Climate Action Plan

Creating pathways for taking action and enabling us to practice sustainability and build climate justice throughout the college

Draft 3 – May 2023

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Plan Formation

Climate action and sustainability have been a concern of many members of the Olin community for years, as evidenced by the work of the Sustainability Steering Committee. Many individuals within that group and outside of it have worked to create piecemeal improvements to support sustainability at Olin, such as changes implemented by the operations team or changes to courses led by faculty. There had been no centralized, coordinated effort for the college to take collective action on climate change. The vision and 2022-2027 Strategic Plan present a framework and opportunity to adopt a climate action plan for the college.

A climate action team was appointed in Fall 2022 for the purpose of drafting such a plan for Olin's future. The team did so by reviewing the prior work of institutions around the country, multiple climate action frameworks, and generating potential goals and ideas for initiatives to meet those goals. The team hosted several synchronous and asynchronous opportunities for community consultation. While not every idea was ultimately adopted, the team carefully considered all feedback from the community. The team also engaged engineering firm Salas O'Brien to evaluate several options for infrastructure changes to the physical campus. From this process, this plan emerged with several action areas made up of measurable goals and implementable initiatives.

To maximize the impact of this plan, the team focuses on goals and initiatives that create change in the behavior of both Olin as a collective institution and the many individuals who make up the Olin community. While change in Olin's operations creates impact in areas such as the substantial reduction of greenhouse gases and improved resource management, the impact of our collective learning and behavior change is perhaps even greater as it ripples outward to contribute to societal change. Hence, while this plan includes goals that directly impact Olin's greenhouse gas emissions, use of natural resources, and spending policies, it also incorporates goals that enable the entire Olin community to serve as agents of change both within and beyond our campus.

Climate Action Plan Creation Roadmap

Spring 2022	Climate Action Plan identified as a Strategic Initiative
Sept 2022	Climate Action Team interest form sent to faculty, staff and students
Oct 2022	Climate Action Team kickoff
Nov & Dec 2022	Reviewed 14 college's CAPs & Reviewed Climate Action Frameworks
Jan 2023	Shared draft outline of CAP with the community and hosted office hours in the DH
Feb 2023	Engaged an engineering consulting and design firm to refine infrastructure plan
Mar 2023	Hosted a CAP-focused SLAC event for students
Apr 2023	Shared Draft 2 of the CAP and hosted Faculty/Staff Lunch and Learn + office hours



Engineering for One Planet from the Lemelson Foundation

Six Pillars of Climate Justice from University of California Center for Climate Justice





Just Transition Framework from the Climate Justice Alliance

Values and Tensions

Drawing from these frameworks and our conversations, the Climate Action Team created a set of values that we considered throughout the development of this plan. The values include:

- Reducing and eliminating Olin's contributions to environmental harm, including but not limited to greenhouse gas emissions
- Evaluating how Olin adapts to climate change and ensures resilience
- Building and maintaining the sustainability of Olin's financial resources
- Enabling climate and sustainability action across the entire college
- Ocnsidering and acting on the equity and justice impacts of our choices
- Dinviting collaboration and engaging in meaningful consultation with the Olin community
- Embodying Olin's goals and values as stated in the 2022-2027 Strategic Plan

These values are often in harmony but sometimes in tension. As an example of a tension, the team could have recommended to limit new enrollment of students who come from beyond a 200-mile radius to reduce the impact of air travel; however, this would conflict with Olin's goals around diversity, equity and inclusion. The Climate Action Team has done our best to weigh tensions and make responsible choices. We acknowledge that some community members may have made other choices.

Climate Action Plan Overview



Understanding and Using this Document

Action area | An overarching theme that consists of related goals

Goal | A measurable outcome that Olin is committing to achieve

Initiative | A stream of specific actions that allow Olin to achieve a goal, which is read from left to right



Action types | We have divided each initiative into up to three action types, which are color coded per below.



Action Tags | These provide additional information:

D: Action addresses an existing deferred maintenance concern

Cost Tags indicate the level of financial commitment necessary:

- \$ \$0 \$20k
- \$\$ \$20k \$100k
- \$\$\$ \$100k \$500k
- \$\$\$\$ >\$500k

Understanding and Using this Document (continued)

Key Assumptions

- This plan currently represents a vision that the Climate Action Team has built with community input. It does not represent that full agreement is currently in place yet.
- The Climate Action Team does not and cannot dictate curriculum; this is the role of the faculty. Curricular ideas here present potential directions and actions for the faculty to consider.
- Timelines in this document are based on Olin's fiscal year, not the calendar year. For example, "2023" refers to the fiscal year that began on 7/1/2022 and ends on 6/30/2023.
- The baseline year for comparisons is FY19 unless otherwise stated.

