



Integrating climate risk And opportunities through Internal carbon pricing

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February 2019

An internal carbon price is “**an internally developed estimated cost of carbon emissions,**” which “can be used as a planning tool to help identify revenue opportunities and risks, as an incentive to drive energy efficiencies to reduce costs, and to guide capital investment decisions.”

– The Task Force on Climate-related Financial Disclosures

Internal Carbon Price

Corporate Trends

Does your company use an internal price on carbon?

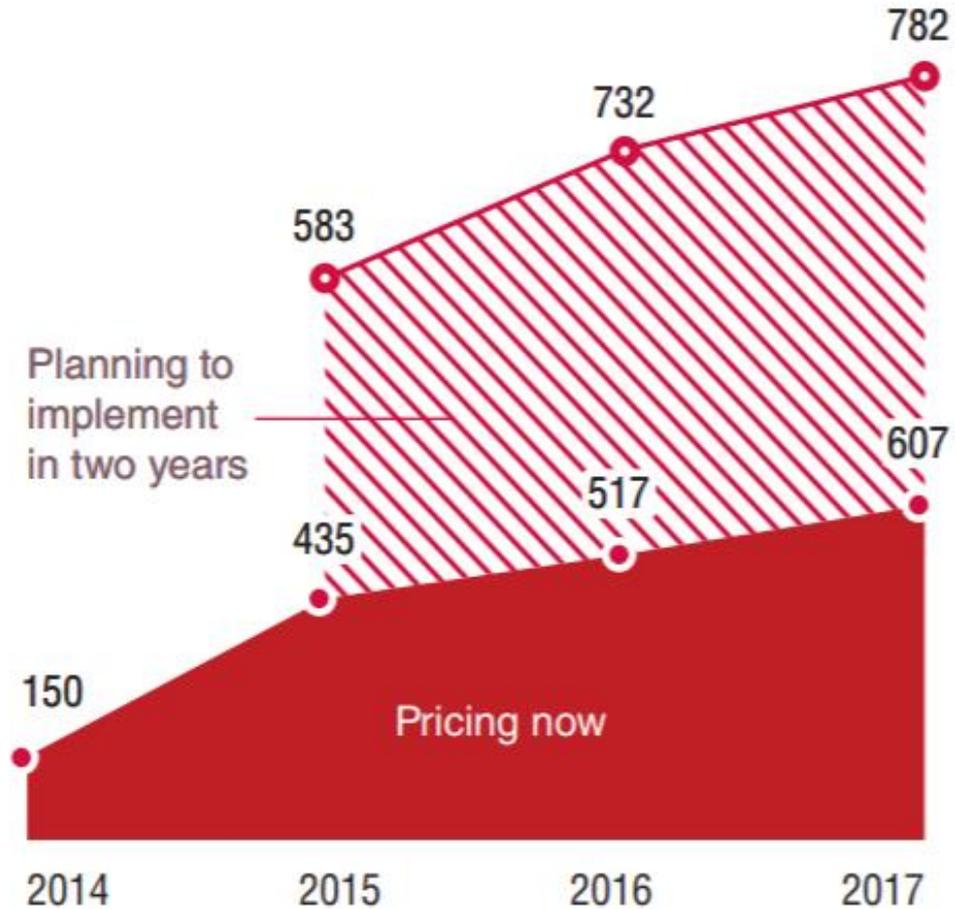
Yes

No, but we **anticipate** doing so in the next two years

No, and we **do not** anticipate doing so in the next two years

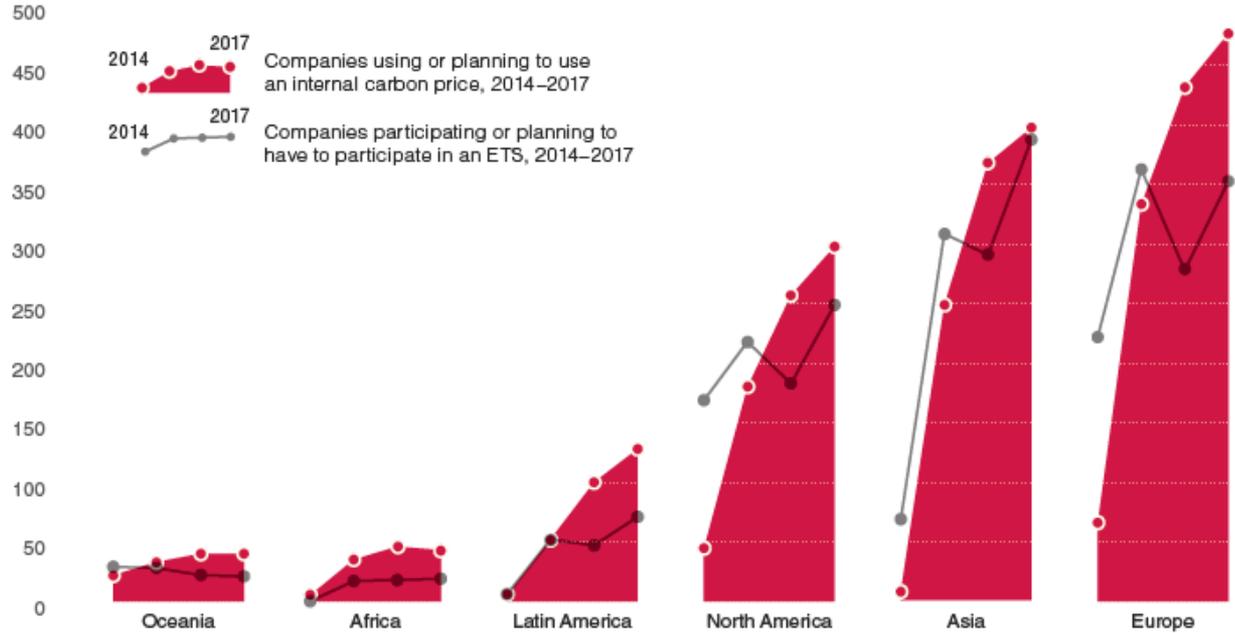
CDP Information Request (C11.3)

