Putting a price on risk: Carbon pricing in the corporate world

1000+ companies

are now disclosing to their key stakeholders that they currently price their carbon emissions – or intend to in the next two years – to try to meet their climate change risks, a number that was unthinkable just a few years ago.

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Executive summary

The number of corporations disclosing they use an internal price on carbon has tripled since last year. Corporations use internal carbon pricing to offset the costs and risks of greenhouse gas production, and to finance the transition to secure sources of low-carbon energy. This dramatic increase demonstrates the ongoing mainstreaming of carbon pricing as a high priority for business and an essential component of the corporate strategy toolkit.

435 companies, ranging from the toolmaker **Stanley Black & Decker** to the Brazilian mining company **Vale** reported using an internal price on carbon in 2015, up from 150 in 2014. A variety of drivers are cited including incentivizing investments in clean energy and emissions reductions, to mitigating risks from future regulation and global carbon pricing frameworks.

A growing number of U.S. and Canadian companies (more than doubling from 2014 to a total of 97 in 2015) are assigning an internal price to their carbon emissions. These include highly trusted consumer brands such as **Colgate-Palmolive** and **Campbell's Soup**, global industrials such as **General Motors**, and financial giants such as top-ten asset size ranked **TD Bank**. Global companies are voluntarily enacting pricing despite the patchwork of state based regulations, partly as a way of addressing mandatory carbon pricing to which they may be subjected via regulatory regimes in other regions.

Climate change is now part of mainstream business decision-making and represents a bona-fide line item in the standard budget assumptions of successful companies.

The biggest jump in the use of carbon pricing comes from Asian corporations, which saw more than a tenfold increase (exploding from 8 in 2014 to 93 this year), and including domestically successful car brands **Mazda** and **Nissan** as well as Asian telecom companies **SK Holdings** and **NTT Docomo**. African mining and energy companies, sectors which are frequently high emitters, are also adopting the approach, including **Exxaro Resources, Harmony Gold Mining, Anglo American Platinum** and **Sibanye Gold**. These firms are leading a surge in the use of this business planning tool in a fast growing region of the world.

This year, CDP also asked whether companies who are not currently using an internal price on carbon anticipate doing so in the next two years. A remarkable 583 said yes, including China's largest investor-owned power company **CLP Holdings Ltd** and multinational technology major **Yahoo! Inc**, showing that as part of focusing on their competitiveness, corporations are actively planning to account for carbon as a standard cost of doing business.

Together these data points signal a pivot point: Climate change is now part of mainstream business decision-making and represents a bona-fide line item in the standard budget assumptions of successful companies. As expectation builds for governments to agree a global deal on limiting greenhouse gas (GHG) emissions in Paris this December, the CDP data shows how a growing number of businesses have been diligently preparing by incorporating a price on these emissions into their every day decision making.

This report contains a series of excerpts from 2015 company disclosures to CDP's climate change program, which requested data on behalf of investors controlling more than $95 trillion in assets and purchasing organizations representing $2 trillion in combined spend. The results show that leading public companies in the United States and around the world are expecting limits on greenhouse gas emissions. These companies are using an internal carbon price to plan for carbon restrictions. As a consequence they also seek and would welcome regulatory certainty.

Examples include:

NRG Energy Inc *(USA, Utilities)*
"NRG conducts scenario analysis that includes carbon pricing as part of our prudent financial risk assessment. In this sense, current and potential carbon pricing is embedded into management decision-making processes… The price of carbon is determined by the Policy, Strategy and Sustainability department in conjunction with Investor Relations and Legal Counsel…One example of how carbon pricing affects investment decisions is the shift toward investment in renewables are carbon capture technologies."

Owens Corning *(USA, Industrials)*
"For use in internal decision-making and risk analysis, we place an economic value on carbon emissions to help frame the challenges and opportunities in monetary, more broadly understood terms than simply tons of emissions… Quantifying these added costs, in the event that a price is put on carbon in regions around the world where a current price or trading scheme is not in place, provides additional insight into our business decisions. We bracket this analysis, on the low end at $10/metric ton and a high of $60/metric ton."

TD Bank Group (Canada, Financials)
"We measure our cost of carbon based on the costs of our carbon commitment, measured through the purchase of renewable energy credits (RECs) and carbon offsets. These costs are calculated on an annual basis and are charged back to our businesses based on their relative contribution, representing an internal price of carbon of approximately $10 per tonne of CO_2e. The price of carbon is used to drive decision making and investment to manage future risks related to climate change."

E.ON SE *(Germany, Utilities)*
"Putting a price on carbon makes carbon emissions a factor of production. E.ON considers that this is absolutely essential if we are to do our part to help transform the world's energy systems, while at the same time ensuring supply security at affordable prices. In E.ON's investment cases an assumption for future carbon costs is taken into account. That is very likely to be CO_2-certificate costs within an emission trading scheme (like EU-ETS today). The investment cases are checked against a carbon price of 20 €/t CO_2 as a base case and 40 €/t CO_2 for the worst case".

Lotte Chemical Corp *(South Korea, Materials)*
"Internal carbon price plays as a key element in our ongoing business strategies. It has become standard operating practice in business planning, in that the companies acknowledge the process of ongoing climate change…We consider the potential cost of projects CO_2 emissions in all major investment decisions, using a cost of 10,000 KRW per ton of CO_2 since it is extremely hard for us to make a decision on certain investments such as building new factory."

Imperial Oil *(Canada, Energy)*
"We address the potential for future climate change policy, including the potential for restrictions on emissions, by estimating a proxy cost of carbon. This cost, which we assume may approach US $80 per ton by 2040, has been included in our planning bases for several years…Imperial addresses the potential for future climate-related controls, including the potential for restriction on emissions, through the use of a proxy cost of carbon. This proxy cost of carbon seeks to reflect all types of actions and policies that governments may take over the outlook period relating to the exploration, development, production, transportation or use of carbon-based fuels."

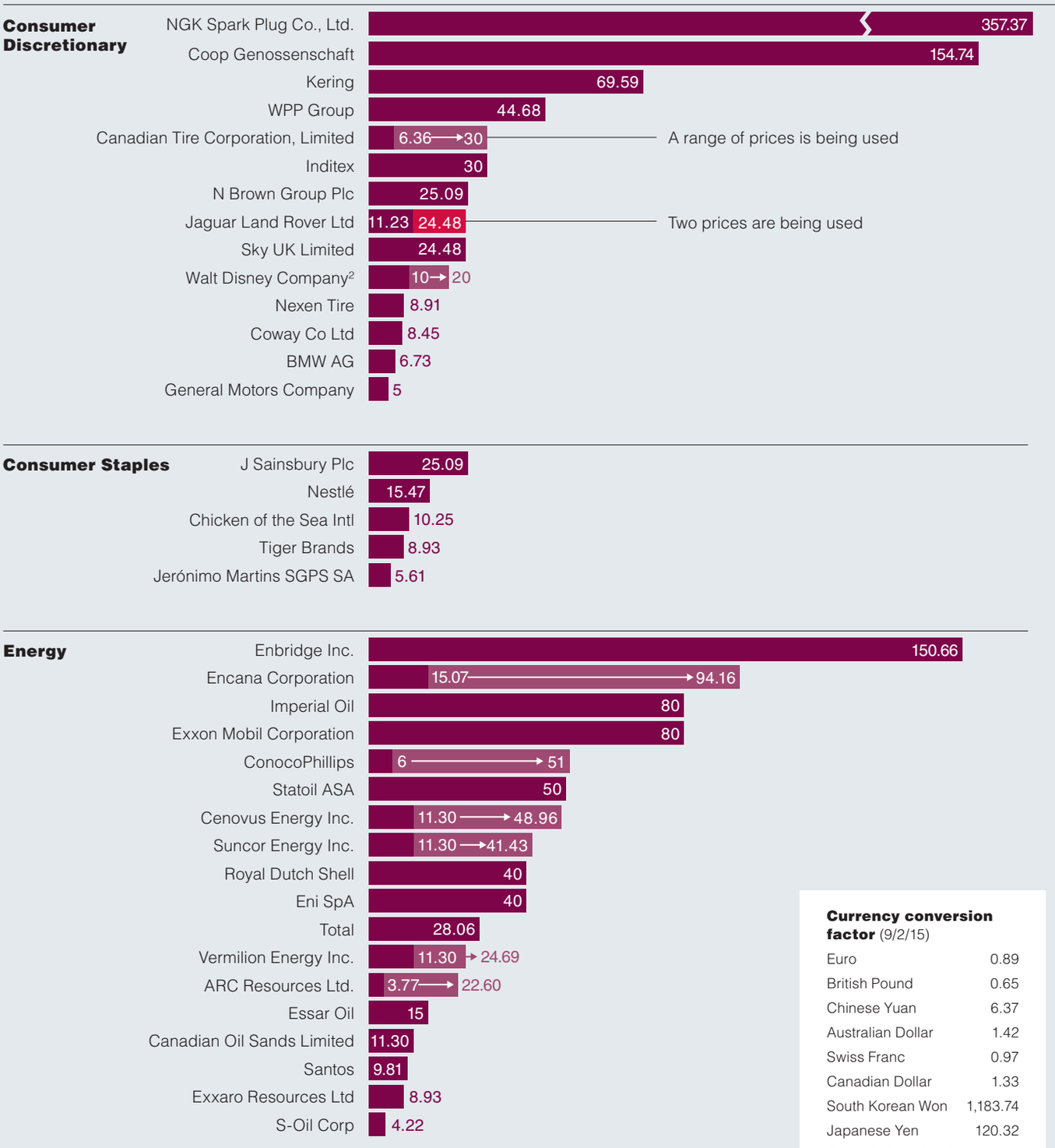
Vale *(Brazil, Materials)*
"Considering Vale's Carbon Goal and the regulatory risks identified for our business […], in 2014, Vale developed its own MAC Curve (Marginal Abatement Cost Curve) to identify the best cost effective mitigation options and further select and prioritize projects below a threshold price…Vale chose a flat threshold price of carbon of US$ 50,00 per tCO_2e over time as a proxy to carbon price in order to achieve Vale's carbon goal…"

Kumba Iron Ore *(South Africa, Materials)*
"Kumba has incorporated the certainty of the carbon tax into their business decisions and financial plans. As a strategic initiative, Kumba has integrated an internal carbon price in financial models to assess the impact the carbon tax and emission reduction opportunities have on the viability of projects…As a considered initiative R120 / ton is included in all project budgets from 2016 as part of the financial viability assessment…Carbon price forecasts are used in all financial models when projects are assessed for financial viability".

WPP Group *(United Kingdom, Consumer Discretionary)*
"We use an internal price of carbon set at £29.2 per tonne of CO_2e…We use this figure to calculate the social cost of our carbon emissions. Currently, businesses such as ours do not bear the environmental costs of mitigating their greenhouse gas emissions. This service is provided for free by nature or at the cost of future generations. The hidden cost of our emissions was £6.5 million in 2014. We also use this internal price of carbon in our real estate decisions when acquiring or retrofitting new and existing buildings to understand the social cost of our carbon emissions and the impact of future energy and carbon regulations on our business."

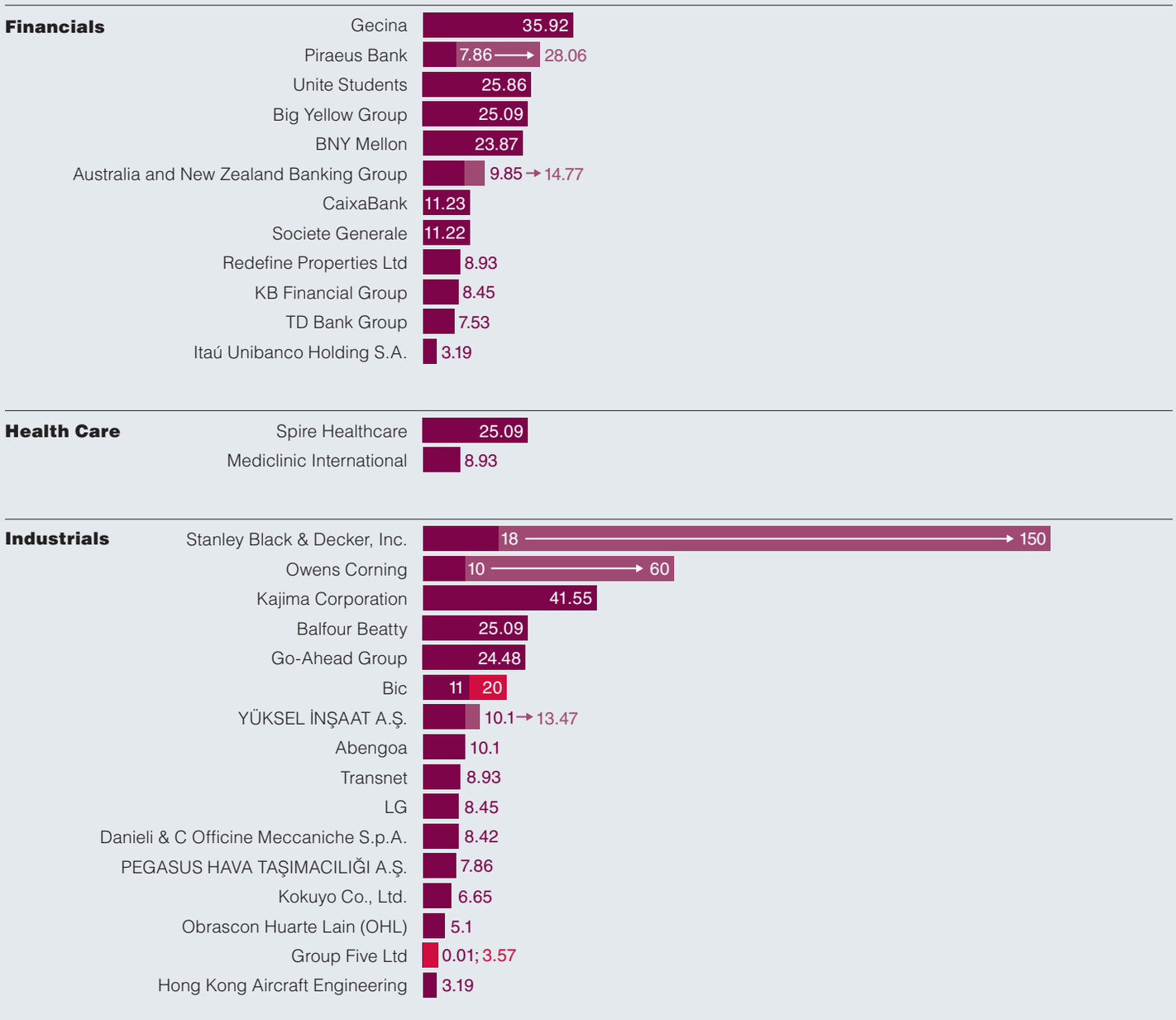
Internal carbon prices by sector

All prices are in US dollars[1]



Currency conversion factor (9/2/15)

Euro	0.89
British Pound	0.65
Chinese Yuan	6.37
Australian Dollar	1.42
Swiss Franc	0.97
Canadian Dollar	1.33
South Korean Won	1,183.74
Japanese Yen	120.32
South African Rand	13.44
Brazilian Real	3.76
Hong Kong Dollar	7.75



1 Companies are requested to disclose their GHG emissions to CDP in metric tons.

2 Source of prices: Gunther, Marc. (March 2013). Disney, Microsoft and Shell opt for self-imposed carbon emissions taxes. Retrieved from *The Guardian* on October 17, 2013: http://www.theguardian.com/sustainable-business/carbon-emissions-tax-microsoft-disney-shell