Abbreviations and Definitions

- ASHP | Air source heat pump
- BAU | Business as usual
- BoT | Board of Trustees
- CAP | Climate Action Plan
- Climate Action | Drawn from the UNDP, "stepped-up efforts to reduce greenhouse gas emissions and strengthen resilience and adaptive capacity to climate-induced impacts" through education, institutional planning and capacity building, and direct action
- Climate Justice | As defined by the University of California Center for Climate Justice "Climate justice connects the climate crisis to the social, racial and environmental issues in which it is deeply entangled. It recognizes the disproportionate impacts of climate change on low-income and BIPOC communities around the world, the people and places least responsible for the problem."
- ECM | Energy conservation measures
- ESG | Environmental, Social, Governance
- Geo | Geoexchange heating and cooling system

- GHG | Greenhouse gas
- IEN | Intentional Endowment Network
- ITC | Investment tax credit
- Living Lab | Integrating campus operations into the curriculum to learn how system work and how they can be changed
- NG | Natural gas
- OFYI | Olin First Year Introduction
- REC | Renewable Energy Credit
- Scope 1 | emissions created directly by Olin (e.g., burned natural gas)
- Scope 2 | emissions created indirectly by Olin (e.g., purchased electricity)
- Scope 3 | other emissions attributed to Olin (e.g., commuting, air travel, food)
- Sustainability | As outlined by the UN 2030 Agenda for Sustainable development which includes people, planet, prosperity, peace and partnership
- SPP | Sustainable Procurement Plan
- TBC | The Boston Consortium

2019 Baseline for Greenhouse Gas Emissions

GHG Functional Breakdown



*Complete data was not available at the time, so the impact of food purchasing is excluded from this total.

Most Impactful Opportunities for Emissions Reduction







Eliminate natural gas use by upgrading central plant to a heat pump system Reduce electric usage; switch to environmentallyfriendly generation options Find alternatives to air travel when possible

Living the Change in Our Governance



Connection to Olin's Strategic Plan

Key Initiatives in FY 2023-2024

- Decide on the structure and membership of the CAP governance team to oversee plan implementation
- Decide if and what the overlap is between the CAP governance group and the Investment Working Group





Living the Change in Our Academic Program



Key Initiatives in FY 2023-2024

- Convene conversation with the faculty about the impact and focus areas of a future curriculum and requirements for graduates
- Deepen connection between operations and the curriculum by providing resources from our operations to be used in courses

Action Area	Academic P	rogram		-	Type of Task Foundational Work Implementation Task		Range of Cost		
Goal Currio Olin's acade	cular Vision: Sust mic program and	ainability is interest of the second se	egrated througho levant skills and	out Fou			\$0 - \$20k \$20k - \$100k \$100k - \$500k		
values is una	ivoidable across	tour years of le	earning experienc	ces.	nded Outcome	\$\$\$\$	>\$500k		
2023	2024	2025	2026	2027	2028	2029	2030	e	
	Faculty workin group explore specific sustainability learning objectives for Olin students	g s vote on learn objectives for students o sustainabili	print for future curriculum w ability as part of technical sk modules built into every cou integrated depth cou n Olin n ty	ith enhanced emphasis (ills and professional ider urse, and new focused of urses	on htify integrated into a All Olin student positive	substantial climate t least one learning years s graduate with an ly improve sustaina	/sustainability learning experiences experience during each of their four at Olin ability to understand how they can ability through their careers		
	Raise money developmen integrating susta	o support special curricul funds during summers fo inability across the curricu	lar or Cre ulum	eate / revise curriculum	based on blueprint				
	Raise money for developing sus teaching sust en	supporting faculty training tainability and research ir ainability in undergraduat gineering at Olin	gs on hto sustainability	going research and deve in undergraduate engin similar programs acro	lopment program on teaching eering at Olin and connect to ss the country	B			
	Research and id faculty on devel	entify well-suited training oping sustainability across curriculum	s for 50% of facult	y have attended training across the curi	s on developing sustainabilit riculum	y			