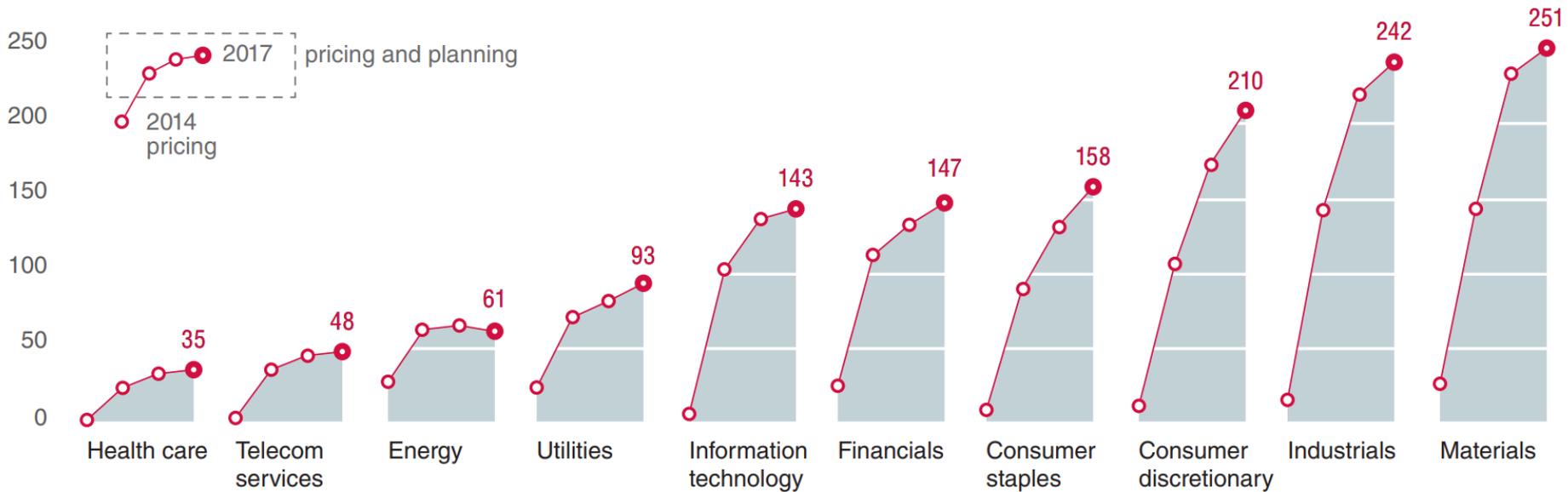
Annual Growth (global)