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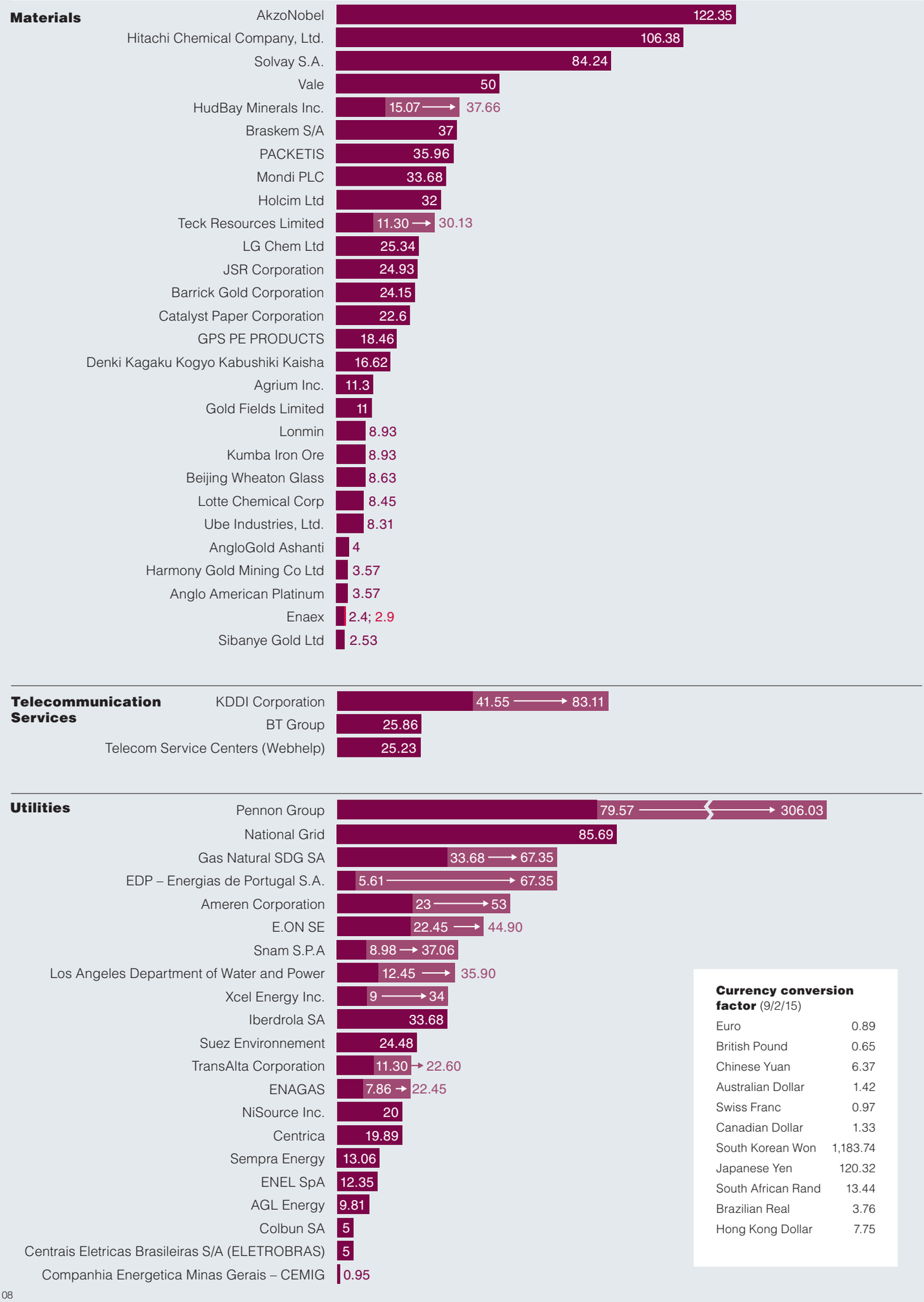
All prices are in US dollars



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In their own words

Company excerpts from 2015 CDP disclosures

SASOL LIMITED

South Africa, Energy

Sasol has, for a number of years, developed an internal set of carbon pricing assumptions that cover some of the geographic areas in which we operate and/or where we may have considered projects.

GROUP FIVE LTD

South Africa, Industrials

South African operations: Group Five introduced carbon pricing into its business in 2010, when they started to investigate CDM opportunities. Group Five currently has an internal price of carbon that is linked to the proposed South African carbon tax, which is set for implementation in 2016…According to the draft policy paper that was released for public comment in May 2013, South Africans will be taxed at a rate of R 120 per tCO_2e emitted, which will escalate at 10% per annum over the following five years. A tax free-threshold of 60% has been incorporated into the proposed design, which can be increased to 90% (through the access of relief mechanisms). This means that the effective tax rate could range between R 12/tCO_2e and R 48/tCO_2e. Group Five has conservatively applied the higher carbon taxation rate (of R 48/tCO_2e) as its internal price of carbon.

ANGLO AMERICAN PLATINUM

South Africa, Materials

Amplats recognises that utilising an internal price of carbon is the most efficient and cost-effective means of incorporating climate change into its long term business plans…Given that there is no market benchmark, Amplats has adopted an internal price of carbon that mirrors that of South Africa's carbon tax…Based on this taxation structure, Amplats has set its internal price of carbon at R 48 per tonne of CO_2 equivalent, which escalates at 10% per annum for five years and then remains stable. This internal price of carbon is used for both Amplats direct-emitting activities (such as onsite coal, diesel, petrol, and LPG combustion) and indirect-emitting activities (such as the consumption of grid electricity).

Amplats employs an internal price of carbon for:

- Planning and justifying climate related investments;
- Stimulating research and development of PGM related low carbon technologies such as fuel cells;
- Identifying and prioritising climate change related risks and opportunities;
- Incentivising efficiencies across the business;
- Buffering the impact of South Africa's proposed carbon tax;
- Gaining a long term competitive advantage; and
- Engaging with suppliers on climate change strategies and greenhouse gas reduction measures.

A F R I C A

HARMONY GOLD MINING CO LTD

South Africa, Materials

Harmony operates its business cognisant of the climate change agenda and its presence in low carbon economies. In this vein, the company has priced carbon into its life of mine plans and forward looking budgets. Adopting an internal price of carbon was driven by a need to:

- Adapt to the effects of a changing climate;
- Drive investment in emission reduction projects;
- Reduce risks and identify opportunities; and
- Ensure the long term sustainability of the business in the green economy.

In South Africa, a carbon price will come into effect in 2016 through the implementation of a national carbon tax. Accordingly, Harmony has set its internal carbon price (for the South African operations) to match that of the proposed national tax. This means that Harmony's direct (Scope 1) emissions and energy indirect (Scope 2) emissions are priced at a rate of R 48 per tonne of CO_2 equivalent, escalating by 10% per year over the next five years*…Utilising an internal price of carbon that is equivalent to South Africa's carbon tax has shown that some of Harmony's more marginal assets will no longer be profitable should the carbon price become a reality. This presents a clear business risk and, as such, Harmony's long term business strategy is geared towards rebalancing its portfolio towards less energy- and emissions-intensive assets…

KUMBA IRON ORE

South Africa, Materials

Kumba has incorporated the certainty of the carbon tax into their business decisions and financial plans. As a strategic initiative, Kumba has integrated an internal carbon price in financial models to assess the impact the carbon tax and emission reduction opportunities have on the viability of projects… As a considered initiative R120 / ton is included in all project budgets from 2016 as part of the financial viability assessment…Carbon price forecasts are used in all financial models when projects are assessed for financial viability.

ESKOM

South Africa, Utilities

Purpose of carbon shadow price at Eskom is to use it in the Eskom Investment Evaluations, mainly for asset creation investments i.e. Infrastructure capital expansion. The objectives being to: -to demonstrate carbon constraint (i.e. penalty) associated with increased emissions and benefit of emissions reduction (i.e. CER gain and avoidance of carbon tax liability) -making previously costly carbon efficient technologies more financially feasible; hence supporting Eskom climate change strategy (ccs) element of diversification.

COWAY CO LTD

South Korea, Consumer Discretionary

Although Coway is not subject to the greenhouse gas/energy target management scheme currently in operation in Korea, it has voluntarily set itself a greenhouse gas reduction target and carried out the corresponding reduction programs… It has set a rate of KRW 10,000 per 1 ton CO_2e in order to establish various indices such as the outcome of the reduction programs and the investment payback period. The price of carbon is based on the market price in Korea, and can be changed according to the situation in the emission trading market.

KAO CORPORATION

Japan, Consumer Staples

Kao consider the advantages which are estimated supposed that carbon dioxide emissions trading is introduced, when it makes decision of investment of energy saving facilities. That means that Kao uses an internal price of carbon by embedding the carbon values of absolute scope 1 and 2 emissions, which is the carbon price on a market, into its investments for energy saving facilities…Kao makes investment decision for the building of relatively large scale plants or factories considering carbon price as well as actual price.

TOYO TIRE & RUBBER CO LTD

Japan, Consumer Discretionary

In Japan, coal and heavy oil are used on a massive scale as energy sources and attract environmental taxes. In response to this, we have turned to alternative resources, or introduced more energy efficient equipment or technologies to minimize the impact on product prices…Also at our overseas locations, we will introduce these measures accordingly when carbon taxes/cap and trade schemes are introduced in order to reduce CO_2 emissions.

KIRIN HOLDINGS CO LTD

Japan, Consumer Staples

…Carbon pricing still remains a big issue and it is possible that its regulation is introduced in future. Thus, Lion will continue to prepare for the carbon pricing.

ESSAR OIL

India, Energy

Since Typical refinery margins is USD 3 – 7/ bbl, so Cost of carbon is a serious impediment for even the sustenance of Oil refining business… Therefore, though there is risk associated with the price of carbon for a high complex refinery like ours, we also see it as an opportunity to drive investment for low carbon options including renewables, natural gas and coal bed methane in our business.

A S I A

PTT

Thailand, Energy

In 2014, PTT committed with CDP to develop internal carbon price to be incorporated into investment decision-making...The internal carbon price will be calculated and reported in USD similar to major oil and gas companies once the Carbon Price Guildeline and PTT Carbon Price Tool are rolled out.

S-OIL CORP

South Korea, Energy

The price of carbon, KRW 5,000 per tCO_2, has been taken into account for all new investment decision made starting in 2013. From 2015, we will quote KAU (Korea Allowance Unit) price traded in Korea Emission Trading Scheme as a reference.

KB FINANCIAL GROUP

South Korea, Financials

The Bank has participated in the National Emissions Trading System since the start of 2015 and used the permit market price (around KRW 10,000 as of 2nd quarter of 2015) as internal price of carbon.

CATHAY PACIFIC AIRWAYS LIMITED

Greater China, Industrials

We use a range of internal prices of carbon to evaluate our exposure to the European Union Emissions Trading Scheme as well as the proposed Global Market Based Measure (GMBM) currently being developed at the International Civil Aviation Organization (ICAO) to regulate international aviation emissions from 2020.

TOTO LTD.

Japan, Industrials

Our use of fossil fuels is also subject to the environmental tax. We use them in the manufacturing of products, such as firing of sanitary ware in a tunnel kiln, the transporting of materials and products, and in company vehicles. Meanwhile, we are also affected by rises in incremental steps in electricity charges due to taxation of the use of fossil fuels by power companies. Increased tax payment may increase electricity costs, and costs required to change fuels or equipment in business activities influence the operations, financial status, and performance of our group.

SAMSUNG ELECTRO-MECHANICS CO., LTD.

South Korea, Information Technology

Samsung Electro-Mechanics is using an internal carbon price…The internal carbon price is based on the investment, energy cost savings and greenhouse gas reduction amount of those reduction projects, and it is used one of standard for decision making to purchase emission allowance.

JSR CORPORATION

Japan, Materials

JSR incorporates carbon considerations into its investment decision making process by adjusting future cash flow calculations to reflect the carbon reduction or increase associated with investment in a particular asset. The CO_2 impact is calculated by multiplying the physical quantity of CO_2 (in tonnes) added or saved as a result of the investment by a shadow price of carbon based on an assumed emissions credit price, which is currently 3,000 yen/tonne-CO_2, updated every 3 years.

LG CHEM LTD

South Korea, Materials

LG Chem developed investing guidelines, which should be applied to future projects of facility installation of all plants from 2015, to monitor and analyze cost impacts of GHG emissions on facilities to be newly established and to be expanded. We are able to develop internal strategies to cope with GHG risks by analyzing 10-year GHG impacts and emissions occurred by facility investment plans and involve the maximum KAU price which is 30,000 KRW that is 3 times of stabilizing price, 10,000 KRW, defined by the Korean government.

LOTTE CHEMICAL CORP

South Korea, Materials

Internal carbon price plays as a key element in our ongoing business strategies. It has become standard operating practice in business planning, in that the companies acknowledge the process of ongoing climate change…We consider the potential cost of projects CO_2 emissions in all major investment decisions, using a cost of 10,000 KRW per ton of CO_2 since it is extremely hard for us to make a decision on certain investments such as building new factory.

SK CHEMICALS

South Korea, Materials

Performance metrics are needed for the greenhouse gas reduction activities conducted by SK Chemicals in accordance with its climate change business strategy. Quantitative values for greenhouse gas reduction activities are being calculated via internal carbon pricing. In addition, an internal carbon price is being utilized to calculate future emissions-allowance purchasing costs according to the emissions trading system implemented in 2015.

KDDI CORPORATION

Japan, Telecommunication Services

Price used depends on The Tokyo Cap and Trade Program…The price currently fluctuates between JPY9,500 and JPY10,000 per ton of CO_2.

KOREA DISTRICT HEATING CORP.

South Korea, Utilities

We performed a marginal abatement analysis to evaluate investment in GHG abatement potential, and used the result as background for our mid-term and long-term carbon asset plan considering carbon prices in emissions trading.

TOKYO GAS CO., LTD.

Japan, Utilities

When planning a new power plant, we assess its business feasibility with taking carbon price into account.

EUROPE

BMW AG

Germany, Consumer Discretionary

BMW Group uses a forecast for the ETS price development in all business case calculations when it comes to operational costs of investments / equipment which emit CO_2 by combusting fossil fuels. The assumed price curve starts from today's value of about 6€/t and is increasing in the next years to a value significantly above the actual price…Climate change and rising energy prices demand efficient energy usage as well as the increased use of alternative energy sources. Our target is to be leading in usage of renewable energies. Furthermore, achievements will not only improve the company's environmental impact assessment but, due to increasing energy prices, also the company's profitability.

JAGUAR LAND ROVER LTD

United Kingdom, Consumer Discretionary

Regarding the cost of carbon JLR use's rates associated with the various regulated carbon schemes. Some of the schemes set a price (for example CRC having an average price of £16/tonne). Others such as EUETS have varying prices depending upon the prevailing market rates. In such instances JLR uses reference sources which give an indication of futured carbon prices (for example €10 per tonne of ETS carbon towards the end of phase III). JLR uses such measures as part of its future energy forecasting and strategy for carbon reduction.

COOP GENOSSENSCHAFT

Switzerland, Consumer Discretionary

In order to drive investment in emissions reduction activities for Scope 1 and 2, Coop introduced an internal price of carbon. Hence, the investment decision-making process is no longer based on payback guidelines, but on a comparison between the costs of reducing CO_2 and the alternative carbon costs (tax and offsetting) that might be incurred (Coop assumes CHF 150 per tonne of fossil CO_2). By internalizing carbon costs in this way, Coop is acting as if it were already 2023 and the CO_2 emissions need to be compensated.

DAIMLER AG

Germany, Consumer Discretionary

At several production sites we have installed combined heat and power (CHP) plants as a very efficient technology to generate electricity from natural gas. In the European Union these power plants are subject to the European Union Emissions Trading Scheme (ETS…The individual production sites have to purchase certificates from the central account in case that they exceed their emissions budget. This system translates the EU trading scheme into an internal trading scheme, incentivising the reduction of GHG emissions at a plant level.

DELPHI AUTOMOTIVE PLC

United Kingdom, Consumer Discretionary

In countries such as the UK, where carbon pricing has become a matter of interest, Delphi sites are identifying alternative solutions to minimize energy consumption and reduce CO_2 emissions from operations.

INDITEX

Spain, Consumer Discretionary

As part of the commitment to the environment and society, Inditex is conscious of the need to promote efficiency projects to reduce energy consumption and GHG emissions. In line with Inditex strategy, Inditex ensures that our items leave the smallest carbon footprint possible; we have develop an internal price of carbon of US$30 per metric tonne of CO_2e.

KERING

France, Consumer Discretionary

Since 2012, Kering has been working on the creation and deployment of its Environmental Profit and Loss account (EP&L), the stated objective given in 2012 being to cover 100% of the Group's activities by 2015…[This] makes it possible to attribute a monetary value to the Company's environmental impacts throughout its supply chain…In this context the price of carbon that Kering uses is 62€ per tonnes of CO_2 equivalent…This price is applicable globally, and may be revised every 3 years… Carbon pricing and monetization of other key environmental indicators led the Group to explore new sourcing strategies for key raw materials (Cotton, leather, wool, cashmere...)

RENAULT

France, Consumer Discretionary

EU-ETS CO_2 allowances cost hypotheses are established internally and taken into account in ROI calculations for energy efficiency or emissions reduction investments…They are subject to short- and mid-term projections based on variation models which integrate external factors such as the evolution of energy market and EU-ETS regulations.

MELIA HOTELS INTERNATIONAL SA

Spain, Consumer Discretionary

Through the internal project SAVE, the Engineering and Environment Department continuously measures energy, water consumptions, GHG emissions, and associated costs. Thus, every month and for every hotel there is an economic ratio resulting from the $kgCO_2e$ emitted and the cost of energy, providing a measure of the cost of CO_2e per business unit or also per Brand or geographical area if needed…In 2014, the average internal price of carbon for the scopes 1&2 of all the hotels included in our carbon footprint is 0.307 euros/$KgCO_2e$…The Price of carbon is used, amongst other variables, to analyse in which hotels and/or destinations our cost of CO_2 emitted is more expensive and therefore, where we must focus our efforts to reduce emissions and save costs.

MARKS AND SPENCER GROUP PLC

United Kingdom, Consumer Discretionary

An internal price of carbon is used in our whole life costing 'models' for potential specification in major construction projects…The internal price includes carbon taxes/ levies and our the marginal cost of meeting our commitment to carbon neutrality.

