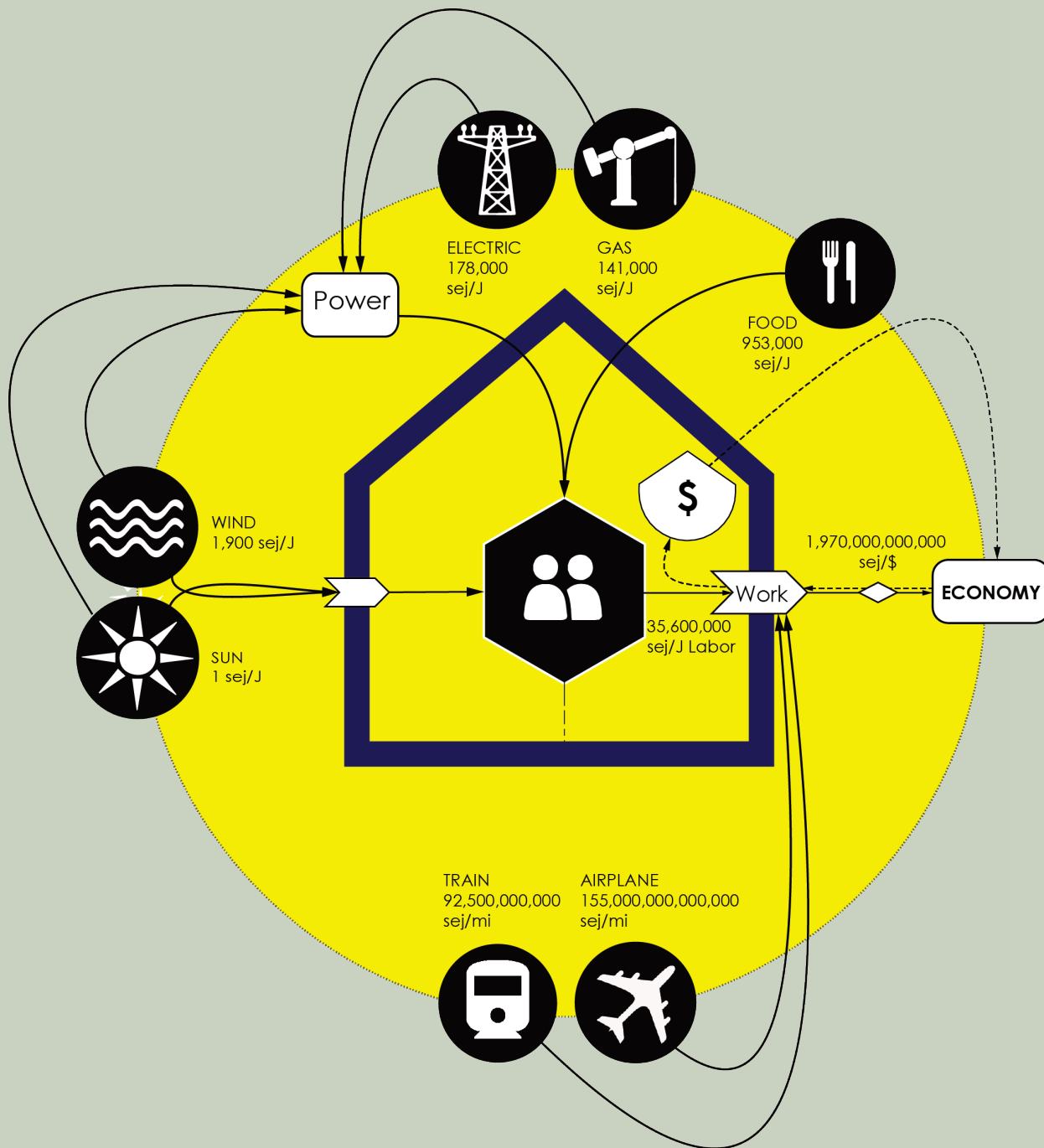


Bring it Home



Practical Ways for Penn Faculty and Staff
to Respond to the Climate Emergency

Prepared by

CIRCE

Committee on the Institutional Response to the Climate Emergency
Faculty Senate, University of Pennsylvania

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FOREWORD

CIRCE was established in December 2019 by the Executive Committee of the Faculty Senate for the purpose of facilitating discussion among faculty and with the administration about all aspects of global warming and climate change as they pertain to faculty at the University of Pennsylvania. CIRCE considers the following categories of faculty interest as they pertain to the climate emergency at Penn:

- Education, including classroom instruction and extra-curricular educational activities
- Research, including scholarship, practical expertise, and artistic expression
- Operations of the University, including decarbonization, energy efficiency, and sustainability
- Flourishing of community, both within Penn, and between Penn and its regional and international stakeholders.