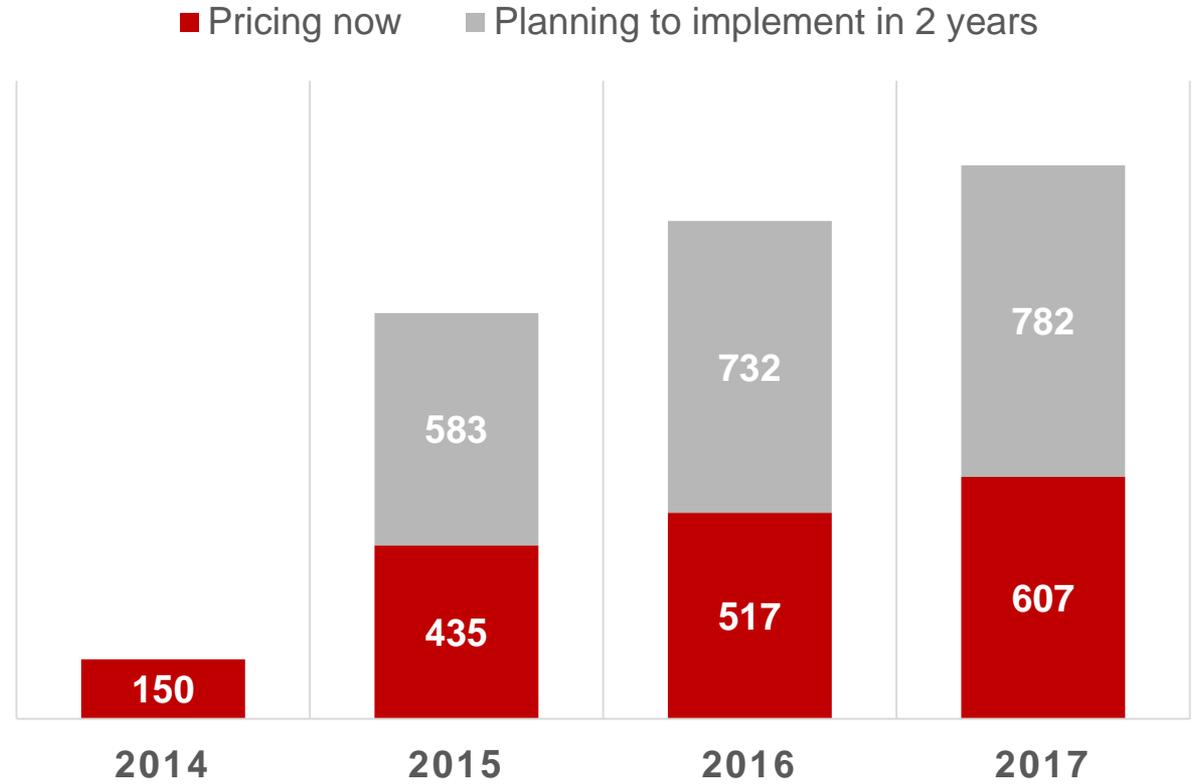
Growth of internal carbon pricing and policy expectations, by region





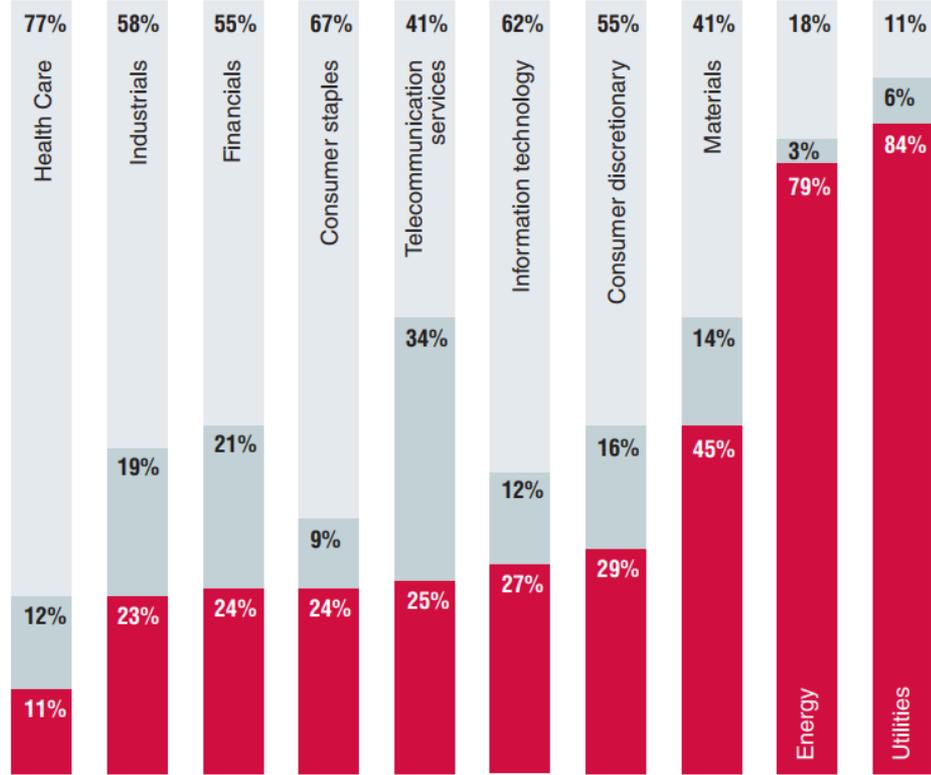
2014 numbers only include the number of companies that disclosed "Yes" to using an internal carbon price, whereas 2015–2017 also include companies that disclosed plans to use an internal carbon price within 2 years

Annual Growth



Sector Breakdown

Sector breakdown, by market-cap



■ Pricing now ■ Pricing by 2019 ■ Not pricing

This sample only includes investor-requested companies where financial information is publicly available. Average annual market-cap figures from 2016 were used.