SKY UK LIMITED

United Kingdom, Consumer Discretionary

We use an internal price of carbon for to help us make decisions on the investments we make in energy efficiency and on site renewable energy in addition to standard simple pay back and Investment Rates of Retunes (IRR). The price of carbon re use is based on the additional price of carbon we pay as part of our submission to the Carbon Reduction Commitment. The price of carbon we currently use in £16 per tonne and is reviewed on an annual basis.

WHITBREAD

United Kingdom, Consumer Discretionary

In order to build accurate business cases for capital investment it is important that the full benefits of any project are captured. The total cost of carbon is calculated by taking the price per unit of energy and adding any CCL, CRC or any other charges to this total.

WPP GROUP

United Kingdom, Consumer Discretionary

We use an internal price of carbon set at £29.2 per tonne of CO_2e…We use this figure to calculate the social cost of our carbon emissions. Currently, businesses such as ours do not bear the environmental costs of mitigating their greenhouse gas emissions. This service is provided for free by nature or at the cost of future generations. The hidden cost of our emissions was £6.5 million in 2014. We also use this internal price of carbon in our real estate decisions when acquiring or retrofitting new and existing buildings to understand the social cost of our carbon emissions and the impact of future energy and carbon regulations on our business.

CARLSBERG BREWERIES A/S

Denmark, Consumer Staples

We have a an internal price of carbon in order to be able to take potential monetary savings from reduced carbon emissions into consideration, in our investments…We use the current price from EU-ETS as the basis, but are also looking into different scenarios which are forecasting future prices of carbon.

DANONE

France, Consumer Staples

Danone defined a “Green Capex” procedure in which a “theoretical” price of carbon has been set to calculate the payback of investment with CO_2 impact.

HEINEKEN NV

Netherlands, Consumer Staples

Within Europe and many countries outside Europe an emission market place is available. In case we need to prepare a business case for new (more efficient) equipment we take the market prices for emissions (price of Carbon) into account as one of the input indicators. Doing so will lead to lower returns on investment, as carbon prices are never below zero, consequence is a more attractive business case and an easier/faster decision making process within HEINEKEN.

JERÓNIMO MARTINS SGPS SA

Portugal, Consumer Staples

Price used is 5 € / t CO_2, in accordance with documents on Green Tax Reform release by Portuguese authorities.

MORRISON SUPERMARKETS

United Kingdom, Consumer Staples

Due to our involvement in the CRC scheme, we in effect pay a price of carbon for our energy use. This price is included in all business cases to ensure the proper effect of any changes in emissions is valued properly…Participation in the CRC has, for the first time, put an actual cost on the price of carbon. Although the price is at this time reasonably low, around 7% of the cost of energy, the presence of such a large single cost to the business has brought carbon reduction to the fore.

UNILEVER PLC

United Kingdom, Consumer Staples

Unilever applies an implicit cost of carbon (as defined by the UN Global Compact) by setting emissions reductions targets and delivering against them, so driving down emissions as if an explicit price were used in the decision calculation…We are considering the introduction of an explicit cost of carbon to drive our performance even harder. We will use this to evaluate the business case for new investments e.g. in new manufacturing capacity, plant or equipment.

BG GROUP

United Kingdom, Energy

When allocating capital for projects and investments, BG Group applies a range of project screening values relating to energy prices. We use a shadow carbon price ($ pt CO_2e), or actual market/tax price where it exists (whichever is higher) and an oil boe project screening value that is broadly consistent with projected ranges under the IEA 450 scenario, as sensitivity to determine the potential economic impact of climate change policy but also to identify the best technology to apply to optimise energy efficiency.

ENI SPA

Italy, Energy

Our carbon price level is set according to our carbon price scenario for the main carbon markets (e.g. EU-ETS), that we constantly monitor and cover about 50% of our CO_2 emissions. In addition we perform sensitivity analysis with a carbon price of 40$ (real terms) for the main projects under development and producing assets.

GALP ENERGIA SGPS SA

Portugal, Energy

Galp Energia considers the carbon pricing as the most efficient and cost-effective mean of achieving the GHG emissions reduction targets (scopes 1, 2 and 3). However, we consider as fundamental a worldwide common approach that guarantee a cost effective long-term trajectory for carbon abatement, which is shared economy-wide and transparent to world society…To manage and reduce carbon risks we assign, internally, a price on carbon. The cost of carbon is one of the variables considered into capital decision-making processes, taking as reference the price establish for the European energy and climate policies, in particular EU ETS – worst case €30/ton, actual business case 2015–2017.

OMV AG

Austria, Energy

Within the frame of the Carbon Strategy Review Project in 2014 it was decided to start the introduction of an internal carbon price in OMV from 2015 onwards. With the introduction of such internal carbon price "hypothetical" carbon costs are factored into the investment appraisals and engineering designs of the projects, by applying the internal carbon cost to the projected CO_2eq emissions over the lifetime of the project. Thus an internal carbon price is for OMV a tool for testing all investment decisions via running sensitivities of project economics with increased OPEX from carbon costs. As such with an internal carbon price we can protect the value of our new investments under future scenarios in which the cost of carbon may be higher than it is today as a result of a regulated tax or trading scheme. Therefore an internal carbon price is an effective long term risk management tool for a harsher future carbon legislative environment and at the same time an awareness raising tool for potential carbon costs of projects. Further economic incentives for carbon emission reductions can be made more transparent and clear.

STATOIL ASA

Norway, Energy

Since last year we apply an internal carbon price of USD 50/tonne of CO_2-equivalent (2014 real terms) for expected GHG emissions to all project investment decisions and which we use for portfolio management and strategic considerations…For our activities on the Norwegian Continental Shelf the expected sum of the Norwegian CO_2 tax and the ETS price, 500 NOK/tonne (~$60 per) should be used… We consider the potential cost of a project's CO_2 emissions in all investments decisions. Our internal price of carbon assume major increase of CO_2 price both in Europe and in the rest of the world towards 2040.

TOTAL

France, Energy

In 2008, the Group decided to include a medium term carbon cost of 25 €/ton in the base case economic analysis of all new projects.

ALTAREA COGEDIM

France, Financials

The carbon price is used to evaluate the group's vulnerability to two majors trends that were identified in the risk analysis as potential threats: The instauration of a carbon tax; The increase in the price of fossil fuels…We used an hypothesis on the price of carbon tax and various scenarios to calculate the potential financial impacts of those two events…As part of its annual Bilan Carbone assessment for all of its activities, the Group quantifies the direct and indirect financial impact of a carbon tax and increases in oil prices.

CAIXABANK

Spain, Financials

We think that it is important that enterprises put a price on carbon, to help limit the increase in global mean temperature to two degrees Celsius above pre-industrial levels. In addition, we assume that addressing climate change will be both a cost and an opportunity for us, independently from the fact that it is established by regulations or not. Using a price on carbon allows us to determine our investments in greenhouse gas emissions reductions strategy, which consists in reducing emissions via the development of energy efficiency projects, raising environmental awareness, promoting good environmental practices and offsetting the emissions that we are not able to reduce… Our price on carbon is set at 10 euro/tCO_2, based on the average carbon credit price of the high quality projects of the voluntary carbon market, which ranges from* 5 to 20 euro/tCO_2 as well as on what part of our budget we are willing to use for reducing our environmental impact. A higher carbon pricing would lead to do even more inversions on energy efficiency and emissions reductions activities, in order to invest in reducing continuously the emissions on the long term and to expend less money on offsetting emissions.

COMMERZBANK AG

Germany, Financials

Since 2015 Commerzbank is completely offsetting its carbon footprint…Knowing that the costs of voluntary compensation are no real price on carbon, we are still on the way to develop a fair and realistic price on carbon to be implemented in the future… In 2014 our management board decided to compensate the whole CO_2 emissions of Commerzbank AG with all branches in Germany from the beginning of 2015. For that reason we have an internal price of carbon, which is the average price per CO_2 compensation certificate.

CREDIT SUISSE

Switzerland, Financials

Credit Suisse uses an internal price of carbon in specific financings, but not for our internal operations (e.g. in financings for coal-fired power plants in the US that meet the Carbon Principles criteria)…By offsetting our entire global scope 1, 2 and 3 carbon footprint we are setting a substantial internal price for carbon.

DANSKE BANK A/S

Denmark, Financials

We do neutralize all our CO_2 emissions by investing in CO_2 credits from different projects. By adding this extra cost to every tons of CO_2 we actually use the CO_2 credits motivate business units to be become more energy efficient.

DEUTSCHE BANK AG

Germany, Financials

The internal price of carbon is used within the Eco-Performance Management Office to calculate the cost and pay back period of energy efficiency and other sustainability measures…An internal price of carbon is used to lower the bar to investment in energy efficiency and sustainability initiatives.

GECINA

France, Financials

Since 2011, Gecina has been working on quantifying monetary impact of climate change though…For example, Gecina has anticipated of the coming carbon tax by simulation based on the 2010 "Rocard" report, and was estimated around €32/met. ton. CO_2. That tax has been introduced three years later in 2014 and became a real cost (€7/met. ton. CO_2 in 2014, €14,5 in 2015 and €22 in 2016)

HENDERSON GROUP

United Kingdom, Financials

At Henderson we offset all of our Scope 3 emissions using an internal price of carbon. We use our carbon price in our energy budget. Our carbon neutral status is fully costed with our commitment to offset any unavoidable carbon use over three year periods.

HSBC HOLDINGS PLC

United Kingdom, Financials

The UK CRC Energy Commitment Scheme directly impacts HSBC and its clients in the UK and other parts of the group responsible for UK based properties. The CRC does not take account of the fact that HSBC buys its electricity under green tariff arrangements, which means we are required to purchase credits for 'full' energy usage. Estimated cost to purchase 'permits to pollute to cover 2013-2014 were £1.8m (US$3.0m), 2014-2015 cost is expected to be lower due to reduced emissions.

SOCIETE GENERALE

France, Financials

…each business line and corporate division pays an internal carbon tax according to their carbon footprint (€10/tCO_2) and the revenue from this tax is allocated to internal environmental efficiency initiatives.

SWISS RE

Switzerland, Financials

In 2014, we introduced an internal carbon levy on air travel, which works according to the "polluter pays" principle. As a result, all our offsetting costs are now allocated to the Group's main business units in proportion to their respective share of air travel. This internal price on carbon heightens awareness of travel costs among our managers and employees and creates a further incentive to reduce air travel, in addition to potentially reducing flight costs.

NOVO NORDISK A/S

Denmark, Health Care

Normal requirements to a ROI are 2 years in Novo Nordisk. For our energy saving investments, we have extended the ROI period till 5 years and thereby indirectly have set a price on carbon.

SPIRE HEALTHCARE

United Kingdom, Health Care

We incorporate the cost of CRC allowances (currently £16.40/tCO_2) into the financial assessment of energy reduction projects.

AIR FRANCE – KLM

France, Industrials

The Group has established a carbon credit risk hedging strategy in the form of forward purchases, a policy whose measures are approved by the Risk Management Committee and takes the actual carbon –price for ETS as the principle basis for the internal validation of carbon related investments and projects.

BALFOUR BEATTY

United Kingdom, Industrials

We use an internal price of carbon based on the CRC tax rate for scope 1 and 2 carbon emissions in the UK. In 2014, this was £16.40/ tonne of CO_2. The price is factored into return on investment calculations for energy efficiency projects. We do not use a carbon price for the hiring and operating costs of equipment as these do not currently attract a carbon tax. However, we do still calculate the energy costs and factor these into the total hire cost.

DANIELI & C OFFICINE MECCANICHE S.P.A.

Italy, Industrials

Carbon credits can be used to meet own quotas or can be sold to third parties. This financial facility is expected to boom in the coming years due to the internationally recognized need to reduce the addition of carbon dioxide and other noxious gases to the atmosphere. The carbon credit scheme may help in financing energy recovery projects that otherwise would not be attractive, especially when built on a small scale…Our Steel Making division is subjected to EU ETS Regulations. Right now Carbon Market value is 7,5 €/ton.

BIC

France, Industrials

In 2014…a cost of carbon has been set up (based on an actual market price-11$ and a theoretical one-20$) to illustrate the cost of the airfreight and CO_2 emissions.

HOCHTIEF AG

Germany, Industrials

We estimate the internal price of carbon to be 6,4 billion EUR group-wide in 2014 as described below. There are plenty of opportunities driven by changes in other climate-related developments: There are a lot of new products and services emerging from the efforts to stop or at least to slow down climate change. The most important examples are renewable energy power plants (especially water power plants and onshore wind parks), more efficient consumption of energy and raw resources and a growing demand in sustainable buildings/infrastructure projects (green roads). Increasing the efficiency of our products and services is a key part of our efforts to provide sustainable products. As a provider of green buildings and green infrastructure projects, we see a great opportunity to increase sales with the changed awareness of our customers. Over the last years, sales of green buildings and green infrastructure projects have had a positive trend. In 2014, we had sales of more than 6,4 billion Euro group-wide with green buildings, which is approximately 25% of group work done. In the next 10 years, we expect the trend to continue and, therefore, to achieve sales possibly of a higher range, because we want to widen the portfolio of sustainable products with more green infrastructure projects.

SAINT-GOBAIN

France, Industrials

Carbon prices, originated from different regional regulations in force, such as EU-ETS, are integrated into our 5-years business plans by the Corporate Planning and Economic Research Department. These plans guide our overall business strategy, giving trends and orientations for group decision-makers.

RENISHAW

United Kingdom, Information Technology

When assessing capital plant and energy reduction / efficiency projects we use the CRC price of carbon as part of assessing the whole life cost of the goods, or project…this allows us to complete a true business case with a carbon price captured within it, and allows a full cost assessment to take place.

ATOS SE

France, Information Technology

Atos uses the market cost of carbon, combined with carbon taxes, offsetting the costs of renewables/non-renewables to assess the cost of emissions from each operating country… We use this to help countries to reduce their emissions and take the best decisions regarding selection of the most appropriate local energy options. It also provides motivation to improve energy efficiency…For the past 5 years, Atos has run an offsetting programme to make all of its data centres carbon neutral. This activity is ongoing, while progress is made to reduce energy consumption and to source zero carbon energy. The cost of these offsets is charged to each country in proportion with the emissions from their hosted data centre operations. This provides an incentive for each country to undertake proactive emissions reductions, so as to reduce the offsetting cost.

ABENGOA

Spain, Industrials

… Abengoa has established an internal carbon price for the company of 9 €/tCO_2eq. This price has been calculated using the volume and investment in emissions reduction initiatives, the volume and cost of carbon credits purchased and the cost of green energy acquired and it will be used to measure the efficiency of the GHG reduction initiatives proposed by the Abengoa subsidiaries and shall contribute to the objective of reducing 20% of CO_2 emissions in 2020 compared to 2013.

AKZONOBEL

Netherlands, Materials

Carbon pricing and taxation schemes are emerging in different regions, with varying scopes and approaches. AkzoNobel has looked into the potential impact of such schemes, specifically for a selection of key materials in our value chains as well as for energy. Conclusions can be summarized as for example: Cradle-to-grave carbon pricing could increase raw material cost by ~5% with current CO_2 prices (ETS) or by ~30% with a higher CO_2 price of 50€…For our 4 D profit and loss accounting, the natural capital externalities were calculated with the Environmental Priority Strategy methodology for environmental monetization. (see AkzoNobel report, 2014 page 206-207t). 1 ton of CO_2 has the price of 109 €…We assign 50€/tonne CO_2 on all investment calculations but will consider to review this against other available cost estimates (e.g. 109€/tonne CO_2).

BASF SE

Germany, Materials

Carbon pricing plays a role in internal assessments on capital investments and operational costs of our production facilities, the rationale being that costs originating from respective pricing schemes have an impact on the return on investment and cost-benefit ratio of operations… cost effects on energy supply side (Scope 2) may be taken into account case by case.

BHP BILLITON

United Kingdom, Materials

We have been incorporating a carbon price into all our investment decision-making for over a decade through the mandated use of our Carbon Pricing Protocol across all of our operations and projects.

ERCROS

Spain, Materials

An internal price of carbon is used account for transfers of CO_2 emissions and to calculate the profitability of projects. For assessing the carbon price average prices established by renowned companies in the market for CO_2 emissions are used.

GLENCORE PLC

Switzerland, Materials

Our industrial coal assets in Australia (which accounts for over 50% of our global coal production) have been incorporating carbon pricing sensitivities (low carbon price and high carbon price) into life of mine (LOM) models since 2010. The Australian coal business started including carbon price sensitivities as a risk management and planning tool in response to ongoing uncertainty related to climate change policy in Australia.