Action Area:Academic Program					Type of Task	Range of Cost		
Goal Curricular Vision: Sustainability is integrated throughout Olin's academic program and developing relevant skills and values is unavoidable across four years of learning experiences.					ndational Work	\$ \$\$	\$0 - \$20k \$20k \$100k	
					Implementation Task		\$100k - \$500k	
					nded Outcome	\$\$\$\$	>\$500k	
				Inte	inded Outcome	D	Deferred Maintenand	се
2023	2024	2025	2026	2027	2028	2029	2030	
Survey and ide projects that C lab	ntify existing and prospect Dlin could constitute as livi as around campus Launch living I staff owner commitme Raise money fo	ive ng abs initiative with faculty a ship of 2 laboratories with nt to curricular integration or sustainability-related fact is in next 3–10 years	Maintain 2+ lin curricula utilize data from other data act other data act	ving labs on campus wit ar integration, e.g. n Solar Canopy project a ion plan goals related to climate re 1-2 faculty with clima research and tea	h nd b te/sustainability emphasis of ching	Increase	e the sustainability footprint of the	
	nire	s in next 3–10 years		research and tea	cning	cu	rriculum and research efforts	

Living the Change in Our Infrastructure



- Key Initiatives in FY 2023-2024
 - Adopt and ratify GHG emissions neutrality goal
 - Replace equipment at end of life with alternatives that meet emissions goals
 - Develop infrastructure projects with a focus on using the development process and data in the academic program
 - Amend landscaping procedures and plans





Preliminary Results from Salas O'Brien Financial Performance



Preliminary Results from Salas O'Brien Capital Expenditure Phasing

	G A	Geo (400T) w ASHP & Elec boiler		BAU Credit		ΙΤС	Net CAPEX
2025	\$	1,200,000	\$	-			\$ 1,200,000
2026	\$	8,917,500	\$	(8,510,000)			\$ 407,500
2027	\$	8,917,500	\$	(3,710,000)			\$ 5,207,500
2028	\$	5,535,000	\$	(3,710,000)			\$ 1,825,000
2029	\$	5,535,000	\$	(3,710,000)	\$	(5,900,000)	\$ (4,075,000)
2030			\$	(1,440,000)			\$ (1,440,000)
	\$	30,105,000	\$	(21,080,000)	\$	(5,900,000)	\$ 3,125,000

Geo	(400T) w Gas boiler		BAU Credit		ΙΤС		Net CAPEX
\$	1,200,000	\$	-			\$	1,200,000
\$	8,917,500	\$	(8,510,000)			\$	407,500
\$	8,917,500	\$	(3,710,000)			\$	5,207,500
\$	4,959,375	\$	(3,710,000)			\$	1,249,375
\$	4,959,375	\$	(3,710,000)	\$	(5,690,000)	\$	(4,440,625)
		\$	(1,440,000)			\$	(1,440,000)
\$	28,953,750	\$	(21,080,000)	\$	(5,690,000)	\$	2,183,750
	Geo \$ \$ \$ \$ \$	Geo (400T) w Gas boiler \$ 1,200,000 \$ 8,917,500 \$ 8,917,500 \$ 4,959,375 \$ 4,959,375 \$ 4,959,375	Geo (400T) w Gas boiler \$ 1,200,000 \$ \$ 1,200,000 \$ \$ 8,917,500 \$ \$ 8,917,500 \$ \$ 4,959,375 \$ \$ 4,959,375 \$ \$ 28,953,750 \$	Geo (400T) w Gas boiler BAU Credit \$ 1,200,000 \$ - \$ 1,200,000 \$ - \$ 8,917,500 \$ (8,510,000) \$ 8,917,500 \$ (8,510,000) \$ 8,917,500 \$ (3,710,000) \$ 4,959,375 \$ (3,710,000) \$ 4,959,375 \$ (3,710,000) \$ 4,959,375 \$ (1,440,000) \$ 28,953,750 \$ (21,080,000)	Geo (400T) w Gas boiler BAU Credit \$ 1,200,000 \$ - \$ 1,200,000 \$ - \$ 8,917,500 \$ (8,510,000) \$ 8,917,500 \$ (3,710,000) \$ 4,959,375 \$ (3,710,000) \$ 4,959,375 \$ (3,710,000) \$ 4,959,375 \$ (1,440,000) \$ 28,953,750 \$ (21,080,000)	Geo (400T) w Gas boiler BAU Credit ITC \$ 1,200,000 \$ - \$ \$ 1,200,000 \$ - \$ \$ 1,200,000 \$ - \$ \$ 1,200,000 \$ - \$ \$ 1,200,000 \$ - \$ \$ 1,200,000 \$ - \$ \$ 1,200,000 \$ - \$ \$ 8,917,500 \$ (8,510,000) \$ \$ 4,959,375 \$ (3,710,000) \$ \$ 4,959,375 \$ (3,710,000) \$ (5,690,000) \$ 4,959,375 \$ (1,440,000) \$ \$ 28,953,750 \$ (21,080,000) \$ (5,690,000)	Geo (400T) w Gas boiler BAU Credit ITC \$ 1,200,000 \$ - \$ \$ 1,200,000 \$ - \$ \$ 1,200,000 \$ - \$ \$ 3,917,500 \$ (8,510,000) \$ \$ 8,917,500 \$ (3,710,000) \$ \$ 4,959,375 \$ (3,710,000) \$ \$ 4,959,375 \$ (3,710,000) \$ \$ 4,959,375 \$ (3,710,000) \$ \$ 28,953,750 \$ (21,080,000) \$ (5,690,000)