Objective
for Use

Assess and manage risk

Identify opportunities

Transition tool



Navigate climate regulations; demonstrate management of risks to shareholders

Discover new market and revenue opportunities; meet consumer expectations

Accelerate GHG emissions reduction, drive low-carbon investment, align with 2°C scenario



“Internalizing carbon price signals is something the Task Force spent much time discussing. It can play an important role in companies internalizing transition risk and making different decisions within the company as a result.”

**Mark Lewis, Member of the Task Force
on Climate-related Financial Disclosures**





TCFD & Carbon Pricing

What: Industry-led initiative created by the Financial Stability Board (FSB) chair, Mark Carney.

TCFD specifically lists internal carbon pricing as a key metric to assess climate and energy transition related risks and opportunities

Objective: Integrate climate-related financial information in to mainstream reports for enhanced analysis and decision-making for lenders, insurers and investors

Companies and financial institutions are starting to use an ICP to analyze the potential impact of climate change on their operations and investment portfolios

CDP: Reimagining disclosure process to implement recommendations.

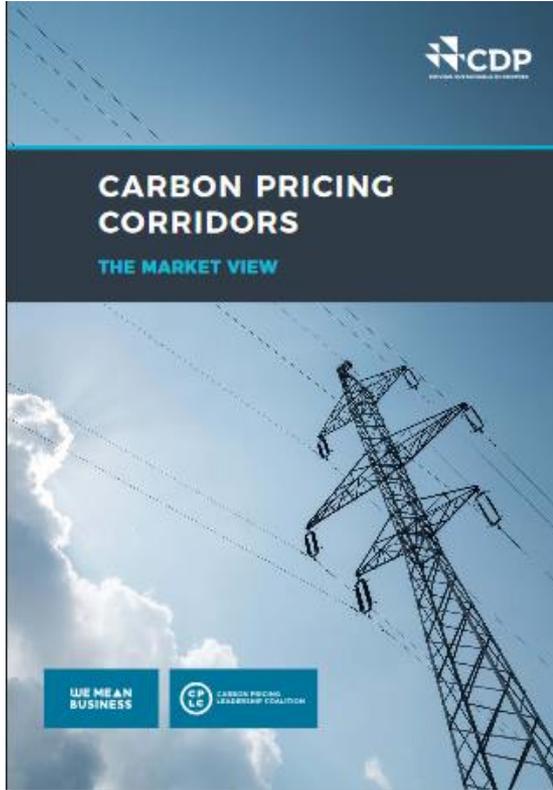
Carbon Pricing Corridors Initiative aims to translate the uncertainty of future carbon prices into scenarios of risk, facilitating the integration of carbon pricing into investment analysis.



Stress testing, built off better disclosure and a price corridor, could act as a time machine, shining a light not just on today's risks, but on those that may otherwise lurk in the darkness for years to come.

- Mark Carney, Governor of the Bank of England and Chair of the G20's Financial Stability Board