HOLCIM LTD

Switzerland, Materials

A Social and Environmental P&L assessment was conducted…considering a price for carbon and other externalities. This price was defined considering the Stern report, the European Commission impact assessment on the Carbon Trading Directive, as well as an assessment made by the Environmental Protection Agency. The carbon price assumed for 2014 has been 32 USD/t…According to the existing carbon pricing schemes, Holcim uses an internal price of carbon to estimate the economic impact on the production cost of the sites that are under the defined mechanisms in each country or region (EU, New Zealand, Quebec and Switzerland). Regarding the efficiency of each production site and the existing and projected market demand, Holcim makes decisions based on the overall financial impact that the asset has and may have in the future.

MONDI PLC

United Kingdom, Materials

A rough estimation of the CO_2 cost impact on Mondi´s EUETS operations has been carried out with an internal price of carbon of 30,- €/t CO_2e…Currently the carbon price is much lower but we are expecting in the coming years a carbon price again in the range of 30 €/t and even more, so we keep the 30 €/t for the moment.

RIO TINTO

United Kingdom, Materials

Rio Tinto's long term investments take into consideration carbon pricing and understanding the impacts of carbon risks on strategic decisions. A price is developed by region, and over different time periods to reflect the life of our assets, using a proprietary model based on assumptions about the development of climate legislation, policy and markets in each jurisdiction.

SOLVAY S.A.

Belgium, Materials

Carbon prices are used in two different ways: 1) Financial analysis of capital expenditure investments, acquisitions, Research and Innovation projects is based on current economic conditions. Carbon prices used for projections are based on forward prices of ETS. 2) The vertical axis of the Sustainable Portfolio Management (SPM) analysis tool is based on monetization of all environmental impacts of the production process (craddle to gate life cycle assessment, or ecoprofile) in a way that reflects the economic impact for society. The CO_2 price used in that analysis is 75 EUR per ton equ. CO_2.

BT GROUP

United Kingdom, Telecommunication Services

We use the cost of carbon when evaluating the viability of projects to become more efficient. The cost is directly linked to the cost of the cost of carbon in the Carbon Reporting Commitment which is set by UK Government but changes each year. Current price is £16.90/tCO_2 and we integrate this into our business case costs at £9.01/MWh for electricity and £3.12/MWh for natural gas.

CENTRICA

United Kingdom, Utilities

Our power generation operations in the UK, Republic of Ireland and some of our upstream oil and gas assets such as those in the North Sea and Netherlands are currently subject to the EU Emission Trading System (ETS) carbon price and/or the UK carbon price floor, which are set at a European and UK level respectively. In 2014, the combined impact of EU ETS carbon price and UK carbon price floor was around £13/tCO_2e. We produce internal forecasts of both the EU ETS carbon price and the UK carbon price floor as far out as 2035… We support the use of carbon prices as a mechanism for incentivising decarbonisation.

ENEL SPA

Italy, Utilities

A internal reference carbon price - publicly disclosed to the financial community - of 11 €/tCO_2 on CO_2 scope 1 emissions has been set as the short term 3 years planning horizon (2015-2017) at the EU level consistently with our regulatory outlook. With reference to the medium term scenario, the Group's business plan for 2015-2019 foresees capex expenditures on renewable amounting to 8.7 bn€ underpinned also by a rising carbon price triggered by recent regulatory changes in the EU ETS.

EDF

France, Utilities

EDF Group is using internal carbon prices to guide capital investment decisions in geographical areas where a public climate policy has been set up through taxes implementation or cap and trade systems like in EU with EU ETS...In jurisdictions that have established systems that give visibility to a carbon price it is natural for employing this price and expectations on its future evolution to, optimise on the short term our operations and on the long term to drive future investment decisions. For long term investment decisions CO_2 prices form a vital part of the EDF's analysis and decision making process. For investments taking place in carbon regulated areas (e.g. in the EU with the EU ETS regulation), EDF considers different scenarios (commodity prices, GDP, carbon price expectations, etc) that stress the investment assumptions and integrate the prevailing and forecasted CO_2 prices in the whole financial risk assessment of projects…We do not use a single carbon price in this exercise but rather several long term scenarios of prices that correspond to the different economic expectations together with appropriate embedded climate policies. This is a complex process involving the use of models and expert judgment.

E.ON SE

Germany, Utilities

E.ON SE uses an internal price of carbon. It is reported in Euros. More than 1,000 companies and over 70 countries are speaking out in support of a price on carbon and E.ON is actively taking part on it. Putting a price on carbon makes carbon emissions a factor of production. E.ON considers that this is absolutely essential if we are to do our part to help transform the world's energy systems, while at the same time ensuring supply security at affordable prices. In E.ON's investment cases an assumption for future carbon costs is taken into account. That is very likely to be CO_2-certificate costs within an emission trading scheme (like EU-ETS today). The investment cases are checked against a carbon price of 20 €/t CO_2 as a base case and 40 €/t CO_2 for the worst case.

EDP – ENERGIAS DE PORTUGAL S.A.

Portugal, Utilities

EDP uses an internal price on carbon for all geographies, in those covered with Emission trading schemes and in those where these schemes have not yet been implemented.

The internal price on carbon is always used in investment evaluation. In markets with trading schemes it is considered a cost and it is used within scenarios to assess the investment risk and to perform sensitivity analyses. In other markets an internal carbon price is considered in the evaluation scenarios...

is included in the ranges [5-60 €/ton CO_2] and it is translated in an estimated forward curve, which is yearly updated.

ENAGAS

Spain, Utilities

Carbon pricing is […] used as a planning tool to identify, assess and rank emission reduction methods and will be used to determine cost effective efficiency measures to undertake as part of Enagás Energy Efficiency Plan for 2015-2017[…] an internal carbon price has been taken into account for strategic operational decision-making. An example is the methane ships deviation from one regasification plant to another in order to reduce natural gas self-consumption, thus CO_2 emissions, produced when a plant is operating under its minimal operation conditions…

ENDESA

Spain, Utilities

Endesa uses an internal Price of Carbon that it is included in our internal budgets so as to ensure that potential future changes in GHGs emissions regulations are considered in our strategy as well as in our decision-making process.

FORTUM OYJ

Finland, Utilities

In addition to other commodity prices, the price of carbon is among the factors affecting the profitability of the investments. We do not disclose the price…Since 2005 Fortum has had a compliance obligation in the European carbon trading scheme (EU ETS) setting a price for carbon emissions. Almost all of company's emissions in the EU region are in the scope of the EU ETS. Price of carbon is among the key factors impacting the Nordic electricity price and fully integrated into company's investment decisions.

GAS NATURAL SDG SA

Spain, Utilities

We use an internal price of carbon in investment analysis in those countries where a carbon market is in place or it is expected… The CO_2 price is calculated in order to [determine if]

technology [is] competitive, displacing the cheaper fossil fuel technology at that point… Regarding the CO_2 price, the average value to fulfil the objectives is 43.74 €/tCO_2 with a 19% standard deviation. In 95% of the simulations the CO_2 price ranges between 30 and 60 €/tCO_2. These prices are good enough to achieve change in the merit order between gas and coal and not high enough, but close, to make the solar PV more competitive than the CCGT electricity production.

GDF SUEZ

France, Utilities

The Group uses internal regional carbon prices to assess its investments projects. The Corporate Scenarios are a set of plausible future scenarios including qualitative storylines, macroeconomics (energy demand and prices, growth assumption etc...), and energy commodities and carbon prices assumptions. These scenarios are used for strategic analysis and decision-making including project valuation, investment decisions and medium term planning. The impacts of carbon pricing scenarios on the new investment projects proposals are reviewed in light of the specific context of the host country and of its regulatory framework, and inform decision making.

IBERDROLA SA

Spain, Utilities

We use the internalization of a carbon price for planning analyses. This mechanism ascribes a cost to emitting CO_2 in each country where Iberdrola operates taking into account their national decarbonization policies. We include the potential cost of projects CO_2 emissions in all major investment decisions, using an average cost of €30 per ton of CO_2 in the long term. The use of the internal carbon price related to significant new investments is to promote consideration of existing or future scenarios where there may be a price on carbon.

NATIONAL GRID

United Kingdom, Utilities

National Grid applies a price of carbon based on the Social Cost of Carbon related to regulatory incentives. The incentives are for the reduction of Sulphur hexafluoride (SF6) leakage in the Electricity Transmission business; reduction of methane leakage in the Gas Distribution business; and the Greenhouse Gas Incentive to reduce fugitive emissions in the Gas Transmission business…Examples of carbon pricing influencing investment decisions include deployment of state of the art leak detection (gasvue cameras) and adhesive compound repairs to reduce SF6 leakage; and SF6 asset replacement…We believe that a strong carbon price signal in the economy is essential to drive the right behaviours, so have adopted the shadow price of carbon in some of our investment decision making processes across our operations. National Grid will continue to use the shadow price of carbon as it changes over time. To this end we are piloting the value of £56 per tonne of carbon as the shadow price of carbon for 2014/15.

PENNON GROUP

United Kingdom, Utilities

For project investment planning South West Water uses an internal price of carbon which is applied to estimated embodied and operational carbon over the lifespan of the project… This system uses carbon shadow pricing to monetise carbon emissions over the whole life of proposed projects. It uses the Government's shadow price known as the 'non-traded price of carbon'. This is priced at between £52/ tCO_2e (2010) and £200/tCO_2e (2050) and these annual values, and all those in between, are simply multiplied by the forecast whole life carbon emissions as part of the company's overall cost/benefit analysis. This helps to determine the company's short-list of planned interventions.

SNAM S.P.A

Italy, Utilities

Snam uses an internal price of carbon to quantify potential compliancy costs for acquiring EU-ETS allowances on the market. Such costs will be incurred from 2017 onwards, since, up to this date, the surplus allowances, which were not returned, will be used to comply with the ETS requirements…We currently consider a CO_2 price scenario of about 8 €/t in 2015, growing to about 21 €/t in 2020 and 33 €/t in 2025.

SSE

United Kingdom, Utilities

The use of a carbon price is a key component of many of SSE's operational and capital investment decisions. The price of carbon is reflected in decisions to run generation plant and renewable generation technologies, the investments made in new and existing capital projects and how we perform in the energy markets: For example: SSE's Energy Portfolio Management team internalises the price of carbon in its energy market models, for example in 2014/15 the uplift in 'spark spreads' combined with the April 2014 increase in the Carbon Price Support Rate resulted in greater use of gas-fired generation relative to coal.

SUEZ ENVIRONNEMENT

France, Utilities

In the UK, all industrial sectors using more than 6 GWh of energy per year are subject to a carbon tax per tonne of CO_2 emitted… As Bristol Water is subject to this tax, it has implemented an internal carbon price. For 2014/15 the carbon price used in the calculation of the carbon reduction commitment, which has remained constant since 2011/12, will increase from £12 to £16 per tonne…Besides the current internal carbon price currently implemented within SE's water operations in the UK, the Group is currently working towards the implementation of an internal carbon price at Group level…The first results of the implementation of carbon pricing within SE will be communicated before the end of 2015.

UNITED UTILITIES

United Kingdom, Utilities

Our cost-benefit modelling for future capital asset investment incorporates both carbon and energy pricing into the decision process. All UU projects are assessed for carbon impact in advance of project approval and carbon reductions/increases form a key part of all project business cases.

ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.

Turkey, Utilities

We are using certain prices for carbon in evaluation of our future projects. We include carbon revenues (and expenses if relevant) in our cash flow analysis of new projects.

GENERAL MOTORS COMPANY

USA, Consumer Discretionary

GM's Carbon reduction goal by Chevrolet Marketing used a price on carbon of $5/ton to establish a basis for implementing the goal…GM participates in EU Carbon Trading Scheme which sets a price on carbon for our energy efficiency efforts. In 2014 the facilities purchased allowances at $8.60/ton and offset the purchase of 50,000 tons with energy efficiency projects.

WALT DISNEY COMPANY

USA, Consumer Discretionary

Central to our environmental stewardship efforts is our ambitious goal of achieving zero net greenhouse gas emissions. Disney has found that by attaching a financial value to carbon, our businesses have an incentive to reduce their greenhouse gas emissions and to think creatively about new approaches and technology that will help reduce their carbon footprint. Pricing carbon has engaged our businesses to assess the impact of their operations and evaluate where they can make improvements to reduce their emissions…

ARCHER DANIELS MIDLAND

USA, Consumer Staples

An internal price of carbon is used to forecast potential costs of regulatory schemes such as cap and trade and to further analyze the benefits of energy-reduction projects.

CAMPBELL SOUP COMPANY

USA, Consumer Staples

While we don't put a fixed price per tonne on carbon, we do price it by lowering our internal ROI on energy conservation projects. For example in some cases we may lower that from 20% to 15%.

CHICKEN OF THE SEA INTL

USA, Consumer Staples

We use an estimated price of $10.25/ tCO_2-e for assessing our potential risk for carbon regulation…When assessing our risk for a potential carbon tax, we used our internal price of carbon ($10.25) to determine that our tax burden would be $76,711 for Scope 1 emissions and $100,552.50 for Scope 2 emissions.

HORMEL FOODS

USA, Consumer Staples

The monetized value of carbon is included in the capital appropriation process for energy and non-energy related emissions reduction projects, as well as water reduction projects with an energy-water nexus.

NORTH AMERICA

COLGATE PALMOLIVE COMPANY

USA, Consumer Staples

In support of our 2020 Sustainability Climate goal of reducing absolute CO_2 emissions from our global factories by 25%, Colgate purchases appropriate quantities of green power in the form of green-e certified US-based Renewable Energy Certificates (RECs). The cost of this green power purchase is then internally charged back to our global sites directly in proportion to their emissions. Although the REC costs are relatively modest compared to energy costs, we believe this sends yet another important financial signal to our sites, and further incentivise them to consider the potential opportunities associated with reducing their carbon emissions.

APACHE CORPORATION

USA, Energy

We evaluate various GHG reduction scenarios for anticipated carbon price costs in the U.K., Canada and – until the asset sale – Australia to justify investments that are otherwise of marginal value.

CENOVUS ENERGY INC.

Canada, Energy

Cenovus incorporates a carbon price model ($15-$65/tonne CO_2e) into future planning and assessing potential innovative investments. For oil sands projects, the carbon price model is applied over the project life of up to 40 years.

ARC RESOURCES LTD.

Canada, Energy

ARC's use of an internal price on carbon pertains to both Scope 1 and Scope 2 emissions (when relevant)…ARC operates in two jurisdictions that currently apply a price on carbon (BC and Alberta). In BC, it is prudent for all project decisions (ie: facility design for new or upgraded facilities) to include the carbon tax in project decisions due to its impact on operating costs. In both AB and BC, ARC does not have any type of compliance obligation under current regulations that would force emission reductions on our operations. We are, however, in a position to be a net seller of carbon offsets. Therefore, when we evaluate projects in those provinces that have a relevant protocol for offsets generation, we include the cost of carbon in our project evaluations. As we have seen since 2010, carbon offset projects can generate revenue for ARC that would not exist outside of these carbon markets…Internal projections for carbon pricing include a carbon price ranging from $5-$30 for all jurisdictions based on current estimations for short term impacts of regulatory changes. Longer term estimations include sensitivities beyond $30/tonne.…ARC's internal price of carbon is based upon successful offset sales and current market conditions (primarily through the BC and Alberta markets). It is incorporated into capital and maintenance projects when relevant. Project economics are evaluated using the price of carbon (include the BC carbon tax) when the potential for measurable carbon reductions exists.

CHEVRON CORPORATION

USA, Energy

Consideration of greenhouse gas (GHG) issues, climate change related risks and carbon pricing risks are integrated into Chevron's strategy, business planning, and risk management tools and processes…All capital projects of more than $5 million must conduct an initial analysis to estimate emissions and their potential range of carbon costs and benefits. Analyses are then integrated into the capital projects planning process…Consistent with Chevron's approach to managing greenhouse gases, the company recognizes the need to reduce GHG emissions where possible.

Chevron's Carbon Markets Team has developed tools to assess the exposure of the company to existing and future laws, policies and regulations. We identify and incorporate into our business planning anticipated financial and operational impacts of carbon regulation. Further, Chevron conducts periodic scenario analyses that incorporate the cost of future carbon emissions. Indicative carbon price forecasts allow estimation of potential financial risk on a consistent basis. We developed tools to identify, assess and rank emissions reduction methods; conduct economic analysis; and integrate GHG factors into decision making and overall project development and management.

For example, one tool helps identify and assess the viability of potential Clean Development Mechanism (CDM) carbon emissions reduction projects. The CDM is an agreement under the Kyoto Protocol that encourages investment in ventures to reduce emissions in developing countries. Our CDM tool offers a systematic approach to prioritizing opportunities and assessing the likelihood of their success. For major capital-project development and approval, we estimate a project's incremental emissions profile, assess the financial impact of GHG regulations, and describe the emissions reduction options considered and implemented…

CONOCOPHILLIPS

USA, Energy

For operations in countries with existing or imminent GHG regulation, the cost of regulatory compliance is evaluated based on specific regulation and local greenhouse gas pricing information. This information is incorporated into the base-case economic analysis for ongoing and new capital expenditures. For operations in countries without existing or imminent GHG regulation, all capital projects with a total installed cost of $150 million or greater or that result in a change to annual emissions in excess of 25,000 metric tons of CO_2 equivalent are required to perform a sensitivity analysis that includes carbon cost as part of the project's economic analysis. The company uses an estimated market cost of greenhouse gas emissions in the range of $6 to $51 per tonne (in 2014 uninflated terms) depending on the timing and country or region to evaluate future project opportunities.

