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Selecting an Internal Carbon Price for Academic Institutions

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Summary

Many businesses have adopted internal carbon prices (ICPs) to help drive smarter business decisions, innovation, and emissions reductions. The objective of this white paper is to provide a framework that institutions can use as they begin to think about selecting a price in the context of their own goals for an ICP. This white paper reviews some of the most common benchmarks for selecting an internal carbon price:

1. the social cost of carbon: an estimate of the economic damages to current and future generations from carbon dioxide pollution;
2. implicit prices: the cost to achieve specific policy targets;
3. regulatory risk: the potential future costs from climate policy;
4. current prices in existing carbon markets; and
5. the prices used by peer institutions.

Depending on the framework, potential prices per metric ton carbon dioxide equivalent(MTCDE) can range from under $10 to over $100. Ultimately, academic institutions will have to carefully consider the goals of their sustainability policies and institutional constraints to select a price. These overlapping motivations and constraints make the process of selecting the price almost as important as the actual price selected. A robust process can help ensure buy-in when the adopted price begins to suggest institutional changes.

Introduction

Carbon prices are important tools for reducing emissions of greenhouse gases (Goulder & Hafstead, 2018). They are flexible in that they can be used to achieve a wide range of policy objectives. Academic institutions, for example, may have a wide range of reasons for adopting a carbon price including accounting for the social cost of carbon (Greenstone, Kopits, & Wolverton, 2013), mitigating regulatory risk (Ahluwalia, 2017), meeting internal emissions targets (Ecofys, The Generation Foundation, & CDP, 2017), funding projects, educating campus members, or aligning with peers. Each of these reasons may suggest slightly different carbon prices, although the ranges of possible prices will often overlap. In addition, budget adjustments associated with implementing carbon prices may point in the direction of a gradually increasing carbon price—especially for carbon fund models. An institution considering a proxy carbon price may feel more comfortable starting at a higher value as they only add costs when they tip decisions and they are usually only one criteria in the option selection (Barron, Sayre, Weisbord, & Parker, 2018). Ultimately, there is no single correct number for a carbon price under all circumstances, and it is clear that nearly any value is an improvement over zero. Guidance documents rightly emphasize avoiding the "right price trap" and starting to experiment with any non-zero price with the potential to refine over time

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(Ahluwalia, 2017). At the same time, for a given set of institutional goals, it is also clear that some internal carbon prices may not be fully consistent with those goals. Institutions can use existing technical work and precedents to help guide them to a value.[2]

The section below details five common benchmarks for selecting an ICP, with a focus on the perspective of academic institutions. We then provide an illustration of how those benchmarks align with four price ranges. Finally, we provide some brief context on the process for selecting a price.

Benchmarks for Selecting an Internal Carbon Price

1) The Social Cost of Carbon

Carbon dioxide emissions cause ecological and economic damages to current and future generations, but these damages are not reflected in the price of carbon emitting goods (e.g. fossil fuels) (Nordhaus, 2015). In theory, an optimal carbon tax would be set to reflect the present value of social damages from carbon emissions and result in an efficient market (Keohane & Olmstead, 2013). Economists refer to the net damages[3] to society from carbon dioxide emissions as the social cost of carbon (SCC) and estimate them using models that integrate estimates of climate change with models of how those damages impact the economy (National Academy of Sciences, Engineering, and Medicine, 2017).[4] The social cost of carbon is an appealing basis for an ICP for academic institutions as it attempts to represent the full costs to society of carbon dioxide emissions in a rigorous way that can capture the socially-focused goals of an ICP effort; an ICP based on the SCC means that a financial analysis reflects not just the private costs to the institution to purchase fossil fuels but also the damage caused to others when those fuels are burned.

While simple in principle, accurately estimating the SCC is incredibly challenging (for a non-technical discussion see Greenspan Bell & Callen (2011). The models attempt to capture consequences such as rising sea levels, flooding, storm damage, lost agricultural production, and heat-related health issues, but they often do so incompletely (National Academy of Sciences, Engineering, and Medicine, 2017). They also omit critical variables like widespread biodiversity loss and ocean acidification (Peter Howard, 2014). Nor do they capture catastrophic outcomes well (Kaufman, 2012). For example, a recent study using improved data and approaches found that economic damages from a single category of impact (mortality from temperature changes) was likely to be nearly as large as earlier estimates from all impacts combined (Carleton et al., 2018).