Bring it Home: Practical Ways for Faculty and Staff to Respond to the Climate Emergency is the product of the CIRCE subcommittee on community and policy, which also generated a [Resolution on the Individual and Institutional Responses of Faculty in the University of Pennsylvania to the Climate Emergency](#). The resolution was endorsed by the Faculty Senate Executive Committee on 13 May 2020. *Bring it Home* helps faculty and staff act on the commitments stated in the resolution. CIRCE is delighted that the PPSA and WPPSA, the two Penn staff associations, were involved in preparing *Bring it Home* and have endorsed its recommendations for their members.

We encourage all current and future faculty to read the Resolution and, along with members of University staff, to take the practical steps outlined in *Bring it Home*. To add your signature to the Resolution as a member of the Penn Faculty, please visit: <https://forms.gle/3jLeaAad29H1Aizp7>

Philadelphia, July 2020

Bring it Home: Practical Steps for Faculty & Staff to Respond to the Climate Emergency

Bring it Home is designed to help individual faculty and staff members reduce their personal and professional carbon footprint in three key areas: home energy use, air travel, and retirement investments.

Why do we need to bring it home?

Because we are in a climate emergency. Since at least 2016, students, staff, and faculty have been calling on the University of Pennsylvania to divest from fossil fuels. In September 2019, faculty initiated the 1.5* Minute Climate Lectures and challenged the University to take unprecedented action in line with the Special Report on Global Warming of 1.5 Degrees Celsius of the Intergovernmental Panel on Climate Change. In 2020, the University made significant progress on reducing the University's carbon footprint by implementing aspects of the Penn Climate and Sustainability Action Plan 3.0. and announcing that the University would no longer invest directly in the thermal coal and tar sands industries. If we're honest with ourselves, the University is now doing a better job than we are! Our ability to support the University in making the right choices will be vastly improved if we demonstrate our seriousness by taking individual action multiplied by the numbers in our ranks. It's time for Penn faculty and staff to step up and bring it home.

Why are we focusing on home energy use, air travel, and retirement investments?

First, because of their impact: these are the three areas where most individuals have the best leverage for making significant CO₂ reductions.

Second, because in most cases the cost is minimal or negligible and the action required is realistic and manageable. Paradoxically, what often stands in the way of making the shift is either a dearth of information or a surfeit of bewildering details. Or—let's be honest—simple inertia. The goal of *Bring it Home* is to provide clear pathways to decarbonize our personal and professional lives.

Finally

Bring it Home is necessarily a work in progress and will be updated from time to time. For example, CIRCE is working with the Executive Vice President of the University to negotiate the inclusion of fossil free and green mutual funds among individual investment choices with TIAA-CREF and Vanguard, Penn's retirement plan providers. Likewise, suppliers, laws, rates, and promotions for renewable electricity and residential solar may change over time. *Bring it Home* will be updated periodically to reflect these and other changes.



Greening Your Energy Use at Home

If you live in Pennsylvania, New Jersey, or Delaware, you can select 100% renewable electricity to power your home or apartment. Rates are comparable to conventional (fossil-fuel) sources. If you're a homeowner, you can install solar panels.

Would it make a difference? Absolutely. Consider this: Penn has 18,000 faculty and staff, which at the average rates for residences in our region, consume 500,000 to 1,000,000 kwh of electricity annually and produce 150,000 to 300,000 metric tons of carbon dioxide equivalent (MTCDE), which is about as much as is produced by the main campus.

There are two equally important parts to the process: 1) shift to renewable energy sources; and 2) reduce your energy use through improved efficiency.