ENBRIDGE INC.

Canada, Energy

In efforts to determine the competitiveness of natural gas as a fuel source (in comparison to fuel oil or propane) under a market mechanism for carbon, such as cap and trade, the Gas Distribution business unit applies a theoretical price on carbon emissions. In 2014, a price of $200 tonne of carbon dioxide equivalent (t CO_2e) was applied to determine the impacts to commodity prices. It was determined that even at $200 t CO_2e natural gas was still a lower cost alternative to fuel oil, propane and electricity. This exercise is applied on a 20 year time horizon and conducted on an annual basis to identify any changes from an economic perspective.

ENCANA CORPORATION

Canada, Energy

Though the future cost of carbon is subject to uncertainty, the Corporate Responsibility, Environment, Health and Safety (CREHS) Committee of Encana's Board of Directors reviews potential compliance risks and liabilities associated with predicted carbon prices under various regulatory regimes and emission trading schemes. The CREHS Committee reviews the impact of a variety of carbon constrained scenarios on Encana's business strategy using a forecasted carbon cost range of CAD$20 to CAD$125 per tonne of emissions, applied to a range of emissions coverage levels across its North American operations.

EXXON MOBIL CORPORATION

USA, Energy

We address the potential for future climate change policy, including the potential for restrictions on emissions, by estimating a proxy cost of carbon. This cost, which in some geographies may approach $80 per ton by 2040, has been included in our Outlook for several years… We require all of our business lines to include, where appropriate, an estimate of GHG-related emissions costs in their economics when seeking funding for capital investments.

HESS CORPORATION

USA, Energy

A cost of carbon is incorporated in all significant new projects as a sensitivity analysis to financials to ensure that we understand and evaluate the ramifications that potential carbon regulations may have on our business. If a carbon regulation is in effect in a particular country where we are doing business, the cost of carbon is part of the base financial analysis as opposed to being used in a sensitivity analysis.

IMPERIAL OIL

Canada, Energy

We address the potential for future climate change policy, including the potential for restrictions on emissions, by estimating a proxy cost of carbon. This cost, which we assume may approach US $80 per ton by 2040, has been included in our planning bases for several years…Imperial addresses the potential for future climate-related controls, including the potential for restriction on emissions, through the use of a proxy cost of carbon. This proxy cost of carbon seeks to reflect all types of actions and policies that governments may take over the outlook period relating to the exploration, development, production, transportation or use of carbon-based fuels.

KEYERA CORP.

Canada, Energy

By employing an internal carbon price, Keyera is able to monitor intensity and total emissions and how these numbers and dollar amounts can put the company at risk…An internal price of $15 per kilotonne of CO_2e in Alberta and a price of $30 per kilotonne of CO_2e in British Columbia for Scope 1 emissions.

SUNCOR ENERGY INC.

Canada, Energy

Suncor's emissions from its Alberta based oil sands operation measures Scope 1, 2 and 3 sources. The rationale for applying an internal price on carbon is to determine how a change to Alberta's current greenhouse gas regulation may impact our oil sands projects (which represent the majority of our compliance obligations). Suncor applies an internal carbon price that is above current regulatory costs and applies a stress test to that price. The actual price used ranged from $15.00 - $55.00, plus a range of CO_2e intensity reduction targets were also considered…The impact of higher carbon penalties is just one of many risks that are evaluated as part of our rigorous project economic assessment process.

GOLDMAN SACHS GROUP INC.

USA, Financials

All relevant business units factor an Internal Price on Carbon into energy efficiency, renewable energy and other emission reduction activities through the use of a Return on Investment model. This model is part of our carbon reduction framework which prioritizes internal reduction measures across both our data centers and offices and has required the enhanced integration of our Capital Projects, Facilities Management and Technology teams.

TD BANK GROUP

Canada, Financials

We measure our cost of carbon based on the costs of our carbon commitment, measured through the purchase of renewable energy credits (RECs) and carbon offsets. These costs are calculated on an annual basis and are charged back to our businesses based on their relative contribution, representing an internal price of carbon of approximately $10 per tonne of CO_2e. The price of carbon is used to drive decision making and investment to manage future risks related to climate change.

WELLS FARGO & COMPANY

USA, Financials

We have used a price on carbon or "shadow pricing" in our assessment of potential credit commitments to relevant power industry companies. Our analysis shows that while many of our customers in carbon intensive industries may face direct risks associated with future GHG regulations, our exposure to credit risks due to this is minimal.

COVANTA ENERGY CORPORATION

USA, Industrials

We selectively use the U.S. Federal Government's Social Cost of Carbon to demonstrate & communicate the economic benefits of landfill diversion and energy from waste with policy and decision makers.

CUMMINS INC.

USA, Industrials

An internal price of carbon is used when evaluating funding of energy efficiency projects. The price used is market-based, generally the price of carbon on a current public market exchange. Cummins is still at the stage of its energy efficiency projects where the price of carbon is usually not a determining factor in whether a project is funded. There are instances, however, when a project may not have a high return on investment or meet other financial hurdles but does avoid a significant amount of GHGs, so project may then get funded in that way…Cummins uses the cost of carbon as part of the financial decision making process in energy efficiency capital funding of projects.

DELTA AIR LINES

USA, Industrials

In addition to the cost of fuel, Delta has incorporated cost of CO_2 emissions into decision making. Currently, this is used to run various sensitivity analyses to determine the cost of current/future regulation.

OWENS CORNING

USA, Industrials

For use in internal decision making and risk analysis, we place an economic value on carbon emissions to help frame the challenges and opportunities in monetary, more broadly understood terms than simply tons of emissions… Quantifying these added costs, in the event that a price is put on carbon in regions around the world where a current price or trading scheme is not in place, provides additional insight into our business decisions. We bracket this analysis, on the low end at $10/metric ton and a high of $60/metric ton.

STANLEY BLACK & DECKER, INC.

USA, Industrials

Our sustainability scorecard system calculates potential carbon tax liabilities at the facility level based on actual emissions and enacted/pending/proposed legislation in given jurisdictions. For example it levies a 25 USD($) per metric tonne (mT) internal price of carbon for locations in France; 23 USD / mT Australia; 18 USD / mT Denmark; 150 USD / mT Sweden; with examples also applicable to certain USA states; Alberta and British Columbia, Canada; India; Ireland; certain regions of China; etc. In forthcoming annual budget processes we then will allocate calculated carbon tax amounts to fund emissions reduction projects at facilities in an effort to reduce future carbon tax exposure.

EMC CORPORATION

USA, Information Technology

During 2014, a task force was convened to develop a proposal for pricing carbon in EMC. Comprising representatives from the Office of Sustainability, Global Real Estate, Environmental Health & Safety, and Corporate Finance, the task force examined potential regulatory costs from greenhouse emissions, the externalities associated with emissions, and the tangible and intangible value to the company of reducing emissions. The resulting proposal is to include the “risk cost of carbon” – i.e., expected long term costs associated with increased emissions – into capital project planning. The proposal was approved by the Chief Accounting Officer and is planned to be implemented during 2015.

GOOGLE INC.

USA, Information Technology

Google uses carbon prices as part of our risk assessment model. For example, the risk assessment at individual data centers also includes using a shadow price for carbon to estimate expected future energy costs.

MICROSOFT CORPORATION

USA, Information Technology

Effective July 2012, the start of Microsoft FY13, Microsoft began charging an incremental fee based on the carbon emissions associated with our operations. The fee is charged to individual business groups based on the emissions that they incur through their use of offices, software development labs, and datacenters, as well as business air travel. The funds that we collect through the fee go into a central fund that is subsequently invested in internal efficiency initiatives, green power, and carbon offset projects (to offset our unavoidable emissions) to ultimately enable Microsoft to reduce carbon emissions and be net carbon neutral…In FY14 (the reporting period for this response), our carbon price was $4.40/mt$CO_2$e.

BARRICK GOLD CORPORATION

Canada, Materials

$24.15 Australian Dollars for the sites in Australia. In Nevada we have a price range but cannot disclose publicly due to limited market players [Barrick and NV Energy]…In Australia, when determining project economics, we factor-in the price of carbon. We have also run sensitivity analysis on various carbon prices [existing and future] to better understand the potential impact on project economics. Given two options that produce similar economic returns, we will go with the option that produces the lowest GHG emissions.

CATALYST PAPER CORPORATION

Canada, Materials

For our three British Columbian facilities, we use a $30 per tonne CO_2e for internal accounting purposes in the development of return on investment calculations and financial analysis of capital expenditures.

E.I. DU PONT DE NEMOURS AND COMPANY

USA, Materials

An illustrative high/medium/low carbon price scenario is applied to a limited number of capital allocation discussions. This internal carbon price is one of several methods that we use to guide investment in emission reduction and other capital investment activities within DuPont. The way that we use this tool is to embed a high/medium/low carbon price scenario into our process for evaluating the economics of all capital investments over $7 million (USD) and others with potentially significant GHG emissions impacts.

HUDBAY MINERALS INC.

Canada, Materials

Hudbay does not have a single price of carbon, but instead performs a sensitivity analysis based on multiple carbon tax prices. By using a range of potential carbon prices ($20-50/tonne), we analyze the impact an imposed carbon tax would have on the company's total revenue and profitability.

TECK RESOURCES LIMITED

Canada, Materials

There is a great deal of uncertainty in determining the future financial implications of carbon costs. We've developed and utilize a suite of tools to manage our regulatory risks and their financial implications. We currently incorporate a carbon price into our capital and risk decision processes…Where a clear and certain carbon price is present, we incorporate that price and any known and/or planned changes to the carbon price. Where uncertainty exists, we may conduct sensitivity analyses to better understand what our exposure and risk are under different carbon pricing and regulatory scenarios…For example, current forecasting using a variety of scenarios demonstrates an exposure in 2020 ranging from $30M to $60M for our BC Operations alone.

THE DOW CHEMICAL COMPANY

USA, Materials

The capital allocation process uses a price on carbon for projects impacting jurisdictions where there is a current or projected carbon pricing situation. This process includes a long-term look at the impact of a carbon-constrained economy on all major projects across the company.

AMEREN CORPORATION

USA, Utilities

Ameren includes a carbon price in its long-term resource planning of its Missouri regulated business through its Integrated Resource Plan (IRP) process (i.e., Scope 1 emissions from generation) (i). The price is included to represent the expectation for regulation of carbon dioxide emissions through a mechanism that establishes an explicit price for carbon dioxide emissions, such as a carbon tax or cap-and-trade program (ii). For its 2014 IRP, Ameren Missouri used a base price of $34 per ton starting in 2025 and escalating at approximately 8.5% per year, with a low price scenario starting at $23 per ton and a high scenario starting at $53 per ton, both starting in 2025 (iii and iv)…Establishment of the carbon price assumptions includes a review of price assumptions used by other utilities and government agencies, including the Social Cost of Carbon estimates used by the federal government. Inclusion of a carbon price affects Ameren Missouri's evaluation of both new and existing generation resources, including potential retirement of fossil generation, and also increases the cost effectiveness of energy efficiency measures.

AMERICAN ELECTRIC POWER COMPANY, INC.

USA, Utilities

AEP uses a carbon price within its Integrated Resource Planning (IRP) process to appropriately capture the potential future policy and regulatory risk associated with carbon emissions…The IRP is a formal process within many of our states, which involves publically disclosing a plan for future operations that is subject to review by regulators and stakeholders…The carbon price used within the IRP process is a fundamental input that places a relative value on carbon dioxide emissions from AEP's electric generating facilities and future facilities that may be considered within the planning process. The use of a carbon price favors investment in new zero or low carbon generation technologies as well as gradual divestment (i.e. retirement) of older carbon-intensive generating sources…AEP's current carbon price reflects an expected market value for carbon emissions predicated upon either legislation or regulatory action requiring carbon emission reductions in the early part of the next decade.

CAPITAL POWER CORPORATION

Canada, Utilities

All new projects are evaluated using an internal price on carbon as part of the expected project economics. Capital Power uses an internal price of carbon including assumptions regarding future increases in price and we stress test development and acquisition opportunities based on changes to carbon pricing.

CONSOLIDATED EDISON, INC.

USA, Utilities

New York State is a participant in the Regional Greenhouse Gas Initiative (RGGI), a market-based system that requires electric generating units (EGUs) to acquire fungible carbon dioxide allowances by auction. EGUs must purchase one RGGI carbon dioxide allowance for every ton of carbon dioxide emitted. As such, the cost of carbon — in the form of projected RGGI allowance costs — is incorporated into the cost of CECONY-generated electricity and into projections of likely wholesale power costs.

DUKE ENERGY CORPORATION

USA, Utilities

Duke Energy has for years included a range of CO_2 prices in its Integrated Resource Planning (IRP) process. This is the process used to evaluate new generation resource options and options for upgrades to existing resources (adding new emission controls for example) based on multiple inputs and variables. Incorporating prices on CO_2 emissions into the IRP process allows us to evaluate resource needs against potential climate change policy risk which helps us make more robust planning decisions…By using a price on carbon in our planning process, lower and zero CO_2 emitting options receive an economic advantage relative to higher emitting options.

ENTERGY CORPORATION

USA, Utilities

Entergy uses a forecast price on CO_2 as a strategic tool to evaluate 1) the impacts and opportunities a CO_2 price could have on long lived asset investments, 2) to inform Integrated Resource Plan scenarios designed to determine the optimal mix of future resources, and 3) to help identify least cost methods for meeting its voluntary CO_2 stabilization goals...Entergy maintains a projection on CO_2 pricing. This internal cost and projection is used to evaluate business decisions such as whether or not to conduct power uprates, acquisitions, deactivations, power purchases and divestitures.

EXELON CORPORATION

USA, Utilities

Exelon uses a cost on carbon in its market fundamentals analysis to capture the future impacts of the EPA's regulation of GHG's under Clean Air Act Section 111(d) for existing power plants. These market performance projections guide our investments in new and existing electric generation projects and help to guide the implementation of our strategic plan.

NRG ENERGY INC

USA, Utilities

NRG conducts scenario analysis that includes carbon pricing as part of our prudent financial risk assessment. In this sense, current and potential carbon pricing is embedded into management decision-making processes… The price of carbon is determined by the Policy, Strategy and Sustainability department in conjunction with Investor Relations and Legal Counsel…One example of how carbon pricing affects investment decisions is the shift toward investment in renewables are carbon capture technologies.

NISOURCE INC.

USA, Utilities

NIPSCO's 2014 Integrated Resource Plan projects a cost of carbon beginning in 2025. NIPSCO is estimating that a CO_2 cost will be begin at approximately $20.00/ton.

OGE ENERGY CORP.

USA, Utilities

OG&E utilizes a CO_2 price in a sensitivity analysis to understand the impact to generating portfolios with the addition of a cost on carbon dioxide. OG&E's current Integrated Resource Plan carbon price sensitivity utilizes a $/ton CO_2 price which creates price parity between different generation technologies (specifically, in this case, efficient gas generation and emission controlled coal generation).

PINNACLE WEST CAPITAL CORPORATION

USA, Utilities

CO_2 prices are challenging to forecast because, despite numerous efforts, the federal government has not reached policy consensus on the magnitude, timing, or need for a carbon tax. Public support for less carbon intensive resource options has garnered strength over the years and that momentum is expected to continue. Therefore, in a 15-year forecast, robust planning suggests the potential for some level of CO_2 pricing or regulation… APS is incorporating assumed carbon costs based on the actual trading price of CO_2 allowances in the California market as of September 24, 2013.

SEMPRA ENERGY

USA, Utilities

An internal price of carbon is particularly relevant for our utilities in California, where a cap and trade program has been adopted… SoCalGas and SDG&E calculated their Forecast Proxy Price ($13.06 / metric ton of CO_2 equivalent ($MTCO_2e$)) based on the five-day average of January 5, 2015 – January 9, 2015.

TRANSALTA CORPORATION

Canada, Utilities

TransAlta evaluates all internal business decisions specific to the jurisdictions in which we operate: Where a jurisdiction has a clear carbon regulatory framework in place, or a clearly stated policy plan, we use that as the planning tool. In other jurisdictions where there is less clarity, we apply scenario analysis to an effective carbon price to guide decisions. We currently pay $15 a tonne for emissions over and above our baseline in Alberta as part of the SGER regulation. This is scheduled to increase to 20$ in 2016, and 30$ in 2017. We model carbon price estimates at approximately $30 a tonne for facilities where we have obligations, as we do anticipate the price rising in the future. While we do produce offset credits from our wind facilities, we do not include full-price modeling in budget calculations as the primary driver for wind facilities is their electrical generation, not their offset generating potential. We currently purchase carbon credits at market value in the California WCI Cap and Trade System, and we have begun modeling our Ontario potential obligations under this system as well.