The most commonly cited estimates of the social cost of carbon are those developed by the U.S. government (USG). An interagency working group used the three most common models and standardized assumptions about economic growth and climate sensitivity (Greenstone et al., 2013). The estimates were developed in 2010 and were subsequently revised in 2013, with minor technical updates in 2016[5] (IWG, 2016). The values are listed in Table 1.

2. See Gajjar & Vivek (2018) for a brief discussion of these issues in a corporate and Indian context.
3. Net damages include benefits such as potential increases in yield from crops in regions that are currently limited by cold temperatures. These damages are usually outweighed by costs.
4. For estimates of the social cost of methane, see Marten & Newbold (2012).
5. In 2017 the USG moved to adopt estimates of the social cost of carbon that are focused only on a partial estimate of the domestic (rather than global) damages of climate change and use higher discount rates (Newell, 2017; Revesz et al., 2017). Domestic-only estimates of the SCC are exceedingly challenging to do accurately given the interconnected global economy (National Academy of Sciences, Engineering, and Medicine, 2017), are not consistent with approaches that would lead to socially optimum outcomes (Kotchen, 2016), and are not consistent with most (but not all) academic expert opinion of social cost of carbon estimates (P. Howard & Sylvan, 2015; Revesz et al., 2017) and are therefore not discussed further here.

An important policy factor in the estimation of the social cost of carbon is the discount rate, which reflects, among other factors, the time value of money and the relative value placed on economic costs to future generations. Appropriate discount rates are actively debated, and the choice matters: $1 million in climate damages in 300 years is discounted to ~$50,000 today at a rate of 1% but to ~50 cents at 5% (Burtraw & Sterner, 2015). The USG used rates of 5%, 3%, and 2.5%, but other authors advocate for the use of much lower discount rates, especially for impacts on future generations (Johnson & Hope, 2012). The Interagency Working Group that developed these estimates emphasized the importance of considering the full range of values, while at the same time selecting 3% as the "central value" for when a single value is needed (IWG, 2016). A 2015 survey of over 300 economists who publish peer-reviewed research on climate change found that three quarters of economists believed that the SCC was equal to or higher than $37/ton ($2007), with over half believing it was higher (P. Howard & Sylvan, 2015). The same survey found that economists' median estimate of the appropriate discount rate was 2% or lower.[6] For further non-technical discussion of discount rates, see **here**.

	Discount Rate			
Year	5% Average	3% Average	2.5% Average	High Impact (95th pct at 3%)
2015	$13	$42	$65	$122
2020	$14	$49	$72	$143
2025	$16	$54	$79	$161
2030	$19	$58	$85	$177
2035	$21	$64	$91	$196
2040	$24	$70	$98	$213
2045	$27	$75	$104	$230
2050	$30	$80	$111	$247

Table 1 2016 USG Estimates of the Global Social Cost of Carbon ($2017/MT CO2e) By Discount Rate Estimates of the average social cost of carbon at 3 different discount rates plus an estimate of the high-end tail of the estimates of the SCC at a 3% discount rate. The USG SCC estimates are reported in $2007; they have been converted here to $2017.[7]

The USG SCC estimates, while the most frequently cited, are not the only estimates available and are likely to be refined over time. Other recent estimates in peer-reviewed literature that attempt to account for social equity or willingness-to-pay to avoid risks associated with bad or catastrophic climate outcome often produce estimates of over $100/ton or even $200/ton (Adler et al., 2017; Hope, 2011; Moore & Diaz, 2015). One recent study concluded "SCC values under $125 are hard to defend if a low discount rate is used and low-probability and high impact climate outcomes as well as risk aversion are taken seriously" (van den Bergh & Botzen, 2014). The National Academy of Sciences recently released a significant report recommending a range of improvements to the current way in which the social cost of carbon is estimated

6. Institutions using the SCC to select an ICP may find that they select an SCC calculated with a social discount rate that differs from the private discount rate used for facilities planning. While such a conflict is not ideal, an academically rigorous solution (such as discount rates trajectories that begin at the private rate and decline over time) is not yet well developed and "raises challenges that have yet to be resolved"(National Academy of Sciences, Engineering, and Medicine, 2017).
7. Carbon prices from sources like the peer-reviewed literature can and should be adjusted to current year dollars using a **GDP deflator** from the US Bureau of Economic Analysis (U.S. Bureau of Economic Analysis, 2018). The calculation is straightforward: $62 per metric ton of CO2e (hereafter ton) in $2007, multiplied by the ratio between the 2017 and 2007 GDP deflator (113.421/97.337), is $72 in $2017.