Step 1 Choose a green energy supplier

This is the easiest step you can take. If you have not switched, the default supplier is PECO. Perhaps you switched because another supplier offered you a lower rate. In either case, if you want to reduce your carbon footprint, consider switching to a greener option. With a little bit of research on easy-to-use websites, you can calculate the cost or savings by entering information from a recent bill, choose between companies with different characteristics (e.g., local PA wind or national wind, cooperatively owned or subsidiary of a fossil fuel company), and sign up online. The rates for solar and wind electricity are competitive with fossil fuel generated electricity. Depending on the supplier you choose, you may pay less for wind than for conventional, or slightly more because of other considerations (e.g., you might prefer wind electricity generated in Pennsylvania or to purchase your renewable electricity from a non-profit company rather than a large utility).

With the January 29, 2020, announcement about its new Power Purchase Agreement (PPA), Penn showed that it is moving aggressively toward low-carbon electricity.

Renewable Power Purchase Update:

Penn's Climate & Sustainability Action Plan 3.0 calls for the University to enter into a Power Purchase Agreement (PPA) to buy green electricity for Penn's campus. We negotiated a long-term PPA that will support the development of two new solar energy facilities in the Commonwealth of Pennsylvania. By supporting the development of these solar projects, Penn will avoid emitting 166,000 tons of carbon annually. We forecast that by 2023 the PPA can reduce the University's carbon emission by 45% from our 2010 levels, which would meet the goal of the Paris Climate Accord seven years early.

This is a major commitment on Penn's part. By comparison, choosing a green electricity supplier is simple and inexpensive. But if faculty and staff do this in numbers, the effect would be similar. Switching your supplier works indirectly through the market for renewable energy credits, thus increasing the demand for renewables and reducing carbon over time. To reduce carbon emissions directly, install solar panels on your roof. We discuss this in the next section.

To sign up for green energy in southeast PA, visit www.papowerswitch.com

NJ allows you to choose, but requires consumers to do the research as to whether the electricity is from renewable sources. <https://nj.gov/njpowerswitch/suppliers/electric/#simple3>

Delaware Customer Electric Choice. <https://dep.sc.delaware.gov/customer-electric-choice/>

Sierra Club Delaware Chapter: Guide to Choosing Green Energy in Delaware. <https://www.sierraclub.org/delaware/blog/2019/10/choosing-renewables-delaware>

And a 3 minute video from the Sierra Club on choosing green energy in Delaware https://www.youtube.com/watch?time_continue=133&v=RwbDL2kVzZo&feature=emb_logo

Step 2

Do you want to go solar?

If the home you own lends itself to the installation of solar panels, you may want to start by seeking local incentive programs and consulting with installers. Although some cities and regions make provisions for renters to join community solar projects, this is currently not an option in the Philadelphia area. A bill was introduced in the Pennsylvania legislature to allow for community solar projects. You can contact your representative in Harrisburg to express your support.

Solarize Philly is a city government initiative that streamlines the process, making it easy for residents to get financing and/or grants and to connect to qualified contractors who have cleared permits with the relevant City departments.
<https://solarizephilly.org/>

The City of Philadelphia offers a Solar Rebate.
<https://www.phila.gov/programs/solar-rebate-program/>

NJ Residential solar. <https://www.nj.gov/bpu/residential/program/index.html>

Solar for Delaware. <https://dnrec.alpha.delaware.gov/climate-coastal-energy/renewable/assistance/>

There are many companies that install solar systems. You can locate installers by using Google to search for “solar installers near me” or consulting www.solarreviews.com.

Exact Solar is a solar installation company founded and owned by Penn alumni.
<https://exactsolar.com/about-us/>

Step 3

Reduce your energy use.