XCEL ENERGY INC.

USA, Utilities

We use an internal price of carbon in our modeling for our resource plans. For the Upper Midwest 2016-2030 Resource Plan, CO_2 planning values were: A starting assumption of $21.50 per ton carbon dioxide (CO_2) as a regulatory cost, starting in 2019 and escalating at inflation; Varied down to a low of $9/ton and up to $34/ton, both beginning in 2019, as established by the State of Minnesota (Docket No. E999/CI-1199); An additional sensitivity of no carbon cost was also performed, as required by the State of North Dakota; “late implementation” sensitivity cases were tested, both $9 and $24 starting in 2024; the societal value of carbon as an externality was included as a sensitivity case….Carbon pricing is also used as a sensitivity in resource planning in New Mexico and Colorado.

WESFARMERS

Australia, Consumer Staples

In business development decisions we apply a sensitivity analysis of a carbon price if we expect a significant emissions impact from the project.

SANTOS

Australia, Energy

…In the absence of a global market benchmark Santos uses a range of carbon price assumptions to reflect different high, medium and low carbon scenarios.

WOOLWORTHS LIMITED

Australia, Consumer Staples

Despite the implementation and revocation of a price on carbon by the Australian Government, Woolworths still factors in a carbon price for major energy efficiency and carbon emission reduction projects.

AMP

Australia, Financials

From the perspective of maintaining AMP's carbon neutral position, the ELT is focused on reducing AMP's total greenhouse gas emissions footprint on a least cost basis ($/tCO$_2$e). When reviewing potential energy efficiency initiatives (ROI, pay-back periods etc) $/tCO$_2$e is considered alongside the cost to the business of purchasing voluntary carbon credits from the international voluntary carbon market to maintain AMP's carbon-neutral position.

ORIGIN ENERGY

Australia, Energy

We use an internal price on carbon, primarily for strategic planning purposes and for consideration in investment decisions. The calculation methodology and price fluctuate with changes to market dynamics and the regulatory environment. The outlook is updated quarterly, and is based on both external views of abatement costs and internal modeling of the marginal price required to achieve abatement tasks.

FLETCHER BUILDING

New Zealand, Materials

Fletcher Building Ltd participates in the New Zealand Emission Trading Scheme and as a result receives an allocation of New Zealand Units (NZUs) related to the activities of Emission Intensive, Trade Exposed (EITE) businesses of the group... Within Fletcher Building the Treasury office sets a price of carbon to facilitate the transactions between business units related to utilising allocated units to off-set indirect obligations of fossil fuel use.

OCEANIA

INSURANCE AUSTRALIA GROUP

Australia, Financials

IAG's Carbon Neutral commitment means that we have had an active internal price on carbon that has been input into decisions made about potential investment opportunities and business case paybacks.

AUSTRALIA AND NEW ZEALAND BANKING GROUP

Australia, Financials

Investments in energy efficiency and other carbon reduction initiatives are considered in the context of our balancing of such investments with the cost of purchasing offsets to maintain our carbon neutral status. ANZ also paid for the cost of carbon in our Australian-based electricity purchases during the reporting year ($24.15 per tonne of CO_2e until the repeal of the Australian carbon pricing mechanism, effective 30 June 2014) and therefore considers how to reduce this cost in business cases for energy efficiency projects. We also undertake Recognised Energy Savings Activities that are eligible to create fungible certificates under two state-based energy savings schemes in Australia…The revenue we generate from the sale of certificates under these schemes is factored into cost-benefit analysis of large-scale energy efficiency projects typically in our commercial office locations as it helps to reduce payback opportunities. Prices gained for these certificates in recent years have ranged between $14–$21 (per tonne of carbon dioxide equivalent)…ANZ has a Supply Chain Governance Framework in place to monitor any future price of both carbon offsets and regulatory governed electricity carbon costs.

STOCKLAND

Australia, Financials

In the absence of a national carbon trading scheme, Stockland assesses potential carbon pricing internally in a number of ways. For assets, we receive a five year energy forecast that includes a price probability for legislation introducing a carbon price. In 2011, we assessed the impact of a price on carbon across our operations and through our supply chain. This allows us to understand direct and indirect cost impacts.

WESTPAC BANKING CORPORATION

Australia, Financials

In Australia, the Westpac Group is currently reviewing and updating the internal carbon pricing mechanism to better reflect international market prices for carbon. The internal price on carbon is used for property related energy efficiency business case development.

AGL ENERGY

Australia, Utilities

To ensure that the financial risks and opportunities associated with the introduction of future regulations in relation to climate change are addressed, AGL has developed a strategy and carbon valuation model that incorporates the introduction of a National Electricity Market (NEM) wide carbon price. The model forecasts likely carbon constraints and determines the least cost pathway for achieving them. In this way, carbon prices can be determined and incorporated into business decisions. The details of this model are commercially sensitive, however the following considerations are incorporated: - Current political party policies and stakeholder positions around the introduction of constraints; - Climate science and likely emission reduction targets; - Likely timing of carbon constraints being introduced; - Likely carbon constraint and price; - Eligibility of assets in any trading schemes, including permit allocation; and - Impact of carbon prices on wholesale electricity. AGL has used this model to estimate the NPV impacts on asset values as a result of climate change policy and uses these principles to evaluate assets at the time of new acquisitions. A fixed carbon price is also used for internal asset maintenance capital budget decision making.

NATURA COSMETICOS SA

Brazil, Consumer Staples

Natura understand that every carbon project has its own peculiarity such as: benefits, costs and challenges to keep the project activities in a long term. For those reason the price of carbon credits is negotiated with each project proponent that was selected by Natura Public Tender…To accelerate carbon-emission reductions in the years ahead, we launched the Less Carbon, More Productivity program in 2010. The initiative was a structured effort to mobilize everyone at Natura in the quest to reduce emissions, with the additional development of being allied to a cost reduction program. As a result, the economic and environmental pillars of the company's triple bottom line were integrated into a single initiative, bringing the carbon issue even closer to the principles of business management.

PETRÓLEO BRASILEIRO SA – PETROBRAS

Brazil, Energy

At the moment Petrobras has a project evaluation model which has the possibility to incorporate carbon price and has done some internal exercice with it. If necessary, considering future decisions in COP 21 and brazilian government, the Company will formalize the use of carbon price in a comprehensive way.

ITAÚ UNIBANCO HOLDING S.A.

Brazil, Financials

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 and in our investments in internal infrastructure…In our company's evaluation model, we use as reference an estimate aligned with the international market (US/Australia), which is a more conservative way of pricing this type of externality, via the taxation model. This amount is used as an input variable in our modeling system for estimating the cost of the greenhouse gas emissions of the companies listed on the Brazilian Stock Exchange. Based on this, we calculate the amount of the financial impact of these emissions on the market value of the companies and, consequently, on the price of their stocks…Additionally, this year we initiated a pilot project for incorporating carbon costs into the valuation of investments in infrastructure. The pilot project was focused on the valuation of an energy self-generation system based on photovoltaic panels installed at our main administration center…In this initiative, the amount of the carbon credit saved by the energy generated during the lifetime of the photovoltaic panel (25 years in this case) was discounted from the final cost of the project…The following criteria were considered for the valuation…Price per ton of carbon in the year of purchase (Approximately R$ 12/tCO_2e).

SOUTH AMERICA

ITAUSA INVESTIMENTOS ITAU S.A.

Brazil, Financials

…uses the internal price of carbon to build scenarios that predict the pricing of carbon in its activities and services and also to study what the company's role would be in a possible cap & trade system in Brazil. The creation of scenarios, using the carbon price of the European market, enables the company to better understand what financial implications this would have on its business from the standpoint of taxes and fees on products and services that emit CO_2, penalties if reduction targets are not met and also how to manage this risk and/ or opportunity…One of the scenarios set up to analyse financial implications caused by possible regulatory risks used prices from the European carbon markets for every carbon equivalent emission. In this exercise, the financial estimate amounted to around R$ 8.5 million, considering the emissions of scope 1 and 2 of the Company. In the expectation that global agreements regarding GHG emissions will become mandatory in 2020 and that Brazil has to reach the emission reduction targets, the convenience of a cap & trade in Brazil is under discussion.

BRASKEM S/A

Brazil, Materials

Aiming to benefit projects that present a reduction in GHG emissions, Braskem is testing the deployment of a process for analyzing investments using the virtual carbon value…The system multiplies the total positive or negative value of GHG emissions by the unitary value in the currency, resulting in a virtual result of the positive or negative impact of GHG emissions… For example, we have the project of an energy optimizer in an industrial plant located at the Northeast region of Brazil. The project, before considering the contribution of carbonic emissions, has the following results: CNV= US$ 9.7 MM and CNV/ Inv = 8.9. After considering the result of the virtual emission, the value improved significantly to CNV = US$ 15.8 MM and CNV/ Inv = 14.6, due to the positive…GHG emissions reduction.

DURATEX S/A

Brazil, Materials

Duratex uses the internal price of carbon to build scenarios that predict the pricing of carbon in its activities and services and also to study what the company's role would be in a possible cap & trade…One of the scenarios set up to analyse financial implications caused by possible regulatory risks used prices from the European carbon markets for every carbon equivalent emission. In this exercise, the financial estimate amounted to around R$ 8.5 million, considering the emissions of scope 1 and 2 of the Company. In the expectation that global agreements regarding GHG emissions will become mandatory in 2020 and that Brazil has to reach the emission reduction targets, the convenience of a cap & trade in Brazil is under discussion.

ENAEX

Chile, Materials

Enaex has defined as internal price of carbon the one resulted from the operational cost from its two CDM projects divided by total issued CER (certified emissions reductions)… In example, during reporting year 2014, the operational cost of both CDM projects was USD1.5 million and a total issued CERs 676000. Therefore we arrived to an internal price of carbon 2014 of 2.4 USD/CER.

VALE

Brazil, Materials

Considering Vale's Carbon Goal and the regulatory risks identified for our business (ii), in 2014, Vale developed its own MAC Curve (Marginal Abatement Cost Curve) to identify the best cost effective mitigation options and further select and prioritize projects below a threshold price…Vale chose a flat threshold price of carbon of US$ 50,00 per tCO_2e over time as a proxy to carbon price in order to achieve Vale's carbon goal…

CENTRAIS ELETRICAS BRASILEIRAS S/A (ELETROBRAS)

Brazil, Utilities

Eletrobras is not currently subject to carbon taxation, however, continuous risk assessment carries out sensitivity studies on possible financial impact from CO_2 emission taxation upon the revenue of… thermal power plants…The rule for taxation of emissions in Chile was used, applying the amount of US$ 5.00 for the ton of CO_2 emitted in power-generating plants.

COMPANHIA ENERGETICA MINAS GERAIS – CEMIG

Brazil, Utilities

Rationale for employing a price: First, it is important to note that in Brazil there is no set price for carbon. However, when assessing the acquisition of projects using fossil fuels, Cemig carries out internal analyses of carbon risk and its financial impact on the Company…The value used in the carbon pricing of fossil fuel-using projects that might be acquired is the mean value of annual averages of Verified Carbon Units (VCUs), which is currently equivalent to R$ 3.56.

Carbon price disclosure by sector

Africa
Carbon price disclosure by sector

Today

Companies currently using an internal carbon price

	Company	Country	Price (US$)
Consumer Staples	Illovo Sugar Ltd	South Africa	
	Tiger Brands	South Africa	8.93
Energy	Exxaro Resources Ltd	South Africa	8.93
	Sasol Limited	South Africa	
Financials	Barclays Africa	South Africa	
	Redefine Properties Ltd	South Africa	8.93
Health Care	Mediclinic International	South Africa	8.93
	Netcare Limited	South Africa	
Industrials	Barloworld	South Africa	
	Group Five Ltd	South Africa	0.01; 3.57
	Transnet	South Africa	8.93
Materials	Anglo American Platinum	South Africa	3.57
	AngloGold Ashanti	South Africa	4
	Arcelor Mittal South Africa Ltd	South Africa	
	Gold Fields Limited	South Africa	11
	Harmony Gold Mining Co Ltd	South Africa	3.57
	Kumba Iron Ore	South Africa	8.93
	Sibanye Gold Ltd	South Africa	2.53
Telecom. Services	MTN Group	South Africa	
Utilities	Eskom	South Africa	

In two years

Companies that anticipate using an internal carbon price in the next two years

Consumer Discretionary
Imperial Holdings, South Africa
Woolworths Holdings Ltd, South Africa

Consumer Staples
Distell Group Ltd, South Africa
Golden Sugar Company LTD, Nigeria
RCL Foods Ltd, South Africa
Tongaat Hulett Ltd, South Africa

Financials
Standard Bank Group, South Africa

Industrials
Basil Read, South Africa
Grindrod Ltd, South Africa
Reunert, South Africa

Information Technology
Maktech And Tel, United Republic of Tanzania

Materials
African Rainbow Minerals, South Africa
Mpact Limited, South Africa
Polykraft, Ghana
Sappi, South Africa

Telecommunication Services
Telkom SA Limited, South Africa
Vodacom Group, South Africa

Asia
Carbon price disclosure by sector

Today

Companies currently using an internal carbon price

	Company	Country	Price (US$)
Consumer Discretionary	Al Karam Towel Industries	Pakistan	
	Coway Co Ltd	South Korea	8.45
	Denso Corporation	Japan	
	Mazda Motor Corporation	Japan	
	Nexen Tire	South Korea	8.91
	NGK Spark Plug Co., Ltd.	Japan	357.37
	Nissan Motor Co., Ltd.	Japan	
	Shaoguan Hongda Gear Co., Ltd	Greater China	
	Toyo Tire & Rubber Co Ltd	Japan	
Consumer Staples	KAO Corporation	Japan	
	Kirin Holdings Co Ltd	Japan	
Energy	Essar Oil	India	15
	JX Holdings, Inc	Japan	
	PTT	Thailand	
	PTT Exploration & Production Public Company Limited	Thailand	
	S-Oil Corp	South Korea	4.22
Financials	E.Sun Financial Holding Co	Greater China	
	KB Financial Group	South Korea	8.45
	Mizuho Financial Group, Inc.	Japan	
	Mori Building Co, Ltd.	Japan	
	ORIX Corporation	Japan	
	Sompo Japan Nipponkoa Holdings, Inc	Japan	
	Sumitomo Mitsui Trust Holdings, Inc.	Japan	
	Swire Pacific	Greater China	
	T. GARANTİ BANKASI A.Ş.	Turkey	
Health Care	Alps Pharmaceutical Industry Co., Ltd.	Japan	
	Astellas Pharma Inc.	Japan	
Industrials	Cathay Pacific Airways Limited	Greater China	
	Dai Nippon Printing Co., Ltd.	Japan	
	East Japan Railway Company	Japan	
	Furukawa Electric Co., Ltd.	Japan	
	Hong Kong Aircraft Engineering	Greater China	3.19
	Horoz Lojistik Kargo Hizmetleri ve Tic. A.?.	Turkey	
	IHI Corporation	Japan	
	Kajima Corporation	Japan	41.55
	Kokuyo Co., Ltd.	Japan	6.65
	LG	South Korea	8.45
	Nippon Express Co., Ltd.	Japan	

Asia
Carbon price disclosure by sector

Continued from previous page

Today

	Company	Country	Price (US$)
Industrials, continued	PEGASUS HAVA TAŞIMACILIĞI A.Ş.	Turkey	7.86
	Taisei Corporation	Japan	
	Toto Ltd.	Japan	
	YÜKSEL İNŞAAT A.Ş.	Turkey	10.10-13.47
Information Technology	Advantech Co, Ltd.	Greater China	
	AU Optronics	Greater China	
	Chunghwa Picture Tubes Ltd	Greater China	
	Darfon Electronics Corp	Greater China	6.28
	FARATRONIC	Greater China	
	FujiFilm Holdings Corporation	Japan	
	GEW	Greater China	
	GOODWELL	Greater China	
	Hitachi, Ltd.	Japan	
	IRIS	Greater China	9.42
	Joy Technology (Shenzen) Corp.	Greater China	
	LEOCO CORPORATION	Greater China	
	NEC Corporation	Japan	
	Rohm Co., Ltd.	Japan	
	Samsung Electro-Mechanics Co., Ltd.	South Korea	
Materials	Asahi Printing	Japan	
	Beijing Wheaton Glass	Greater China	8.63
	Dalmia Cement (Bharat) Limited	India	
	Denki Kagaku Kogyo Kabushiki Kaisha	Japan	16.62
	Hitachi Chemical Company, Ltd.	Japan	106.38
	JSR Corporation	Japan	24.93
	LG Chem Ltd	South Korea	25.34
	Lotte Chemical Corp	South Korea	8.45
	Mitsubishi Chemical Holdings Corporation	Japan	
	SK Chemicals	South Korea	
	Taisho Printing	Japan	
	Toyo Ink SC Holdings Co., Ltd.	Japan	
	Ube Industries, Ltd.	Japan	8.31
Telecom. Services	KDDI Corporation	Japan	41.55–83.11
	NTT DOCOMO, INC.	Japan	
	SK Telecom	South Korea	
Utilities	Korea District Heating Corp.	South Korea	
	Korea Gas Corp	South Korea	
	Tokyo Gas Co., Ltd.	Japan	
	ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.	Turkey	
	ZORLU ENERJİ ELEKTRİK ÜRETİM A.Ş.	Turkey	