Living the Change in Our Community and Beyond



- Skey Initiatives in FY 2023-2024
 - Identify and implement 2 sustainable procurement criteria
 - Begin to benchmark data as relates to climaterelated events, partner companies, projects and career outcomes
 - Develop community engagement events around refining CAP and kicking off first initiatives





Action Area:	Community		Type of Task Range of Cost			Range of Cost	
Goal Buildin	g Understanding	Everyone at	Founda	ational Work	\$	\$0 - \$20k	
Olin (faculty	staff students a	lumni BoT) unders	tands what is			\$\$	\$20k - \$100k
hannening in	the climate activ	on/sustainahility.sr	and and can	Impleme	entation Task	\$\$\$	\$100k - \$500k
contribute the	ir thoughts and	l ideas on how they	can engage and			\$\$\$\$	>\$500k
what needs ti	me and attentio	n	can engage and	Intende	ed Outcome	D	Deferred Maintenance
2023	2024	2025	2026	2027	2028	2029	2030
Find/develop	professional development (experiences (external) and	Implement annu traini	al professional developr ing/ support, track parti	nent experiences + cipation	100% of fa profes su	aculty and staff complete at least 1 isional development activity on ustainability/climate action
training/suppor	t (Internal) around climate faculty and staf	action and sustainability for f	50% of faculty and staff training ac	complete at least 1 prof tivity on sustainability/c	essional development and limate action	Facı implemen	ulty and staff feel comfortable ting sections of the plan that pertain to their work
Develop and p for OFYI w/the Studer	ilot CAP module Assistant Dean of nt Affairs	Climate Action Team presents on the Climate Action Plan annually as part of OFYI					
Develop au orientation aro plan and sustainability o like for every o	nd pilot student und elements of the what building a culture at Olin looks community member	New orientation module is implemented and becomes a part of the annual orientation	Within their first y goals and culture	ear, all students develog and specific familiarity v	o understanding of Olin's cli vith CAP and how they can g	mate action get involved	
Plan engagemen Action Plan as u wide	at around the Climate regular, community- activities	Conduct regular, community- wide activities around the CAP	Community members	s offer input on CAP stra of an annu	tegies and implementation al process	each year as par	t
Evaluate which t would be intere	types of data the communi ested in and where to post	ity Regularl	y collect and display data re	lated to campus operati	ons and the CAP	Commeva	nunity members can use data to aluate our progress and their impact 26

Action Area:Community and Beyond					Type of Task		Range of Cost
Goal I Student Ex and institutions f climate justice - i urban planning, I	operience: Stud focused on sust in areas such as health	lents connect w ainability, clima STEM, policy, la	ith companies te action and aw, education,	Fo Imp In	oundational Work Dementation Task tended Outcome	\$ \$\$ \$\$\$ \$\$\$\$ D	\$0 - \$20k \$20k - \$100k \$100k - \$500k >\$500k Deferred Maintenance
2023	2024	2025	2026	2027	2028	2029	2030
Identify students interested in climate action and climate justice Plan seminars, panel include sustainability a Build relationships with advancing sustainability ju Track intern and grad outcomes in sustainab grad school, jobs, inter	Develop plan for students to work w/companies and orgs while at Olin that offer internships/jobs in climate action and climate justice Is and speaker series that and climate-focused career companies and organizatio y, climate action and climate ustice Internships of of access to action/clime events stud	Implement a with companie at Olin that S Impleme access to su Report o focused pos te # of off- climate dents have for	plan for students to work es and organizations while t offer internships/jobs nt plan to increase student ustainability-focused career in number of sustainability- sitions available at career far mpus; prepare students to or companies that align with skills and interests	s - airs tions to search their	upport an increase of graduates into sustainably-focused jobs by 10% per year All students interested in cli change, sustainability or jus oriented jobs or careers a - Aware of what these things and how to get involved at - Aware of what these things and how to get involved at - Aware of who the compani and the jobs they have avail are applying, getting intervie landing jobs/internship - Participating in relevant pro on and off campus	mate stice- ire: s mean Olin es are able – ws and s ograms	
positions available at fairs	Create plan to incre sustainability	ease student access to focused careers			in person) alumni working these fields	g in	27