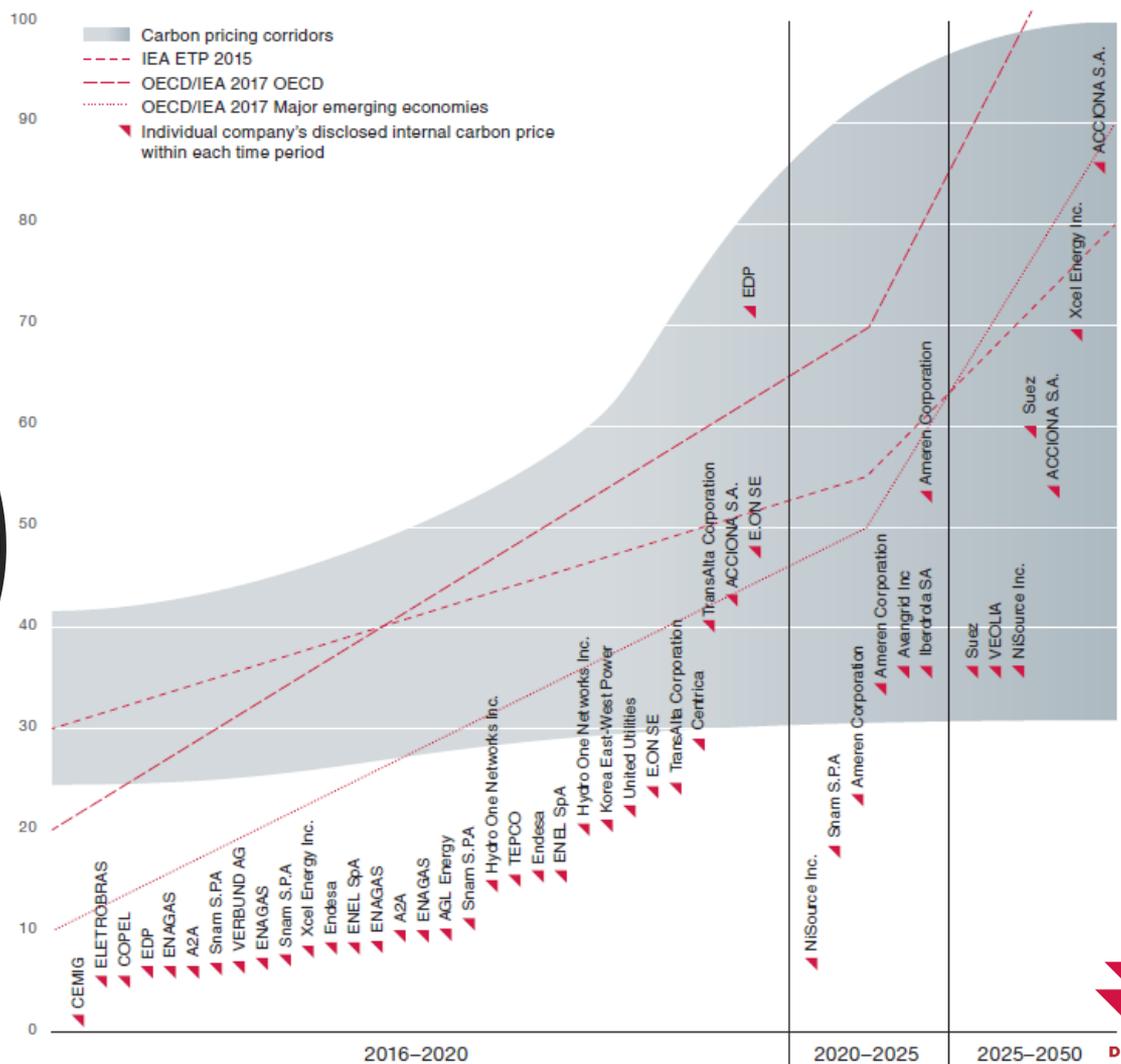
OBJECTIVE: to provide *investors*, companies and policymakers with an informed view of how **carbon-based price signals** develop to deliver a sub-2°C world as defined by the Paris Agreement

500+ companies are vulnerable to carbon pricing regulation and NOT using an ICP to manage this risk

Companies are not prepared for the medium- to long-term (15% assuming evolutionary price, and only ~10 utilities looking past 2025)

How does it impact business decisions // what are the implications on your bottom-line? Future value?