(National Academy of Sciences, Engineering, and Medicine, 2017). At least two large research efforts are currently underway to implement improvements to the way the SCC is estimated (Kim, 2018; RFF, 2017).

Ultimately, it is important to recognize that the SCC can be a useful data point in setting an internal carbon price, but it does not offer a single authoritative estimate of the damages of climate change. Value-laden decisions about the discount rate and risk aversion have significant impacts on the estimate. It was also developed for a slightly different application (benefit-cost analysis) which means that it estimates the social benefits of reducing a ton of emissions, not necessarily what makes a good investment to reduce a ton of emissions (a good policy might deliver $4 in benefits for every $1 spent) (Kaufman, 2018).

- Benchmark price range: $13 to over $220 per ton, depending upon assumptions

2) Implicit prices/Target consistent prices

An alternate approach to internal carbon pricing is to estimate an "implicit" price from some other metric such as an internal, state, national, or global emissions target. This approach starts from the assumption that the target reflects policy or institutional goals and then uses either engineering or economic modeling approaches to estimate the carbon price required to align the economics with that target. For example, a decision to commit to renewable electricity might carry a higher cost, which can be reflected as $X/ton of carbon emissions avoided. This approach has the benefit of being completely consistent with the climate goal (Kaufman, 2018), but can also be challenging to do in practice.

At the institutional level, a university could use an engineering estimate of the cost/ton (or trajectory of costs/ton) to completely transition to carbon neutral campus infrastructure by a desired carbon neutrality date. In essence, if the institution has committed to a particular route to carbon neutrality (e.g. a centralized geothermal heat plant powered by renewable electricity), it has already decided that reducing carbon emissions is "worth" at least that much per ton. A carbon price set at this level (or equivalent escalating trajectory, see below) would encourage individuals to take actions on campus or in purchasing that achieve emissions reductions that are cheaper than this cost. In practice, however, few institutions may initially have the data available to make such an estimate.

If an institutional goal is to model sustainable behavior, then adopting a carbon price consistent with ambitious climate targets at the state, national, or international scale can make sense. These are sometimes known as target-consistent prices (Boyce & Bradley, 2018). The primary barrier here is analytical—current economic models are not particularly good at estimating the costs of transitioning to a decarbonized society, especially in the longer term (2040 or 2050) (Barron, 2018; Barron, Fawcett, Hafstead, McFarland, & Morris, 2018). Nevertheless, a recent report suggests that prices of US$40–$80/MTCDE by 2020 and US$50–$100/MTCDE by 2030 are required to put society on a trajectory to stay below 2°C (High-Level Commission on Carbon Prices, 2017).[8] While these estimates need to be refined they can act as a benchmark for institutions focused on supporting broader climate goals. In fact, the three schools with well-established ICP programs all have values close to or within this range. Based on conversations with business leaders, the non-profit UN Global Compact has similarly called for prices of $100/MTCDE (Klingo, 2016), although non-escalating price trajectories have challenges (see below).

A novel, but related, approach to setting an internal carbon price is to use a standard economic technique known as stated preference to estimate the campus communitie's willingness to pay to avoid carbon emissions. The University of Oregon recently conducted such a survey (Mital & Walch, 2018), currently

8. Note that integrated assessment models used to estimate the SCC, which often include very little technological detail, project much higher prices for similar targets (Boyce, 2018).

unpublished. This approach has the advantage of producing a quantitative estimate of the carbon price from individuals who are surveyed, although the methodology can be challenging to implement and has its own controversy and uncertainties (Johnston et al., 2017). It may also omit or undervalue the economic interests of the poor and vulnerable in other countries who will bear the cost of climate impacts.

- Benchmark price range: One recent estimate suggests that prices around US$40– $80/MTCDE by 2020 and from US$50–$100/MTCDE by 2030 are required to put society on a trajectory to stay below 2°C (High-Level Commission on Carbon Prices, 2017)

3) Regulatory Risk

Over 1,300 companies are currently using or planning to implement internal carbon prices, and a major reason is to manage risk associated with future climate policy (CDP, 2017). For example, Shell, Exxon Mobil, and Hess all use an internal carbon price in their business strategy to anticipate a carbon constrained world which will likely include carbon taxes, cap-and-trade programs, or other policies that increase the market cost of energy and greenhouse gas intensive goods. While U.S. federal climate policy is not likely in the next few years, several U.S. states are considering adopting new carbon pricing policies in the near-term (Davenport, 2018).