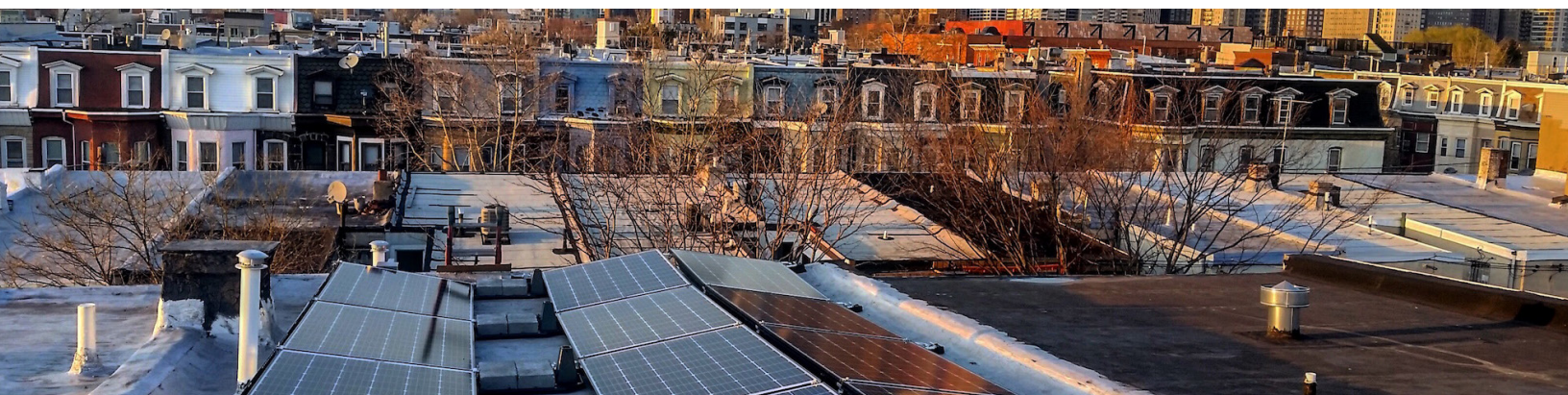
This step is easy. Make an appointment for an energy audit in your home. You will receive professional advice regarding insulation, your heating and cooling systems, and minor tweaks that may add up to significant savings in energy and money.

Peco Energy Assessments (\$49 or free for low-income households)
<https://www.peco.com/WaysToSave/ForYourHome/Pages/Assessment.aspx>

Delmarva Power Home Energy Check Up Program
<https://homeenergysavings.delmarva.com/quick-home-energy-check-up-program>

NJ Home Energy Assessment
<https://njcleanenergy.com/residential/programs/home-performance-energy-star/what-expect-home-energy-assessment>

NJ Clean Energy Program (incentives to make your home more efficient)
<https://www.nj.gov/bpu/residential/program/index.html>





What about Air Travel?

For years many of us have skirted around the topic of reducing air travel as a means of decreasing our carbon footprint. We are used to thinking of air travel as essential to our academic pursuits and educational mission. As inquisitive, engaged world citizens, we saw frequent domestic and international travel as a privilege and necessity. And when we take time off for vacation, there are other parts of the world to be seen. Many of us banish from our minds the thought that one of the best things we could do to mitigate climate change is to take one less flight per year. Or as Megan Ryerson, UPS Chair of Transportation and Associate Professor at the Weitzman School of Design, says in her 1.5* Minute Climate Lecture [“Time to Stop Flying”](#): “The scale of our air transportation emissions simply obliterates savings that we try to make in other areas.”

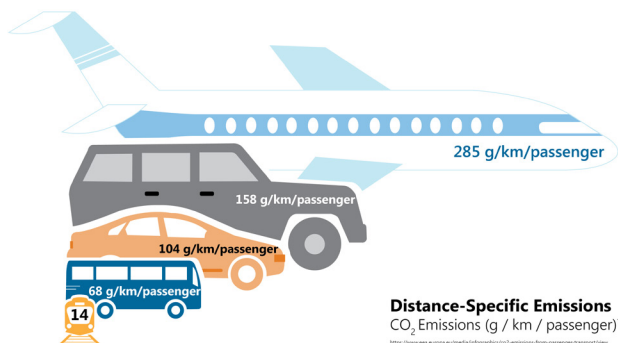
To Penn's credit, the University recognizes the scale of its carbon footprint from air travel and is planning a significant response. The January 29 2020, PPA announcement also addressed air travel concerns:

Air Travel Offsets:

University-sponsored air travel by students, faculty, and staff generates approximately 64,000 tons of carbon annually, accounting for 20% of Penn's carbon emissions and making it the second largest source of carbon emissions at Penn (after energy consumption). We are pleased to report that Penn Purchasing—in consultation with experts from the Weitzman School of Design, the School of Engineering & Applied Sciences, and Facilities & Real Estate Services—is developing a program through which Penn will purchase carbon offsets to help neutralize emissions from Penn's air travel. We anticipate launching the program later this year.