Disclosed Price levels & 2DS reference scenarios



Best Practice Approach

1

Engage the
business

2

Designing
the
approach

3

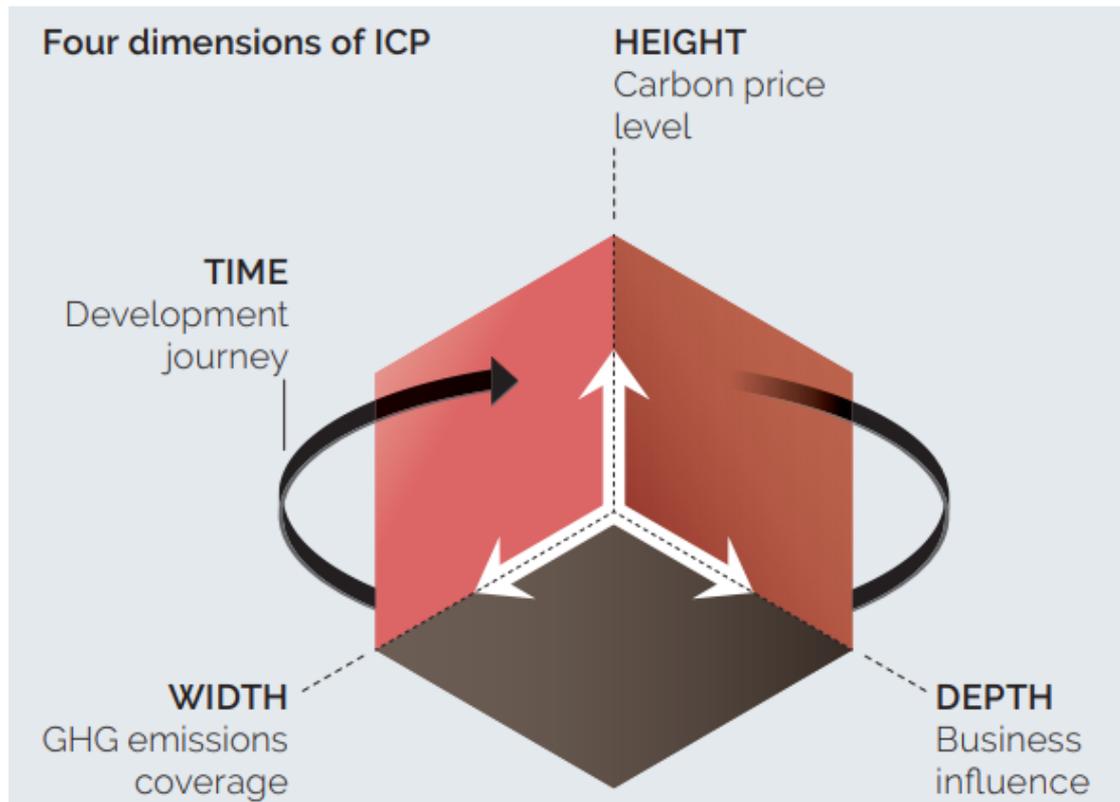
Rollout the
approach

4

Monitoring &
evaluating
approach



Four-step guidance



Four-dimensional best practice approach

Scope 1

- Investment and production decisions

Scope 2

- Energy purchasing decisions

Scope 3 (upstream)

- Materials sourcing and procurement decisions

Scope 3 (downstream)

- R&D decisions for innovative products for the current/ future market

Width: GHG scope coverage

Capital expenditure

Operational decisions

Procurement decisions

Product and R&D
decisions

Remuneration decisions



SHADOW
PRICING



INTERNAL
CARBON FEE

Collected fees used for climate action or rewarding low-carbon decisions		✓
Passing criterion in business decisions	✓	✓
Embedded in overall cost calculations as a financial indicator	✓	✓
Included qualitatively in the decision-making process	✓	
Tracking compliance prices without directly affecting business decisions	✓	

Depth: business application & degree of influence

Set a carbon value that will **affect the business decisions** that the ICP approach is trying to influence.

Type of price

(uniform vs. differentiated; static vs. evolutionary)

Price level determination method

Height: price level(s) & variance

For scenario analysis/assessment of risk and opportunities	For a transition tool that drives decarbonization
Based on price projections from existing or emerging carbon pricing regulations	Based on internal consultation (to determine price level needed to influence business decisions, or accelerate decarbonization)
Based on a benchmark against peers within a sector	Based on technical analyses of investment needed to achieve a specific climate-related objective (MAC curve)

Price determination method

Reveal hidden risks and opportunities in a company's own operations and supply chain.

4D Approach

- ▼ Large coverage (all scopes)
- ▼ Price range (US\$10-60)
- ▼ Weak influence (factor)

Owens Corning

Materials, USA

- ▼ Navigate regulatory environment
- ▼ Informed internal risk analysis and decision-making re current assets
- ▼ Strengthens the business case for EE, low-carbon purchasing, low-carbon transport

Risk management

Reduces emissions from manufacturing process, development of low-carbon products/services

4D Approach

- ▼ Low price, large coverage, weak influence
- ▼ High price, specific coverage

Saint-Gobain

Industrial, France

- ▼ Shadow price on energy-related investments
- ▼ Higher price to drive investment in R&D to accelerate the delivery of “breakthrough” technologies
- ▼ To increase market share in energy-saving products for existing and new-

Innovation in CAPEX

Reduce emissions,
operationalize, and fund low-
carbon strategy

4D Approach

- ▼ Low price (US \$1/t)
- ▼ Large coverage (all scopes)
- ▼ Strong influence (charge)

Viña Concha y Toro

Consumer Staples, Chile

- ▼ Generate revenue to re-invest in emissions reduction projects
- ▼ All departments can apply for funding
- ▼ Reduce carbon footprint by 15% by 2020

Company-wide transition tool

What about the finance sector?



“We believe climate factors have been underappreciated and underpriced. Yet this could change as the effects of climate change become more visible.”

BlackRock Investment Institute (2016)



The Cost of Climate Change

Financial institutions are increasingly prioritizing **climate-related risks and opportunities** as part of their **financial planning and budding climate strategies**.

The TCFD Recommendations

A framework of recommendations to manage climate-related risks and opportunities

including the application of internal carbon pricing in scenario analysis, which banks can incorporate into investment decisions across their portfolios

What are banks doing now?

Banks primarily apply carbon pricing at the operational level, where carbon emissions and related risks are relatively low.

More than 50% of banks disclosing to CDP report using carbon offsets or credits to lower their emissions or meet carbon neutrality goals.

What are banks doing now?

Financial institutions are recommended to extend pricing to assess the material risk in their portfolios.

By not doing so, banks may expose themselves to high levels of material risk through their financed emissions.