These policies will increase costs for academic institutions and create financial risk because those costs are impacted by decisions made *in advance* of the price taking effect. For example, a new campus building with a natural gas heating system may appear to make economic sense today compared to a geothermal heating system, but might not if the state legislature adopts a $40/ton carbon price in the next 5 years. An energy retrofit may not have offered an attractive payback period if analyzed without a carbon price but could payback much more quickly if the price takes effect during the project lifetime. **Given the long lifetimes of campus infrastructure, it is possible that any infrastructure built today will spend the majority of its lifetime under a carbon price.** Even more programmatic aspects can be impacted; if travel costs rise, a university may find itself wishing it had developed more teleconferencing or carpooling infrastructure and culture in the years before the policy took effect. If a primary goal of an ICP is to minimize financial implications of this regulatory risk, then adopting a carbon price at or slightly above expected legislative carbon prices is appropriate (Ahluwalia, 2017). The challenge for this approach is knowing what price will actually emerge in from the legislative process and any future updates.

As an example, in 2018 there were a number of carbon tax proposals in the Massachusetts legislature. They had starting prices that ranged from $10-20/ton and rose over time. Two proposals capped the increase at $40/ton with the intention of revisiting the capped price, while the third built in continued escalation of $10/yr (Barrett, 2017; Benson, 2017; Goldstein-Rose, 2017). The District of Columbia recently considered, but rejected, a proposal of $10 per ton of carbon pollution that increases to $100 per ton by the year 2038 (Hand, 2018). Washington State will consider a **ballot measure** in in November 2018 to adopt a carbon fee starting at $15 and rising $2/yr (Meyer, 2018).

Anticipating the level of a U.S. federal carbon price is even more challenging given the likely delays and political reshuffling before any such policy is adopted. A recent Republican-led proposal (not yet introduced by anyone in the U.S. Congress) suggested a "sensible" starting point of $40/ton but did not clarify the rate of growth (Baker et al., 2017). One recent Democratic tax bill begins at $30/ton and rises at 4%/ year (Delaney, 2017). A recent Republican-introduced bill starts at $24/ton, rising at 2% (or a higher rate if targets are not met)(Curbelo, 2018). A prominent non-profit group, the Citizen's Climate Lobby, is advocating for a price of $15, increasing at $10/year (CCL, 2018). Canada's government is requiring provinces to adopt carbon pricing systems, with those adopting carbon taxes having prices of Can$20 in 2019 rising to Can$50 in 2022 (Environment Canada, 2017). Businesses, many of which likely have regulatory risk as a top priority, have adopted a wide range of prices; these reflect differing assessments of the likelihood and stringency of future policies.

- **Benchmark price range adopted by businesses:** $5 to $150 per metric ton or higher for North American firms (General Motors to Stanley Black & Decker Inc), using a range of approaches from carbon funds to proxy carbon prices (CDP, 2017).
- **Benchmark price ranges in proposed legislation:** $10-$40/ton starting price rising over time

4) Current Markets

Some organizations set internal carbon prices based on existing carbon markets. For example, the market for carbon offsets makes it possible to invest in carbon-reduction strategies in other parts of the country or around the world and to achieve reductions for emissions that can't be completely eliminated on campus (e.g. air travel). Offsets are created by reducing emissions (e.g. planting trees, capturing methane), and then sold in voluntary (or regulatory) markets (Hamrick & Gallant, 2017). The offset price to reduce a metric ton of carbon is wide-ranging and varies based on quality and type of offset. Offset programs are technically complex to implement in practice which has led to concerns about whether they actually reduce emissions (Cullenward & Wara, 2014; Schneider & Kollmuss, 2015; U. S. Government Accountability Office, 2008; Wara & Victor, 2008) and other negative impacts associated with the policy (e.g. livelihoods and legal rights of impacted communities) (Takacs, 2014). A detailed discussion of the technical details and issues with offsets is beyond the scope of this work but if an institution has already committed to an offsetting strategy with a known or estimated price, then an ICP can reflect the cost of seeking those emissions reductions elsewhere.

