

# CASE STUDY: SHELL'S CO<sub>2</sub> PROJECT SCREENING VALUE

Angus Gillespie explains how firms can screen investment options for future carbon regulations

Shell has long recognised the challenge of addressing climate change and has used an internal value for CO<sub>2</sub> in investment decisions for about 15 years, in recognition of the need for government action to address the externality cost of CO<sub>2</sub> emissions. Over that time, our approach has evolved and developed to find the most impactful means of ensuring current and future costs of CO<sub>2</sub> are adequately included in project economics.

The approach in Shell applies a uniform project screening value (PSV) of \$40/tonne of CO<sub>2</sub>e to the total greenhouse gas emissions of all investments. That real term value applies to all projects of all sizes and types in all regions of the world. The simplicity of Shell's CO<sub>2</sub> PSV based model helps its application. The unambiguous rules on CO<sub>2</sub> valuation are known and respected by economists and managers across the company.

Various forms of CO<sub>2</sub> valuation have been used by Shell over the years. An internal cap-and-trade system was tried, as were CO<sub>2</sub> values differentiated by regions and time periods, as many companies use today. Shell's general experience was that complexity created challenges with internal compliance with the process, either through innocent confusion or "creative gaming" by some to minimise project costs. The simple and uniform use of a \$40/tonne CO<sub>2</sub> PSV is difficult to avoid.

Shell's CO<sub>2</sub> PSV is not a price forecast, but rather is a risk management tool that encourages CO<sub>2</sub> mitigation investments in preparation for when regulation would make those investments commercially compelling. From a CO<sub>2</sub> management perspective, the best points for influencing projects' mitigation choices are its development and refurbishment stages.

## IF MATERIAL EVIDENCE EMERGES FROM THE PARIS TALKS OF EXPANDING CO<sub>2</sub> REGULATION AMBITIONS, THAT WOULD PROMPT A REASSESSMENT OF THE SCREENING VALUE SHELL USES

Both need investment appraisals. The mandatory inclusion of a value on CO<sub>2</sub> in appraisals focuses management attention on limiting emissions – and so the corresponding relative cost of that item on the investment economics. That, in turn, improves the investment's robustness to future CO<sub>2</sub> regulation.

The benefits of having an internal CO<sub>2</sub> investment value exceed the internalisation of a significant future operating cost associated with CO<sub>2</sub> emissions. The CO<sub>2</sub> PSV helps "price-in" mitigation measures that cost less than \$40/tonne, so bringing forward when those options prove economic. Project managers' natural sensitivity to CO<sub>2</sub> costs raises their levels of inquisitiveness and search for innovative, economic (now or later) CO<sub>2</sub> management opportunities and options.

In turn, that opens new opportunities to educate asset teams on CO<sub>2</sub> management. Quantification of the regulatory CO<sub>2</sub> risk exposure allows summation and reporting by country, asset class, business, etc., all of which enhances understanding. Related to that, quantification creates the ability to identify the "tall poppies" or the few assets that account for the majority of CO<sub>2</sub> exposure. That encourages our focus on the CO<sub>2</sub> management efforts at the points of maximum leverage.

The appropriate level of Shell's CO<sub>2</sub> PSV is reviewed on an annual basis,

which needs a reassessment of expected trends in global CO<sub>2</sub> costs. For Shell, we have defined six regions that together account for over 90% of our future CO<sub>2</sub> exposure. Separate regional CO<sub>2</sub> cost projections to 2050 are developed. Those are then normalised to accommodate Shell's learned preference for a flat, all-encompassing CO<sub>2</sub> value.

While the outlook for global CO<sub>2</sub> costs has varied over the past five years, since Shell first made its CO<sub>2</sub> value public, our CO<sub>2</sub> PSV has remained constant at \$40/tonne. The constancy has helped reinforce understanding inside Shell. To some extent, accuracy and its associated complexity has been sacrificed for effective application and compliance. Still, if material evidence emerges from the Paris talks of intensifying and expanding CO<sub>2</sub> regulation ambitions, that would prompt a reassessment of Shell's CO<sub>2</sub> PSV.

Applying a value on CO<sub>2</sub> emissions is not Shell's only basis of CO<sub>2</sub> management. It is one of a suite of complementary systems and processes. In that context, and as a response to a regular line of questioning when presented externally, it is useful to explain what Shell's CO<sub>2</sub> PSV is not and what it does not cover.

The PSV is applied to Shell's direct and indirect (Scopes 1 and 2) emissions but not to those associated with our products' final use (Scope 3), which can be covered

by other CO<sub>2</sub> risk management processes. Although it is derived from our views on future CO<sub>2</sub> regulation, the PSV is not a Shell CO<sub>2</sub> price or cost forecast. Because of its application at the point of investment, the CO<sub>2</sub> PSV does not apply to the economics of operating assets, other than through its influence on investment for maintenance and repairs. The CO<sub>2</sub> management trends that are not addressed by the CO<sub>2</sub> PSV are served by alternative processes.

Shell has found the CO<sub>2</sub> PSV to be a useful CO<sub>2</sub> management tool but as one of a family of systems, each suited to its own specific points of influence. Our approach puts special emphasis on the projects with the largest CO<sub>2</sub> emissions profile – our so-called “carbon critical projects”. As well as using the \$40/tonne PSV, carbon critical projects test their sensitivity to higher and lower CO<sub>2</sub> cost assumptions. If these projects’ economics prove especially sensitive to CO<sub>2</sub> cost assumptions, there are occasions when the standard CO<sub>2</sub> PSV is replaced by a bespoke (and centrally approved) projection of CO<sub>2</sub> costs for both the asset and its products. The various benefits of quantified CO<sub>2</sub> risk are then maintained while the relative accuracy of this approach exceeds that of the uniform \$40/tonne PSV. Because of the effort needed for such derogation from

using the CO<sub>2</sub> PSV, this approach is used for only a handful of carbon critical projects in any year.

There should come a point in future when Shell’s use of a CO<sub>2</sub> PSV becomes redundant. That is likely to be when CO<sub>2</sub> regulation matures to the point that asset and project managers use actual projections of CO<sub>2</sub> costs for their own asset and product locations in their investment appraisals.

It is worth answering another question regularly posed when Shell’s use of a CO<sub>2</sub> PSV is discussed externally: what advice would Shell offer to other companies planning to introduce their own CO<sub>2</sub> valuation methodology?

In terms of impact, our experience shows that process simplicity and, if possible, uniformity of valuing CO<sub>2</sub> provides real benefits. Paradoxically, companies’ early attempts at valuing CO<sub>2</sub> are often ambitious with differentiated time bands, regions and project types. Such (understandable) quests for accuracy can create downsides in compliance.

The other piece of advice is to complement internalisation of a CO<sub>2</sub> value with other CO<sub>2</sub> management systems.

## THERE SHOULD COME A POINT IN FUTURE WHEN SHELL’S USE OF A CO<sub>2</sub> PSV BECOMES REDUNDANT

Valuation of CO<sub>2</sub> on its own will not drive sufficient actions to encourage robustness against future risks and uncertainties associated with CO<sub>2</sub> regulation. Still, if an organisation has to make a definitive first move, putting an explicit investment value on CO<sub>2</sub> is a very good place to begin, just as Shell did in 2000.

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