In two years

Companies that anticipate using an internal carbon price in the next two years

Consumer Discretionary
ARÇELİK A.Ş., Turkey
Aromsa A.Ş., Turkey
Dentsu Inc., Japan
Dongjin Textile Vina Co., LTD, Vietnam
Guangzhou Huabao Glass Co Ltd, Greater China
Hankook Tire Co Ltd, South Korea
Hanyoung Industry Co., Ltd, South Korea
Honda Motor Company, Japan
Hotel Shilla Co., Ltd., South Korea
Hua Feng Textile Group, Greater China
Hyundai Mobis Co Ltd, South Korea
Hyundai Motor Co, South Korea
JNS Instruments Limited, India
KM&I, South Korea
Korea Delphi Automotive Sys Corp, South Korea
Kunstar, Greater China
LG Electronics, South Korea
Mahindra & Mahindra, India
Nikon Corporation, Japan
Shanghai Sanying Package, Greater China
Shuangrong, Greater China
Vincent & Bruyn Acquisition CV, Turkey
Zinwell Corporation, Greater China

Consumer Staples
Aero Pharma Silvasa, India
Alphatech, Philippines
AmorePacific Group, South Korea
Charoen Pokphand Foods PCL, Thailand
Free-Free Industrial Co, Greater China
LAWSON, Inc., Japan
Megabite Food Services, India
Meihua, Greater China
Milott, Thailand
Nihon Kajitsu Kogyo Co., LTD, Japan
Ningbo Ji Ming Electric Appliance, Greater China
Olam International, Singapore
Tata Global Beverages, India
VST Industries, India
Zhejiang Axilone Shunhua Aluminum & Plastic Co., Ltd, Greater China
Zhongshan Shi Dun, Greater China

Energy
Inpex Corporation, Japan

Financials
City Developments Limited, Singapore
Daiwa House Industry Co., Ltd., Japan
Dongbu Insurance, South Korea
Industrial Bank of Korea, South Korea
Kasikornbank, Thailand
Mahindra Lifespace Developers Limited, India
Samsung Fire & Marine Insurance, South Korea
Samsung Securities, South Korea
State Bank of India, India
T.SINAİ KALKINMA BANKASI A.Ş., Turkey
TÜRKİYE VAKIFLAR BANKASI T.A.O., Turkey
YES BANK Limited, India

Health Care
Dr. Reddy's Laboratories, India
FENDA, Greater China
Piramal Enterprises, India
SHENGDA, Greater China

Industrials
China State Construction International Holdings Ltd, Greater China
CIXI ZHONGFA LAMPS, Greater China
DONLIM, Greater China
HURRYTOP CHINA NETWORK LOGISTICS, Greater China
İHLAS HOLDİNG A.Ş., Turkey
NINGBO JIAYIN, Greater China
NINGBO KLITE, Greater China
Pacific Inter-link Sdn Bhd, Malaysia
Samsung C&T, South Korea
Samsung Heavy Industries Co Ltd, South Korea
Shimizu Corporation, Japan
Sumitomo Heavy Industries. Ltd., Japan
United Arab Shipping Company (S.A.G.), Kuwait
Wooshin Systems Co LTD, South Korea

Information Technology
Amglo Kemlite Laboratories, Greater China
Brother Industries, Ltd., Japan
Chicony Electronics Co. Ltd, Greater China
CNLIGHT, Greater China
Eaglerise Electric Electronic, Greater China
Elec & Eltek Co Ltd, Greater China
Everlight Electronics Co Ltd, Greater China
Founder PCB, Greater China
FSP Technology Inc., Greater China
Fujitsu Ltd., Japan

Asia
Carbon price disclosure by sector

Continued from previous page

In two years

GIKEN SAKATA, Singapore
Hong Fujin Precision Industry (G-subgroup) Co., Ltd, Greater China
Huafeng, Greater China
Huntkey, Greater China
Infosys Limited, India
ISU PETASYS CO LTD, South Korea
Konica Minolta, Inc., Japan
LATENTVIEW ANALYTICS CORPORATION, India
LEXTAR, Greater China
LG Innotek, South Korea
Lite-On Technology, Greater China
Luxshare, Greater China
Mitac International, Greater China
Quanta Computer, Greater China
RUBYCON, Japan
SABLE CORPORATION, Greater China
Samsung SDI, South Korea
SCREEN Holdings CO., Ltd., Japan
SHANGHAI YINDA TECHN, Greater China
SHENZHEN SUN AND LYNN, Greater China
Siliconware Precision Industries Co., Greater China
SIRTEC, Greater China
SK Hynix, South Korea
T&W, Greater China
Taiwan Semiconductor Manufacturing (TSMC)
TDK Corporation, Japan
Tech Mahindra, India
TECHSAP ASP SDN BHD, Malaysia
TPK Holding Co., Ltd., Greater China
TSMT, Greater China
Wipro, India
YanTat Printed Circuit (Shenzhen) Co., Ltd, Greater China
Zhejiang Super Lighting Electric AP, Greater China
ZHENGBEI LIGHTING SHANGHAI, Greater China

Materials

AKÇANSA ÇİMENTO SANAYİ VE TİCARET A.Ş., Turkey
Altajir Glass, United Arab Emirates
Black Cat, Greater China
DYNAPLAST, Indonesia
Hanwha Chemical Corp, South Korea
Hindustan Zinc, India
Hyundai Steel Co, South Korea
Ming Fai International Holdings Limited, Greater China
NINGBO XINFENG LIGHTING, Greater China
Nippon Paper Industries Co Ltd, Japan
Nitto Denko Corporation, Japan
POSCO, South Korea
PTT Global Chemical, Thailand
Rengo Co., Ltd., Japan
Rong Hua (Qing Yuan) Offset Printing, Greater China
Shin-Etsu Chemical Co., Ltd., Japan
Shree Cement, India
STARLITE PRINTERS (SZ) CO.,LTD, Greater China
Tata Steel, India
Teijin Ltd., Japan
Yuan Deng Metal Industrial (Kunshan) Co.Ltd, Greater China

Telecommunication Services

Airsys, Greater China
ANHUI TIANYUAN COMMU, Greater China
China Mobile, Greater China
CHINACOMM, Greater China
ECI Telecom, Israel
HWACOM SYSTEMS, Greater China
KT Corporation, South Korea
LG Uplus, South Korea
Singtel, Singapore
True Corporation, Thailand

Utilities

AKENERJİ ELEKTRİK ÜRETİM A.Ş., Turkey
CLP Holdings Limited, Greater China
GAIL, India
Korea East-West Power, South Korea
Tata Power Co, India

Europe
Carbon price disclosure by sector

Today

Companies currently using an internal carbon price

	Company	Country	Price (US$)
Consumer Discretionary	BMW AG	Germany	6.73
	Coop Genossenschaft	Switzerland	154.74
	Crest Nicholson PLC	United Kingdom	
	Daimler AG	Germany	
	Delphi Automotive Plc	United Kingdom	
	Domino's Pizza Group plc	United Kingdom	
	Inditex	Spain	30
	Jaguar Land Rover Ltd	United Kingdom	11.23; 24.48
	Kering	France	69.59
	Marks and Spencer Group plc	United Kingdom	
	Mediaset	Italy	
	Melia Hotels International SA	Spain	
	N Brown Group Plc	United Kingdom	25.09
	PUMA SE	Germany	
	Renault	France	
	Sky UK Limited	United Kingdom	24.48
	Stadco	United Kingdom	
	ULSTER CARPET MILLS	United Kingdom	
	Whitbread	United Kingdom	
	WPP Group	United Kingdom	44.68
Consumer Staples	Associated British Foods	United Kingdom	
	Carlsberg Breweries A/S	Denmark	
	Cranswick	United Kingdom	
	Dairy Crest Group	United Kingdom	
	Danone	France	
	Heineken NV	Netherlands	
	J Sainsbury Plc	United Kingdom	25.09
	Jerónimo Martins SGPS SA	Portugal	5.61
	Morrison Supermarkets	United Kingdom	
	MUNTONS PLC	United Kingdom	
	Nestlé	Switzerland	15.47
	Unilever plc	United Kingdom	
Energy	ADLER & ALLAN	United Kingdom	
	BG Group	United Kingdom	
	BP	United Kingdom	
	Compañía Española de Petróleos, S.A.U. CEPSA	Spain	
	Det Norske Oljeselskap ASA	Norway	
	Eni SpA	Italy	40
	Galp Energia SGPS SA	Portugal	
	MOL Nyrt.	Hungary	

Europe
Carbon price disclosure by sector

Continued from previous page

	Company	Country	Price (US$)
Energy, continued	OMV AG	Austria	
	Repsol	Spain	
	Royal Dutch Shell	Netherlands	40
	Statoil ASA	Norway	50
	Total	France	28.06
	Vopak	Netherlands	
Financials	Altarea Cogedim	France	
	Aon plc	United Kingdom	
	Aviva	United Kingdom	
	Barclays	United Kingdom	
	BEKB / BCBE	Switzerland	
	Big Yellow Group	United Kingdom	25.09
	CaixaBank	Spain	11.23
	Commerzbank AG	Germany	
	Credit Suisse	Switzerland	
	Danske Bank A/S	Denmark	
	Deutsche Bank AG	Germany	
	Ernst & Young LLP UK	United Kingdom	
	Gecina	France	35.92
	Henderson Group	United Kingdom	
	HSBC Holdings plc	United Kingdom	
	Lloyds Banking Group	United Kingdom	
	Piraeus Bank	Greece	7.86–28.06
	Societe Generale	France	11.22
	Swiss Re	Switzerland	
	Unite Students	United Kingdom	25.86
	Workspace Group	United Kingdom	
Health Care	Lundbeck A/S	Denmark	
	Novo Nordisk A/S	Denmark	
	Nuffield Health	United Kingdom	
	Spire Healthcare	United Kingdom	25.09
Industrials	Abengoa	Spain	10.1
	Air France–KLM	France	
	Arcadis	Netherlands	
	Balfour Beatty	United Kingdom	25.09
	Bic	France	11; 20
	Bouygues	France	
	British Airways	United Kingdom	
	CEVA	Netherlands	
	CTT–Correios de Portugal SA	Portugal	
	Danieli & C Officine Meccaniche S.p.A.	Italy	8.42

Today

	Company	Country	Price (US$)
Industrials, continued	FERROVIAL	Spain	
	Finmeccanica	Italy	
	Go-Ahead Group	United Kingdom	24.48
	Groupe Eurotunnel	France	
	Hamburger Hafen und Logistik AG	Germany	
	Hays	United Kingdom	
	HOCHTIEF AG	Germany	
	International Consolidated Airlines Group, S.A.	Spain	
	Kingspan Group PLC	Ireland	
	La Poste	France	
	Link SP	Poland	
	Linklaters LLP	United Kingdom	
	Morgan Advanced Materials	United Kingdom	
	Obrascon Huarte Lain (OHL)	Spain	5.1
	Saint-Gobain	France	
	SAS	Sweden	
	Wolseley plc	United Kingdom	
Information Technology	Atos SE	France	
	Renishaw	United Kingdom	
	Sungard Availability Services (Sungard AS)	United Kingdom	
Materials	ACERINOX	Spain	
	AkzoNobel	Netherlands	122.35
	Anglo American	United Kingdom	
	BASF SE	Germany	
	BHP Billiton	United Kingdom	
	Boliden Group	Sweden	
	Borregaard ASA	Norway	
	Buzzi Unicem	Italy	
	Eisenwerk Brühl GmbH	Germany	
	Ercros	Spain	
	Glencore plc	Switzerland	
	GPS PE PRODUCTS	United Kingdom	18.46
	HeidelbergCement AG	Germany	
	Hill & Smith Holdings	United Kingdom	
	Holcim Ltd	Switzerland	32
	Lonmin	United Kingdom	8.93
	Marshalls	United Kingdom	
	Mondi PLC	United Kingdom	33.68
	Norsk Hydro	Norway	
	Outokumpu Oyj	Finland	
	PACKETIS	France	35.96

Europe
Carbon price disclosure by sector

Continued from previous page

	Company	Country	Price (US$)
Materials, continued	PAGO	Switzerland	
	Petra Diamonds Ltd	United Kingdom	
	Rio Tinto	United Kingdom	
	Smurfit Kappa Group PLC	Ireland	
	Solvay S.A.	Belgium	84.24
	Stora Enso Oyj	Finland	
	Terichem	Slovakia	
	TETRA PAK	Sweden	
	ThyssenKrupp AG	Germany	
	Zignago Vetro SpA	Italy	
Telecom-munication Services	BT Group	United Kingdom	25.86
	Koninklijke KPN NV (Royal KPN)	Netherlands	
	Magyar Telekom Nyrt.	Hungary	
	Telecom Service Centres (Webhelp)	United Kingdom	25.23
Utilities	A2A	Italy	
	Centrica	United Kingdom	19.89
	E.ON SE	Germany	22.45–44.90
	EDF	France	
	EDP–Energias de Portugal S.A.	Portugal	5.61–67.35
	ENAGAS	Spain	7.86–22.45
	Endesa	Spain	
	ENEL SpA	Italy	12.35
	Fortum Oyj	Finland	
	Gas Natural SDG SA	Spain	33.68–67.35
	GDF Suez	France	
	Iberdrola SA	Spain	33.68
	National Grid	United Kingdom	85.69
	Pennon Group	United Kingdom	79.57–306.03
	REN – Redes Energéticas Nacionais	Portugal	
	RWE AG	Germany	
	Severn Trent	United Kingdom	
	Snam S.P.A	Italy	8.98–37.06
	SSE	United Kingdom	
	Suez Environnement	France	24.48
	Terna	Italy	
	United Utilities	United Kingdom	
	VEOLIA	France	
	VERBUND AG	Austria	

In two years

Companies that anticipate using an internal carbon price in the next two years

Consumer Discretionary
ADLER PLASTIC SPA, Italy
Axel Springer SE, Germany
BRAND ADDITION, United Kingdom
Dentsu Aegis Network, United Kingdom
DPE AUTOMOTIVE LTD, United Kingdom
IEE, Luxembourg
Ipsos, France
NAGARES. S.A., Spain
NH Hotel Group, Spain
Norton Rose, United Kingdom
Pirelli, Italy
Redrow Homes Ltd, United Kingdom
Rosti McKechnie Ltd, United Kingdom
Sodexo, France
SuperGroup, United Kingdom
TUI Group, United Kingdom

Consumer Staples
A.G. Barr Plc, United Kingdom
Beiersdorf AG, Germany
Carrefour, France
Coca-Cola HBC AG, Switzerland
Delhaize Group, Belgium
GMY LIGHTING, Poland
LF Beauty, United Kingdom
L'Oréal, France
MI (Michaelleides), Greece
Tereos, France

Energy
CRANE, United Kingdom
DOF ASA, Norway
Gazprom OAO, Russia
Premier Oil, United Kingdom
Tecnicas Reunidas, Spain
Tullow Oil, United Kingdom
Wood Group, United Kingdom

Financials
Allianz SE, Germany
Allied Irish Banks plc, Ireland
Banca Monte dei Paschi di Siena Group, Italy
Bankinter, Spain
BNP Paribas, France
Castellum, Sweden
Catlin Group Ltd, United Kingdom
CLS Holdings plc, United Kingdom
CNP Assurances, France
Credit Agricole, France
De Vere Venues Group Ltd, United Kingdom
DNB ASA, Norway
ICADE, France
Jupiter Fund Management, United Kingdom
KLP, Norway
Nexity, France
Nordea Bank, Sweden
Prudential PLC, United Kingdom
Quintain Estates & Development PLC, United Kingdom
UniCredit, Italy

Health Care
Coloplast A/S, Denmark
Novartis, Switzerland
SANOFI, France
Synergy Health, United Kingdom

Industrials
A.P. Moller - Maersk, Denmark
ADP (Aeroports de Paris), France
Airbus Group, Netherlands
Atkins, United Kingdom
AVK, United Kingdom
BBA Aviation, United Kingdom
Budimex S.A, Poland
Cape plc, United Kingdom
CNH Industrial NV, United Kingdom
COPISA PROYECTOS Y MANTENTOS INDUST, Spain
Costain Group, United Kingdom
DANFOSS, Denmark
Deutsche Post AG, Germany
ED&F Man, United Kingdom
ERITH GROUP, United Kingdom
Finnair, Finland
GLOBAL MARINE SYSTEMS LTD, United Kingdom
Grupo Logista, Spain
Hyder Consulting (UK) Ltd, United Kingdom
Ingersoll-Rand Co. Ltd., Ireland
Inwido Ab, Sweden
Kuehne + Nagel International AG, Switzerland
LEGRAND, France
Mcpherson Ltd, United Kingdom
National Express Group Plc, United Kingdom
Nordex SE, Germany
Österreichische Post AG, Austria
PROJECT PEOPLE, United Kingdom
ROCKWOOL International A/S, Denmark
Rolls-Royce, United Kingdom
Royal Imtech N.V., Netherlands