- **Price range:** less than $1 to more than $50 per metric ton

Another source of market prices is existing carbon pricing systems. Currently, New England states participate in the Regional Greenhouse Gas Initiative (RGGI), which is a market designed to cap emissions from the electricity sector (Regional Greenhouse Gas Initiative, 2018). The current market price is very near the price floor, which results in a weak price signal (~$4/ton). The European Union established the first market system to cap emissions and trade for permits and the price has fluctuated between about $5 and $35/ton but is currently at about $19/ton (Koch, Fuss, Grosjean, & Edenhofer, 2014). California's cap-and-trade system under the AB32 climate law currently has market prices around $15/ton. In addition to cap-and-trade systems, some countries have implemented carbon taxes nationwide with prices ranging from $5/ton (Colombia, Chile, and Latvia) to $140/ton (Sweden) (World Bank Group & Ecofys, 2018). It should be noted that none of the programs listed above are, by themselves, expected to deliver the deep reductions called for under the Paris Agreement. Even California's cap-and-trade system is meant to work with a wide range of other policy tools to achieve their policy objectives. **As a result, market prices *by themselves and at current values* are not likely to be consistent with meeting robust emissions reduction targets in the medium- to long-term**.

Current carbon market prices are already reflected in the cost of energy in the regions where these programs are active so adding an internal carbon price at the same level would be "double-taxing" the emissions from that sector. However, these market prices can serve as a proxy for existing policy in other regions or other sectors (e.g. adoption of the market price in a neighboring state/country or for a sector not currently covered by the trading system).

- **Benchmark price range:** $2 to $35 per metric ton for trading systems, up to $140 per metric ton for taxes

5) Peer academic institutions

A less theoretical and more pragmatic approach is to simply align an ICP with practices at a peer institution. At a minimum, peer institutions provide insight about how other schools have navigated this decision. Princeton University began using a proxy carbon price in 2008 of $35 (Princeton University, 2008). The price was later raised to its current value of $45 per ton. Yale University launched the Carbon Charge at $40 per ton in July of 2017 (Yale Carbon Charge Task Force, 2016), based primarily on the USG SCC at 3%. Smith College is piloting a $70 per ton proxy carbon price that rises over time at 2.5% the same rate as the USG SCC at 2.5%(Barron, Sayre, et al., 2018). Swarthmore College has the highest documented carbon price of any academic institution in the U.S. with a value of $100 per ton, which was established on a range of factors in 2017 (Swarthmore College, 2017). Other schools are piloting programs at the $5-10 per ton level, with the goal of revisiting the price for broader implementation. See the case studies in the Higher Education Carbon Pricing Toolkit for more details.

- **Benchmark price range:** $5 to $100 per metric ton, with non-pilot programs at $40 and above

Option Ranges

As described above, carbon prices in the business world range from less than $5 to over $150, as do estimates of the damages from carbon emissions. To illustrate the potential tradeoffs, we have grouped candidate prices into 4 general price ranges and described how they align with several possible criteria. While we attempt to remain as neutral as possible, some subjective judgement is required to divide and delineate the groupings in this section.

Low price signal ($5–15/ton)

A price in this range is consistent with:

- Estimates of the social cost of carbon that do not consider impacts of climate change on other countries and/or place a very low value on impacts on future generations; estimates supported by a minority of economists surveyed.
- The low end of carbon prices used by businesses to plan for risk and begin to shift institutional culture (General Motors $5/ton)
- Prices found in some existing carbon markets (RGGI <$5/ton, EU-ETS <$10/ton) but that are not stringent enough to achieve emissions reduction goals consistent with the Paris Agreement
- Prices for voluntary offsets that may vary in quality and in the degree to which they actually reduce emissions
- Lower *initial* prices for carbon tax legislation being considered in some U.S. legislatures
- Prices used by institutions to conduct pilot exercises

Moderate Carbon Prices (~$40–50/ton)

A price in this range is consistent with:

- The most frequently cited estimate of the social cost of carbon, which takes into account the global impacts of climate damage but is still missing many critical impacts ($49 in 2020 ($2017))
- Proxy carbon prices used by some oil companies (Shell and Hess) to plan for risk
- Carbon prices in 2020 that are roughly consistent with the low end of a carbon tax trajectory targeted towards keeping global temperature rise below 2 degrees C
- Potential offsets that are locally produced with educational and community co-benefits

- Near-term prices for carbon taxes being considered in U.S. state and federal legislatures
- Prices used by some schools with developed ICP programs

