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## In Quest for Carbon Neutrality, Late out of the Gate

Colleges participating in [a landmark agreement](#) to cut their net carbon emissions to zero have to start by knowing what they're emitting now. In a significant early milestone for the [American College and University Presidents Climate Commitment](#), the charter signatories were to submit baseline inventories of their colleges' greenhouse gas emissions by last Monday, Sept. 15.

Fewer than half the institutions met the deadline for submitting the public reports, which otherwise illustrate some common themes – including colleges' difficulties in accurately quantifying their employees' and students' commuting and air travel patterns, and tensions in resolving the goal of moving toward zero emissions while increasing enrollment and physical plant size.

Next up, these colleges are expected to submit a plan for achieving “climate neutrality” by Sept. 15 of 2009.

“We have an incredible new amount of data to look at, to begin to understand college greenhouse gas emissions in a deeper way than possible before,” said Julian Dautremont-Smith, associate director of the Association for the Advancement of Sustainability in Higher Education, which is involved in supporting the Presidents Climate Commitment.

Many of the figures in the reports are “rough, admittedly, but we think that’s OK. The point is to get a rough sense of what those emissions are,” and, over time, he continued, the methodology should improve and best practices should emerge. “This is really just the first step for most universities.”

Since its origins, critics of the Commitment have [raised questions](#) about a press release-friendly, presidential promise to move toward “carbon neutrality,” relying on the invention of technologies that don’t yet exist (and from a starting line, in terms of initial emissions, that many of the signatories have yet to set). In opting not to sign the pledge in 2007, the University of Virginia’s president, John T. Casteen III, [said of the university’s sustainability goals](#), “They require responsible, informed decisions made within the context of our mission and properly vetted not by one person, a president signing what is effectively a petition, but by faculties, the University’s Board, state officials, and others.”

And in responding to questions about accountability for maintaining the pledge, supporters of the Presidents Climate Commitment [told Inside Higher Ed](#) that they could be held accountable via their annual, public reporting.

As of Friday afternoon, 156 colleges had submitted their baseline greenhouse gas inventories online, out of 389 with reports due. (Of those that failed to submit their reports, 77 had previously requested extensions.) Dautremont-Smith explained that many colleges are still working on the inventory, which is challenging for many to complete, but acknowledged that the association hasn’t heard from all the colleges that are delayed.

“Our sense of it is this is a long-term commitment, multi-decade for most schools, so we’re not going to fret about being behind a little on this particular deadline,” he said.

### **Common Threads and (In)comparability**

In completing the baseline inventories, colleges were asked to, at a minimum, estimate emissions based on the on-site combustion of fossil fuels, electricity consumption, student, faculty and staff commuting, and institution-funded air travel. Some went above and beyond, calculating inventories for a series of years rather than the single year required, and including emissions from solid waste disposal or study abroad in their analyses. Many, but not all, attached detailed narratives.

To the degree that total carbon dioxide emissions can be normalized across universities, they’re broken down by emissions per 1,000 square feet and emissions per full-time enrollment.

Without better metrics for normalizing the data, the organizers of the commitment strongly discourage making comparisons across universities for ranking purposes, both because of variations across institutions (including accidents of location — differing heating needs in colder versus milder climates, for example, and the degree to which regional electricity producers rely on renewable energy sources versus coal), and also because of differences in methodologies and boundaries (what was and wasn’t included in the various university inventories).

Given higher education’s competitive nature, however, it’s not surprising that at least a couple of signatory colleges did issue press releases bragging about their (relatively) small carbon footprint. The University of Colorado at Boulder, for instance, [boasts](#) that its emissions per full-time enrollment figure (its net figure is 5.5 metric tons of carbon dioxide) is “quite a bit better” than that of the University of Arkansas (at 10.6) or the University of New Mexico (at 8.5).

“We’re invariably always looking at one another, and saying, ‘How are you doing?’” said Frank Bruno, Boulder’s vice chancellor for administration. “For me it’s less about a competition and more about learning from one another.”