Europe
Carbon price disclosure by sector

Continued from previous page

Royal Philips, Netherlands
SCCI Alphatrack Ltd, United Kingdom
Schneider Electric, France
Severfield-Rowen, United Kingdom
Stephenson Harwood, United Kingdom
Travis Perkins, United Kingdom
Unipart, United Kingdom
Vallourec, France
Valmet, Finland
Volex Group, United Kingdom
WAGO, Germany
WHISTL UK LTD, United Kingdom

Information Technology
ams AG, Austria
Pace Plc, United Kingdom
SAP AG, Germany
Sopra Steria Group, France

Materials
Air Liquide, France
ARKEMA, France
Chimex, France
CRH Plc, Ireland
Croda International, United Kingdom
Essentra, United Kingdom
Givaudan SA, Switzerland
INDUSTRIA GRAFICA EUROSTAMPA S P A, Italy
Italcementi, Italy
JVM Castings, United Kingdom
Koninklijke DSM, Netherlands
Lafarge S.A., France
Metsä Board, Finland
Model Holding AG, Czech Republic
Novozymes A/S, Denmark
PCC Exol, Poland
Pochet, France
Sico, United Kingdom
Talvivaara Mining Company, Finland

Telecommunication Services
Deutsche Telekom AG, Germany
Millicom International Cellular SA, Sweden
QubeGB Ltd., United Kingdom
Swisscom, Switzerland
TDC A/S, Denmark
Vodafone Group, United Kingdom

Utilities
ACCIONA S.A., Spain

North America
Carbon price disclosure by sector

Today

Companies currently using an internal carbon price

	Company	Country	Price (US$)
Consumer Discretionary	ARGENT ASSOCIATES INC	USA	
	Baccus Global LLC	USA	
	Canadian Tire Corporation, Limited	Canada	6.36–30
	Fruit of the Loom	USA	
	General Motors Company	USA	5
	Walt Disney Company	USA	10–20
Consumer Staples	Archer Daniels Midland	USA	
	Campbell Soup Company	USA	
	Chicken of the Sea Intl	USA	10.25
	Colgate Palmolive Company	USA	
	Dean Foods Company	USA	
	Hormel Foods	USA	
	Pacific Coast Producers	USA	
	WhiteWave Foods	USA	
Energy	Apache Corporation	USA	
	ARC Resources Ltd.	Canada	3.77–22.60
	Canadian Oil Sands Limited	Canada	11.3
	Cenovus Energy Inc.	Canada	11.30–48.96
	Chevron Corporation	USA	
	ConocoPhillips	USA	6.0–51.0
	Enbridge Inc.	Canada	150.66
	Encana Corporation	Canada	15.07–94.16
	Exxon Mobil Corporation	USA	80
	Hess Corporation	USA	
	Husky Energy Inc.	Canada	
	Imperial Oil	Canada	80
	Keyera Corp.	Canada	
	Occidental Petroleum Corporation	USA	
	Pengrowth Energy Corporation	Canada	
	Suncor Energy Inc.	Canada	11.30–41.43
	TransCanada Corporation	Canada	
	Vermilion Energy Inc.	Canada	11.30–24.69
Financials	Bank of Montreal	Canada	
	BNY Mellon	USA	23.87
	Goldman Sachs Group Inc.	USA	
	TD Bank Group	Canada	7.53
	Wells Fargo & Company	USA	
Health Care	Allergan, Inc.	USA	
Industrials	Covanta Energy Corporation	USA	
	Cummins Inc.	USA	
	Delta Air Lines	USA	

North America
Carbon price disclosure by sector

Continued from previous page

Today

	Company	Country	Price (US$)
Industrials, continued	General Electric Company	USA	
	Owens Corning	USA	10.0–60.0
	Parker-Hannifin Corporation	USA	
	Stanley Black & Decker, Inc.	USA	18.0–150.0
	Tennant Company	USA	
Information Technology	Adobe Systems, Inc.	USA	
	ASOCIAR LLC	USA	
	Google Inc.	USA	14
	Microsoft Corporation	USA	4.4
	PMC-Sierra, Inc.	USA	
Materials	Agrium Inc.	Canada	11.3
	Barrick Gold Corporation	Canada	24.15
	Caraustar Industries, Inc.	USA	
	Catalyst Paper Corporation	Canada	22.6
	E.I. du Pont de Nemours and Company	USA	
	Eastman Chemical Company	USA	
	Hammond	USA	
	HudBay Minerals Inc.	Canada	15.07-37.66
	PaperWorks Industries Inc	USA	
	Resolute Forest Products Inc.	Canada	
	Teck Resources Limited	Canada	11.30–30.13
	The Dow Chemical Company	USA	
Telecom. Services	Genband	USA	
	World Wide Technology Holding Company	USA	
Utilities	Ameren Corporation	USA	23–53
	American Electric Power Company, Inc.	USA	
	Capital Power Corporation	Canada	
	CMS Energy Corporation	USA	
	Consolidated Edison, Inc.	USA	
	DTE Energy Company	USA	
	Duke Energy Corporation	USA	
	Entergy Corporation	USA	
	Eversource Energy	USA	
	Exelon Corporation	USA	
	Idacorp Inc	USA	
	Los Angeles Department of Water and Power	USA	12.45–35.90
	NiSource Inc.	USA	20
	NRG Energy Inc	USA	
	OGE Energy Corp.	USA	
	Pinnacle West Capital Corporation	USA	
	Sempra Energy	USA	13.06
	TransAlta Corporation	Canada	11.30–22.60
	Xcel Energy Inc.	USA	9.0–34.0

In two years

Companies that anticipate using an internal carbon price in the next two years

Consumer Discretionary
ACTIVE KNITWEAR RESOURCES INC, USA
All Access Apparel, Inc., USA
CINSA SA DE CV, Mexico
GRUPO PROEZA SA DE CV, Mexico
Impro Industries USA Inc., USA
Jjs Mae Inc Dba Rainbeau, USA
MARTINREA INTERNATIONAL INC., Canada
Otter Products, LLC, USA
Richloom Home Fashions, USA
SHAPE CORP, USA
Waukesha Metal Products, USA
Westcon, USA

Consumer Staples
American Poly, Mexico
Berner Foods Inc, USA
Berwick Offray Hong Kong, USA
Coca-Cola Enterprises, Inc., USA
Crystal Claire Cosmetics Inc., Canada
General Mills Inc., USA
Grupo Bimbo, S.A.B. de C.V., Mexico
Mars, USA
Massimo Zanetti Beverage USA, USA
NICHOLS PISTACHIO, USA
Norpack Services Inc., USA
OXYGEN, USA
Pacific International Marketing, USA
Philip Morris International, USA
PROTEINAS Y OLEICOS SA CV, Mexico
Royal Cup, USA
SHANGHAI YINGSHUO PLASTIC CO;LTD, USA
SUKARNE SA CV, Mexico
Wal-Mart Stores, Inc., USA
Walter P. Rawl & Sons, Inc., USA

Energy
Baker Hughes Incorporated, USA
CONSOL Energy Inc., USA
Enerplus Corporation, Canada

Financials
American Express, USA
Bank of Nova Scotia (Scotiabank), Canada
Bentall Kennedy, Canada
GRANT THORNTON, USA
Grupo Financiero Banorte SAB de CV, Mexico
Host Hotels & Resorts, Inc., USA
Huntington Bancshares Incorporated, USA
Invesco Ltd, USA
Iron Mountain Inc., USA
PHH Arval, USA

Health Care
Baxter International Inc., USA
Bristol-Myers Squibb, USA
Catalent Pharma Solutions, USA
Valeant Pharmaceuticals International, Inc., USA

Industrials
3M Company, USA
Alabama Motor Express, USA
Gardner Denver, USA
IWCO DIRECT, USA
Jacobs Engineering Group Inc., USA
KNOLL INC, USA
National Salvage and Service, USA
Republic Services, Inc., USA
Xylem Inc, USA

Information Technology
Arista Networks, USA
Autodesk, Inc., USA
Automatic Data Processing, Inc., USA
BlackBerry Limited, Canada
DAHER ACQUISITIONS INC, USA
EMC Corporation, USA
Energy Federation Inc., USA
Jabil Circuit, Inc., USA
Juniper Networks, Inc., USA
NDK, USA
NetApp Inc., USA
OPOWER, USA
QUALCOMM Inc., USA
QUALITY TECHNOLOGY SERVICES, USA
TELAMON CORPORATION, USA
VXI GLOBAL SOLUTIONS INC, USA
Yahoo! Inc., USA

North America
Carbon price disclosure by sector

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Materials
Accurate Box, USA
Alcoa Inc., USA
ASG, USA
Avery Dennison Corporation, USA
Axalta Coating Systems, USA
BARDAHL DE MEXICO SA CV, Mexico
Bemis Company, USA
DETERGEN JABONES SASIL SAPI CV, Mexico
Fresnillo plc, Mexico
Kruger Products Inc, Canada
Monsanto Company, USA
Novelis Inc., USA
PAPER MAGIC GROUP HONG KONG LTD, USA
Roeslein, USA
Sigma-Aldrich Corporation, USA
Trinseo LLC, USA

Telecommunication Services
CenturyLink, USA
Rogers Communications Inc., Canada
Telus Corporation, Canada

Utilities
The AES Corporation, USA

Oceania
Carbon price disclosure by sector

Today

Companies currently using an internal carbon price

	Company	Country	Price (US$)
Consumer Staples	Wesfarmers	Australia	
	Woolworths Limited	Australia	
Energy	AWE	Australia	
	Origin Energy	Australia	
	Santos	Australia	9.81
	Woodside Petroleum	Australia	
Financials	AMP	Australia	
	Australia and New Zealand Banking Group	Australia	9.85 –14.77
	GPT Group	Australia	
	Insurance Australia Group	Australia	
	Investa Office Fund	Australia	
	National Australia Bank	Australia	
	Platinum Asset Management	Australia	
	Stockland	Australia	
	Westpac Banking Corporation	Australia	
Industrials	Qantas Airways	Australia	
Materials	Alumina	Australia	
	Fletcher Building	New Zealand	
	Incitec Pivot	Australia	
Utilities	AGL Energy	Australia	9.81

In two years

Companies that anticipate using an internal carbon price in the next two years

Financials
BWP Trust, Australia
Commonwealth Bank of Australia, Australia
Novion Property Group, Australia
QBE Insurance Group, Australia

Industrials
Australia Post, Australia
UGL, Australia

Materials
Albright & Wilson (AUSTRALIA) LTD, Australia
Atlas Iron, Australia
Sims Metal Management, Australia

Telecommunication Services
Spark New Zealand, New Zealand

Utilities
APA Group, Australia
Infigen Energy, Australia

South America
Carbon price disclosure by sector

Today

Companies currently using an internal carbon price

	Company	Country	Price (US$)
Consumer Staples	Natura Cosmeticos SA	Brazil	
Energy	Petróleo Brasileiro SA–Petrobras	Brazil	
Financials	Itaú Unibanco Holding S.A.	Brazil	3.19
	Itausa Investimentos Itau S.A.	Brazil	
Industrials	Cosan Logistica SA	Brazil	
	Ecofrotas	Brazil	
Information Technology	Service Bank Servs. Tecnologicos E	Brazil	
Materials	Braskem S/A	Brazil	37
	Duratex S/A	Brazil	
	Enaex	Chile	2.4; 2.9
	Vale	Brazil	50
Utilities	Centrais Eletricas Brasileiras S/A (ELETROBRAS)	Brazil	5
	Colbun SA	Chile	5
	Companhia Energetica Minas Gerais–CEMIG	Brazil	0.95

In two years

Companies that anticipate using an internal carbon price in the next two years

Consumer Discretionary
B2W Companhia Global do Varejo, Brazil
Lojas Americanas S/A, Brazil

Consumer Staples
BRF S.A, Brazil
JBS S/A, Brazil
Smart Pack, Colombia
Vina Concha y Toro S A, Chile

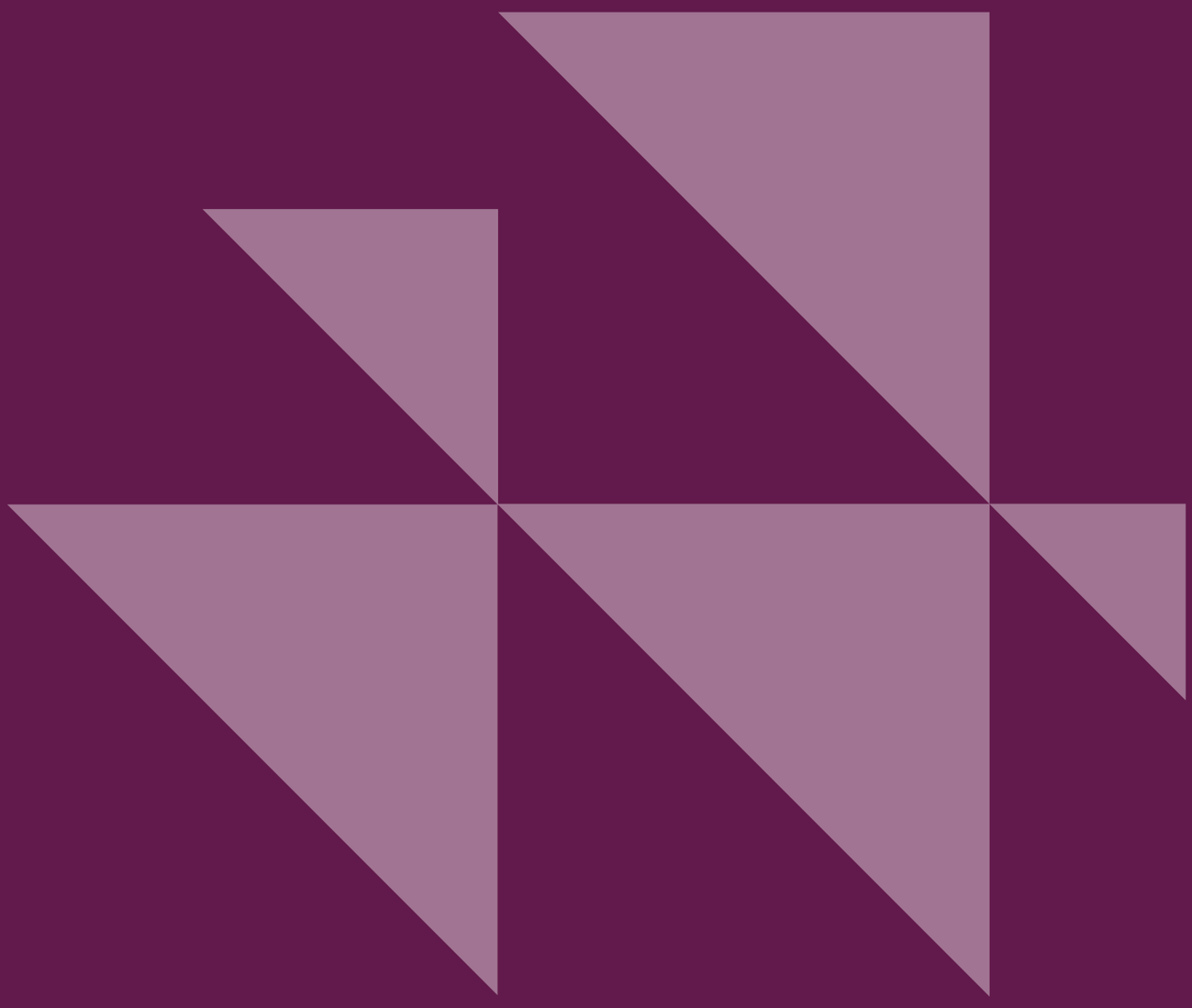
Energy
Ecopetrol Sa, Colombia

Financials
BanColombia SA, Colombia

Industrials
Companhia de Concessões Rodoviárias–CCR, Brazil
DSR Transportes Rodoviarios LTDA, Brazil
Grupo Libra, Brazil
New Space Proc.E Sistemas LTDA, Brazil
Trans Pantanal LTDA, Brazil
Transportes Cavalinho, Brazil

Materials
Klabin S/A, Brazil
Packaging Products del Peru, Peru

Utilities
AES Tiete SA, Brazil
Cia Paranaense de Energia–COPEL, Brazil
EDP–Energias do Brasil S.A., Brazil
Eletropaulo Metropolitana Eletricidade de São Paulo S/A, Brazil
Empresa de Energia de Bogota S.A. E.S.P., Colombia



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This report forms part of the work of the We Mean Business coalition, and is supported in part by the Merck Family Fund.

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