This is a great start. It needs to be coupled with guidelines that encourage everyone to consider alternative modes of transportation (e.g., train and bus) along the frequently traveled Eastern corridor between Washington, DC, and Boston and to eliminate unnecessary travel, while bearing in mind the travel needs that promote individual academic and career advancement, especially for junior faculty.

During the COVID-19 pandemic, we have been forced to test the capacity of remote conferencing, in many cases with surprisingly positive results. This experience should result in a paradigm shift for post-COVID-19 university life: less conference travel for faculty individually and a decrease in travel for staff who operate our departments and centers. It is possible, as we have discovered, to gather many scholars in one virtual place with far less trouble in terms of logistics and expenses. We are freer now to invite scholars for virtual interaction than we were before. Instead of impoverishing our academic life, remote conferencing and guest lectures have the potential to enhance it. To further improve the experience at Penn and in our professional associations, faculty should consult [Virtual Conferences: A Guide to Best Practices](#), co-authored by Benjamin Pierce (SEAS) for the Association of Computing Machinery.



What can faculty and staff do now, as we wait for the University to develop its offset program?

1. Limit and reduce air travel for yourself and your department.
2. Consider lobbying your professional associations to shift to virtual conferencing or devising other models (hybrid, biennial, regional, etc.) that reduce their carbon footprints. COVID-19 is forcing our associations to seek creative solutions that do not disadvantage junior faculty. In many cases, these are longterm solutions as well.
3. Purchase surprisingly inexpensive carbon offsets online for unavoidable travel. The University is considering five vendors for its offset program, two of which also provide offsets for individuals.
 - Cool Effect
<https://www.cooleffect.org/>
 - Terrapass
<https://www.terrapass.com/>

Incidentally, Terrapass was launched by CIBC Endowed Professor Karl Ulrichs of the Wharton School and 41 of his students in 2004.

Ask your business office if your school allows offsets for university-sponsored travel as a reimbursable expense from research accounts until the University-wide program is in place. (SAS does.) Remember to offset your personal travel as well. Offsets you purchase privately are considered charitable contributions and are tax-deductible.

While we're on the topic of offsets, consider using this handy, easy-to-use carbon calculator to determine your annual carbon footprint.

<https://www.carbonfootprint.com/calculator.aspx>

Plug in numbers for your gas and electricity, daily commuting by bike, car, or public transportation, long distance travel, etc., and receive a ball-park number that you may want to use as the basis for your offsets with Cool Effect or Terrapass.





Climate-Friendly Retirement

(or do Penn faculty and staff even have the option of divesting?)

Nothing in principle prevents Penn from divesting. Shouldn't faculty and staff members concerned about the climate emergency have a similar opportunity to divest their individual retirement accounts? In a University Notification from January 29, 2020, updating the [Climate and Sustainability Action Plan 3.0](#), Penn explained its investment policy to the University community.

When evaluating energy-related investments, Penn incorporates scenarios that assume the world achieves emissions levels consistent with the goals of the Paris Climate Accord. Including such scenarios highlights the advantages of cleaner energy and the elevated risks facing carbon intensive businesses. Factoring the implications of a de-carbonizing economy into investment decisions will materially limit the scope of fossil fuel-related investments in the portfolio. Notably, Penn does not hold, and would not expect to hold going forward, any direct investments in companies focused on the production of thermal coal or bituminous (tar) sands, a reflection of the significant carbon intensity—and the corresponding risks—of such businesses.

Penn is extending climate-related risk analyses to the evaluation of investments beyond the fossil fuel industry. Climate change already presents dramatic new physical and economic risks for businesses, and a de-carbonizing economy will reshape cost structures, business models, and competitive positioning for many companies.

Penn's venture capital portfolio has numerous companies focused on climate change solutions. Penn now has early stage investments in companies ranging from developers of high capacity batteries and carbon capture technology to firms seeking to reduce agriculture's environmental impact. Through these investments Penn and its venture capital partners hope to catalyze the new technologies and business models that will likely be necessary to solve the world's climate crisis.



