies for financial executives.

Financial executives of oil, gas, and chemicals (OG&C) corporations should break away from managing oil price cycles and develop a purpose-driven strategy to create sustainable value.

Current issue

Managing commodity price cycles amid falling interest of stakeholders

Progress made

Capital allocation for green is growing
Fifty-two percent of OG&C respondents plan to spend more than 10% of their future cash flows on green.

OG&C is not behind in decarbonization
Seventy-eight percent of OG&C respondents state that their organization has a low-carbon strategy.

Challenges faced

Strong oil prices may create a rift
Forty-six percent of respondents state that they would accelerate transition while 40% plan to sustain or grow hydrocarbons.

Giving away hydrocarbon's high cash flows isn't easy
Thirty-six percent of OG&C respondents highlight hydrocarbon cash flow and returns as their biggest trade-offs.

Money spent on decarbonizing has yet to become a profitable investment proposition
Eighty-two percent of OG&C respondents highlight decarbonization as a cost.

Actions to be considered

Break the strategy conundrum
Uncertainty in decision-making is accepted, but a confused hydrocarbon or green energy strategy is not.

Give a new mandate to digital
Not only optimize operations but also safeguard the environment and health of employees.

Adopt and report progressive ESG metrics, benchmarks, and standards, irrespective of the selected pathway.

Desired state

Leading in the net-zero world

Adopting a portfolio mindset to benefit from green synergies can go a long way in aligning multiple stakeholder expectations for power and utilities (P&U) companies.

Current issue

Gathering new clean energy assets amid an evolving policy landscape

Progress made

The decarbonization strategy and commitment of P&U financial executives is apparent
About 73% of P&U financial executives plan to spend more than 10% of their future cash flows on decarbonization indicating high allocation toward green. This allocation can assist in managing the evolving compliance and regulatory mandates.

P&U financial executives are determined to play a decisive role in realizing decarbonization gains
About 85% of respondents are either in decision-making or consultative roles.

Challenges faced

Timely rate base expansion and justifying the ROI of decarbonization investments remain their primary challenge
About 30%-40% of P&U financial executives surveyed highlight it as their top challenge.

Evolving regulatory, policy, and market landscape is complicating their long-term planning
About 40% of P&U financial executives surveyed highlight it as a limiting factor.

Actions to be considered

Rate-design reforms, including moving away from volumetric cost recovery to targeted performance-based ratemaking (PBR) related to carbon

Updating utility planning methodology from a deterministic approach to a probabilistic approach

Desired state

Being sustainability champions in a net-zero world

Manufacturers are gradually accelerating their sustainability efforts, but the diverse nature of their business makes it difficult for them to focus those efforts.

Current issue

Long-lived asset base with high retrofit and upgrade cost

Progress made

Capital allocation for green remains low as it is seen as a cost
Fifty-eight percent of financial executives surveyed plan to spend less than 10% of their future cash flows on green, and 86% of those surveyed see decarbonization as a cost.

Ongoing challenge to decarbonize the toughest manufacturing sectors
Fewer than 25% of respondents have a net-zero goal with one-third yet to announce their decarbonization strategy.

Challenges faced

Fossil fuel dependency in logistics and processes, design restrictions, integrated processes, and costly rebuilds limit sustainability goals of manufacturers

Competitive manufacturing practices of less carbon-efficient producers and lack of readiness from supply chain partners limiting decarbonization progress
More than one-third of respondents have highlighted these two as limiting factors in their strategy.

ESG-related reporting, risk, and financial challenges
More than 20% of respondents have mentioned hard-to-abate business processes due to their heat-intensive requirements as their limiting factor.

Actions to be considered

Modification of product designs and production processes to deliver highest sustainability ROI
One-third of respondents state that developing a greener product family and driving sustainability commitments from suppliers can help increase ROI.

Greater focus on MRO and sourcing materials and energy from green vendors can be key to decarbonize hard-to-abate business processes
Close to half of the respondents agree that focus on MRO and green sourcing will help in achieving decarbonization goals.

Desired state

Remaining competitive while adhering to sustainability focus of customers and shareholders

The evergreen winning math

The evergreen winning math

A strong, committed, and participative green proposition can lead to higher value creation.

[{ **Progressive green strategy** + **Proactive governance** } × **Strategic investment allocation**] ^ **Elevated role of financial executives**

= **ESG complementing earnings per share (EPS)**

For a sustained value creation

Let's talk

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Appendix

Primary survey questions

Decarbonization themes

1. Strategy and role of financial executives
Does your organization have decarbonization or net-zero goals? What is the level or degree of your (the role's) participation in developing your organization's decarbonization strategy?

2. Challenges
In your current role, what challenges do you face in developing a decarbonization strategy for your organization?

3. Economics
What does money spent on decarbonization mean for your organization?

4. Support
Which of the following would provide a level playing field to your organization and protect and encourage its decarbonization investments?

5. Funding
How does your organization intend to fund its decarbonization strategy? What percentage of future cash flows does your organization intend to spend on decarbonization over the next three years?

Industry-specific

Oil, gas, and chemicals

- Would higher oil prices (above $60/bbl) impact your organization's decarbonization strategy and timeline?
- What is the biggest trade-off for your organization to embrace its decarbonization strategy?
- Which part of the clean energy value chain would your organization be most interested to invest or grow in?

Power and utilities

- Which of the following is key for your organization to realize its decarbonization goals?
- What is limiting your organization to pursue its decarbonization strategy?
- What can hasten your organization's decarbonization progress?

Manufacturing

- Which of the following programs will likely deliver the highest ROI for your organization?
- What is limiting your organization from realizing more gains from its sustainability strategy?
- For your hard-to-abate business processes, how do you plan to achieve your decarbonization goals?

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