Higher Carbon Prices (~$60–75/ton)

A price in this range is consistent with:

- Estimates of the social cost of carbon that place a higher value on impacts on future generations and/or may better reflect future estimates of the social cost of carbon, as estimates are updated to include more missing damages
- Carbon prices used by companies such as TransCanada and Michelin to plan for risk
- Carbon prices in 2020 that are roughly consistent with the higher end of a carbon tax trajectory targeted towards keeping global temperature rise below 2 degrees C
- Many potential offsets with educational and community co-benefits
- Higher carbon prices that might be seen in future legislation

Highest Carbon Prices (~$100/ton or greater)

A price in this range is consistent with:

- Some of the most recent literature on the social cost of carbon which places a high value on future generations (low discount rates) and/or accounts for risk aversion
- Some of the higher carbon prices used by businesses (Stanley Black & Decker, Inc., Novartis)
- The price called for by the UN Global Compact ($100/ton)
- The most ambitious current carbon tax (Sweden: $126/ton)
- The highest internal carbon price currently used by a U.S. academic institution ($100/ton)

Escalation

One final but important technical detail is that an institution should consider whether any carbon price selected should rise over time in real terms (any price should rise with inflation). Such an increase reflects the increased damages from any given ton as GHG levels increase in the atmosphere. Escalation rates for an internal carbon price can be taken from USG modeling (typically about 1.6-2%/year - a $40 price in 2020 becomes ~$50 in 2030) or other literature. Similarly, most economic models project that carbon prices will need to rise to meet long-term emissions reductions goals. Any policy meant to manage regulatory risk will therefore also want a price that rises over time; modelers often contemplate rates in the range of 1-5% (McFarland, Fawcett, Morris, & Reilly, 2018). Another reason to select an escalating price is to allow for a lower, and thus potentially less disruptive, starting price that becomes more stringent over time. On the other hand, a single flat price may be marginally simpler for initial implementation and communication.

Process for Selecting a Price

Process is a critical component of selecting an institutional carbon price. As described above, selection of an ICP can involve technical complexity and policy judgements. At the same time, the price—if properly implemented—is likely to have real operational and financial impacts over time. As a result, it is important for the price to be selected by a group that reflects the values and priorities of the institution and to be approved through a process that develops buy-in and organizational support. Academic institutions have often achieved this by using a committee to select or recommend the price. Princeton selected a price using a CO2 task force composed of faculty and facilities/sustainability staff (Princeton University, 2015). Yale selected a price through the Carbon Charge Presidential Task Force composed of faculty and staff (Yale University, 2018). Swarthmore's value was selected by their Carbon Charge Committee composed of faculty and a range of staff (Swarthmore College, 2017). Smith College selected its initial value through a standing Committee on Sustainability composed of faculty, students, and staff (Smith College, 2018). Including representatives of the administrative units that will implement the price (e.g. facilities and/or finance) can help ensure smoother implementation and consideration of institutional cost tradeoffs. As noted above, the University of Oregon is exploring economic survey approaches to arrive at a recommended value. Any selection body will want to make its reasons for choosing a particular value transparent to the larger community and may need or want to have recommendation approved at a higher organizational level within the institution. For carbon charges and carbon funds, use of the revenue from the price may be an important part of the conversation about the price level. For example, "revenue neutral" carbon charges that recycle revenue back to organizational units will have a smaller net impact on units than one that uses the revenue for funding projects.

A final important aspect of process is to re-evaluate the price over time to incorporate both changes in the external benchmarks described above and institutional learning over time. The U.S. government originally recommended that the SCC be updated every two years, although updates, in practice, have been less frequent. And many of the other numbers described above are likely to change as well. Institutions will also learn over time and may discover that prices or price trajectories are too low to (or too high) to be effective (Gajjar & Vivek, 2018). An institution may want to commit to re-examining the internal carbon price after several years.

Conclusion

As noted above, selecting an ICP will involve discussions that weigh evidence, tradeoffs, and policy objectives. While potentially complex and time-consuming, these conversations are important if society is to appropriately respond to the challenge of climate change and offer an opportunity to engage members of the campus community in these issues. The benefits of experimenting with a reasonable "initial/pilot" price are likely to outweigh the benefits of extensive deliberations on the appropriate price that delay the real work of implementation and institutional learning.

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Note

If you found this guide useful at your institution, please email **abarron@smith.edu**. We also welcome your feedback on ways to improve this white paper.

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