At Boulder, the bulk of emissions come from purchased electricity. Overall – and not surprisingly – electricity, energy for heating and cooling, air travel and commuting were the major sources of emissions across universities, although, “How they broke out really depends on the type of school they are,” said Dautremont-Smith.

For instance, Centralia College, a community college in Washington State, found that, “With no on-campus living options, commuting emissions are especially large. Eighty-eight percent of the college’s total emissions come from student, faculty, and staff commuting!”

At California State Polytechnic University, Pomona, the largest single source of emissions was likewise transportation, which comprised about 55 percent of the campus’ average total emissions. It’s a heavily commuter campus: “Our students come from all over Southern California, because we are a somewhat unique university,” said Kyle D. Brown, interim dean of the College of Environmental Design and an author of the university’s inventory.

From 1995 to 2005, Cal Poly Pomona’s overall emissions increased by about 17 percent, as the full-time student population grew (by 26 percent) and building square footage did, too (by 39 percent).

That’s consistent with national trends, Brown said: “Everybody gets a little more efficient, but there are more people, so there’s more greenhouse gas emission.”

Brown said he expects Cal Poly Pomona officials will adopt a plan for achieving “climate neutrality” in the spring or summer, well ahead of the (next) Sept. 15 deadline. “If we’re looking ahead, maybe it’s 25 years or whatever time horizon we might look at, we have to think about what the campus might be in terms of its size at that point in order to have a reasonable strategy for how [carbon] might be neutralized.”

## New, Albeit Imperfect, Data

In detailing the data collection process, many colleges described culling good information on air travel and commuting emissions as being particularly difficult. Strategies ran the gamut, from surveying faculty, students and staff, to estimating driving distances based on the zip codes of those registered for parking permits.

“When we tried to approximate or estimate some of these values in commuting and/or air travel, it bordered on speculation,” said Robert Fisher, a professor of architecture and resident fellow for the Center for Energy Research/Education/Service at Ball State University. Ball State relied, for example, on prorating a Purdue University survey on air travel emissions to estimate its own.

“The university here is very, very good at keeping track of energy costs, and energy expenditures, in terms of the number of kilowatt hours or therms.... But we don’t have any accumulated data on faculty air travel, and we have no data whatsoever on the commuting patterns of faculty, students and staff,” said Fisher, adding that for Ball State, commuting and air travel constitute a relatively small portion of total emissions (he estimated they’re in the 5 to 10 percent range).

“It’s fortunate in that sense, that the lack of reliable data does not compromise seriously the overall estimate of the emissions. But we’re going to have to this year, for the next iteration of the report, try to get some more reliable information.”

A number of other colleges repeated the need to gather more reliable information on commuting and air travel patterns. A couple of colleges – including Bunker Hill Community College, in Massachusetts, and Southwestern College, in Kansas – didn’t even report commuting emissions this year, but pledged to do so the next. Boston-based Bunker Hill cited plans to modify and expand a Massachusetts Department of Environmental Protection-developed transportation survey to be given this fall.

Individual colleges’ inventories can be viewed through the Presidents Climate Commitment [online database](#), but no composite or summary data is yet available. “Our intention is to build some reports” with, for example, averages for different types of institutions, said Dautremont-Smith. He added that the timeline for that will depend on how quickly colleges behind the deadline submit their reports, and how long it takes to work with colleges that have questionable data, in order to identify any mistakes. (One obvious one: Black Hills State University, in South Dakota, reported exceedingly inflated emissions — four digits where other universities reported one or two. A spokeswoman cited a conversion error Friday in response to an inquiry from *Inside Higher Ed*.)

In the meantime, “It’s totally amazing to have greenhouse gas inventories submitted in a relatively common format,” said Dautremont-Smith. “There are a lot of possibilities for this data.”

After all, even on a campus level, much of this information was never readily available before. “Not everything was in spreadsheets,” said Jim Simon, an associate environmental educator at the State University of New York at Buffalo who was involved in putting together that university’s inventory. “There were a lot of coffee-stained notebook pages I was given, but I hope that changes over time. And I think it will.”

— [Elizabeth Redden](#)

*The original story and user comments can be viewed online at  
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