“Less than half (49%) [of banks] are implementing risk assessments or 2°C scenario analysis, which means decision-making on portfolio shifts is not supported by robust data.”
– **Boston Common Asset Management**

Itaú Asset Management

- ▼ Monetising risk in portfolios and lending practices
- ▼ Applying a carbon price to a lending portfolio

“We use a price estimate for carbon emissions in our company evaluation models as part of the investment process for the management of third-party assets... Estimating a carbon price and using it in our models helps investors better understand winners and losers.”

TD Bank

- ▼ Drive investments in emissions reduction activities
- ▼ Drive the development of low-carbon financial products

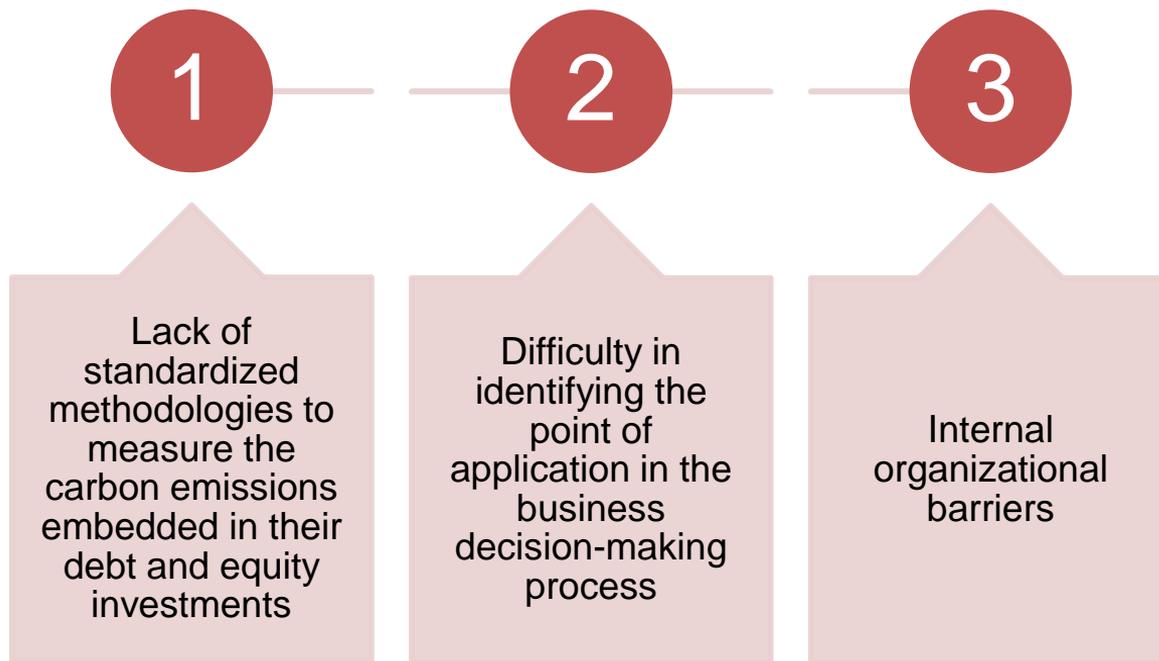
“Having an internal price on carbon aligns with our approach of embedding climate risks in our business strategy. Applying an internal price on carbon is an effective business incentive to drive investment in GHG reduction activities... [it has] driven an increased commitment to developing a range of low-carbon financial products including the financing for residential renewables and energy efficiency projects, insurance for hybrid and electric vehicles, and the issuance of a \$500 million green bond.”

Applying Internal Carbon Pricing to Project Finance

▼ The **World Bank** has initiated **GHG accounting for investment lending operations which have agreed methodologies in the energy, forestry, agriculture, transport, water and urban sectors**. Projects that are subject to GHG accounting undertake the economic analysis with and without the social value of carbon. High and low paths are offered for use in sensitivity analysis starting at US\$40 and 80 t/CO₂e, respectively, in 2020 and increasing to US\$50 and 100 by 2030, and beyond that rising at a rate of 2.25% per year to 2050, leading to values of US\$78 and \$156 by 2050.

▼ **IFC** has operated a **carbon pricing pilot** using price levels of \$30/ton CO₂e in 2016, increasing to \$80 by 2050. The price is **applied to the economic rate of return analysis of project finance investments in three emissions-intensive sectors (cement, thermal power and chemicals)**, and is considered as one of several inputs into the investment decision. IFC will also pilot the application of a carbon price to project finance investments in other sectors with annual emissions above 25,000 t CO₂e and **corporate loans with known use of proceeds**.

Challenges: Applying internal carbon pricing for banks



Enhanced disclosure & supporting tools

Are any of your operations or activities regulated by a carbon pricing system (*i.e. ETS, Cap and Trade or Carbon Tax*)?