In other words, Penn may not have divested, but it's certainly made some positive changes in its investment strategy.

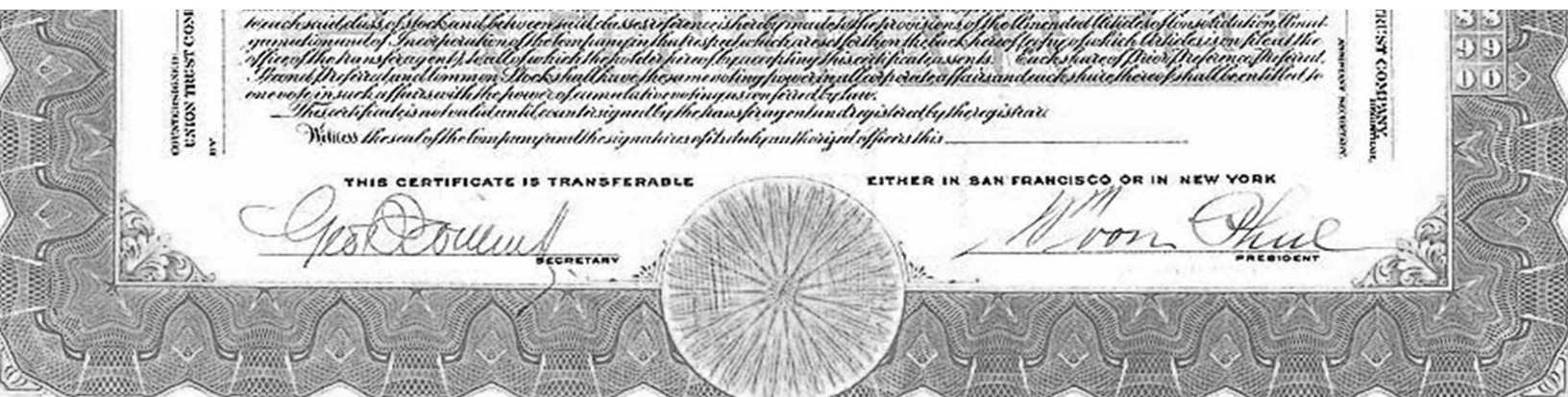
Penn's endowment is considerable, amounting to roughly \$14 billion in 2019. But consider this: every year Penn matches investments into the retirement accounts of faculty and staff. According to the 2020 operating budget total faculty and staff salaries are \$2,141,673,000, so something like \$300,000,000 in total will wind up being invested (probably more because of additional voluntary contributions). If we assume that that much has been invested every year over the working life of most faculty and staff, say 30 years, we arrive at a sum of around \$9 billion, which begins to rival the size of the endowment! It is not trivial to say that if faculty and staff had the will to match or improve on Penn's investment policy, we would make an immense difference.

Greening our retirement portfolios would have a considerable effect. Penn faculty and staff would join a list of thousands of institutions (e.g., Georgetown University and the University of California system, the World Council of Churches, and the Rockefeller Foundation) and individuals who have cumulatively divested more than \$14 trillion. Economists may argue that the direct impacts of divestment are negligible, but the mounting stigmatization of the fossil fuel industries reinforces perceptions of uncertainty about the future of fossil fuels and impacts price and behavior.

Social scientists suggest that divestment decisions can affect the overall political situation, as we saw in the anti-Apartheid divestment movement in the early 1980s.

Divesting from fossil fuels is only one side of the story. Faculty and staff could also invest in companies that contribute to creating a sustainable future and focus on climate change solutions.

As with most institutions' retirement plans, Penn's retirement plans permit faculty and staff to make investment decisions for their retirement accounts. In making these investment decisions, faculty and staff may choose among the menu of investment choices made available by the plans' investment fiduciaries. In addition, the retirement plans' record-keepers (currently, TIAA and Vanguard) both offer "brokerage window" options through which faculty and staff can access thousands of publicly available investment options, many of which promote pro-environment goals and solutions. In evaluating these many choices, faculty and staff may want to consider seeking personal financial advice on this "do-it-yourself" divestment option.



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