Yes

No, but we **anticipate** being regulated in the next three years

No, and we **do not** anticipate being regulated in the next three years

CDP Information Request (C11.1)

Best
Practice
Disclosure
C11.3

Coverage – GHG scope

Price level & variance

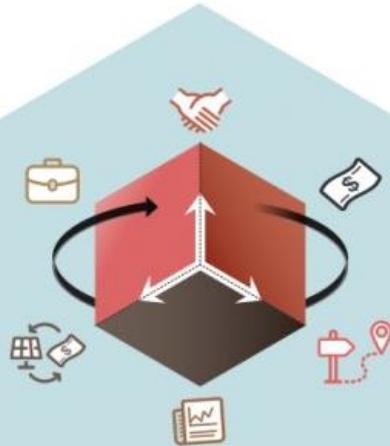
Business application

Impact

HOW-TO GUIDE TO CORPORATE INTERNAL CARBON PRICING

Four Dimensions to Best
Practice Approaches

EXECUTIVE SUMMARY | CONSULTATION DRAFT



generation
foundation

ECOFYS
a danaher company

CDP
CORPORATE DESIGN FOR
CLIMATE

CDP
CORPORATE DESIGN FOR
CLIMATE

CARBON PRICING CORRIDORS

THE MARKET VIEW

WE MEAN
BUSINESS

CP
CC CARBON PRICING
LEADERSHIP COALITION

<https://www.cdp.net/en/climate/carbon-pricing>

Region ▾

Sector ▾

Internal Carbon Pricing Status

Pricing now
 Pricing in 2 years

Not pricing
 Not disclosing practice

Carbon Pricing Policy Status

Existing

Emerging

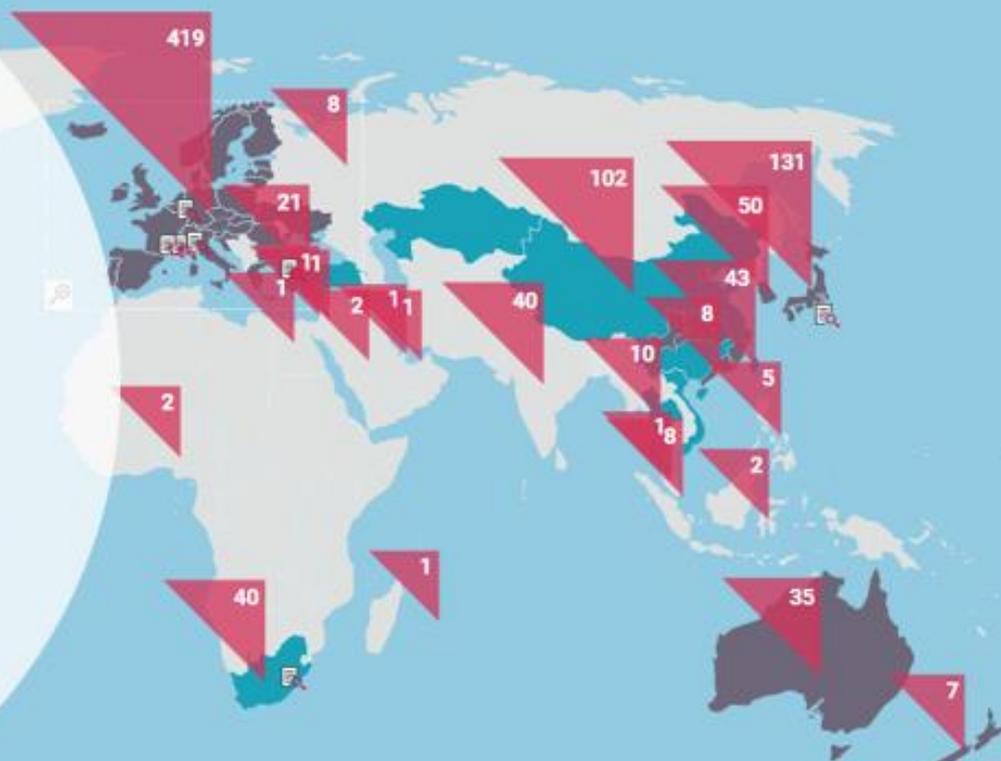
 

2014 2015 2016 2017

Carbon Pricing Connect

▼ Data visualization tool featuring CDP's extensive data on internal carbon pricing with respect to global regulation.

<https://www.cdp.net/en/climate/carbon-pricing/carbon-pricing-connect>



01

Set an internal carbon price high enough to materially affect investment decisions to drive down greenhouse gas emissions; and benchmark against your peers.



United Nations
Global Compact

02

Publicly advocate the importance of carbon pricing through policy mechanisms that take into account country specific economies and policy contexts; and the CPLC.



CARBON PRICING
LEADERSHIP COALITION

03

Communicate on progress over time on the two criteria above in public corporate reports.





Questions?