Action Area:Community and Beyond					Type of Task		Range of Cost
Goal Enga surroundin sustainabili together to	al Engaging Beyond Olin: Olin engages with the rounding community around climate action and tainability to share knowledge, learn from others, and work ether to make broad change.			Four Imple Inter	ndational Work ementation Task nded Outcome	\$ \$\$ \$\$\$ \$\$\$ D	\$0 - \$20k \$20k - \$100k \$100k - \$500k >\$500k Deferred Maintenance
2023	2024	2025	2026	2027	2028	2029	2030
Explor munici	e partnerships with local schoo pal agencies, climate advocacy	ols, community centers, groups, and nonprofits. Explore public ti	e state of Massachusetts a eet the goals of the decarb reliable infrastru anding relationship with th her on climate change and	nd local grid to ensure we can onization roadmap and create cture ne Town of Needham to work sustainability efforts	Olin i decar Oli Nee regu climate	is engaged with the state of MA on bonization and local infrastructure in is connected to the Town of dham's government such that it larly advises and coordinates on e change and sustainability efforts.	
Reach out f shar	to BOW and The Boston Conso ed interest in community enga Create and mainta	with the Tow rtium partner schools abou gement programming in a directory or mini-site o	n of Needham/BOW/TBC Raise mor engagement t It	hey for sustained communi hrough Olin partnerships a BOW /TBC Draft a BOW commu	ty ind/or / consortium collaborative nity engagement plan our existing partnerships and e	expertise related	to climate change and sustainability

Action Area:	Community	and Beyon	k		Type of Task		Range of Cost
Goal Engag	ing Beyond Olir	n: Olin engages w	vith the	Fou	Indational Work	\$ \$\$	\$0 - \$20k \$20k - \$100k
surrounding sustainability	community aro to share know	und climate action ledge, learn from	on and others, and wor	ik Impl	Implementation Task		\$100k - \$500k >\$500k
together to make broad change.				Inte	ended Outcome	D	Deferred Maintenance
2023	2024	2025	2026	2027	2028	2029	2030
Identify expertise among faculty, staff, and students on climate change and sustainability that could be shared in various formats with our surrounding community Assign a staff member to act as a point person for community engagement around climate change and sustainability.				plement a comprehe community engage	nsive, outreach-oriented ment plan	Olin m standa worksh chang Olin ha	aaintains at least one relationship or alone form of public education (i.e. op, conference, etc.) around climate ge and sustainability it offers to the community annually.
Study models of community engagement around climate change and sustainability implemented by similar colleges.						least on forms	e local school where it offers diverse of climate change and sustainability education.

Action Area: Community and Beyond					ype of Task		Range of Cost
Goal Buildi partnerships	ng Partnerships with external c	d maintains deep center climate	Foundational Work		\$ \$\$ \$\$\$	\$0 - \$20k \$20k - \$100k \$100k - \$500k	
action and cl working in a	imate justice ar coalition on clir	nd demonstrate t nate action	he importance of	Inter	nded Outcome	\$\$\$\$ D	>\$500k Deferred Maintenance
2023	2024	2025	2026	2027	2028	2029	2030
Explore and compare networks and initiatives of climate action- committed institutions (ideally with educational components and expectations) that Olin could join. Partner with oth or				ember of one or mo institutional netw ners on initiatives as ganizations with com	re climate action-committed yorks. part of the networks and nmon goals	Rotate O a leader netwo tak Have an strateg clii	lin's president or our institution into iship position in a national or global rk of higher education institutions sing the lead on climate action established fundraising and lobbying y and portfolio for collaborations in mate change and sustainability
Research opp college to en and student other colle	ortunities to bring federal, able more climate-focusec (SCOPE and more) projects ges (e.g. BOW) or organiza	state and local funding to th research, campus upgrades, , possibly in partnership with tions (e.g. Greentown Labs)	e Develop a lobbying s support engineer	strategy, ideally with ing for climate actio research and fur	other institutions, for Olin to n and sustainability public nding		
Develop partr lool	erships with companies, for relational and mea	oundations and groups that a ningful collaboration	re Cultivate and s opport	trengthen existing p cunities to expand ar	artnerships and look for Id nourish them	Have e multi	established partnerships that span ple facets of Olin and benefit our partner

Frequently Asked Questions

- Q: How will Olin ensure this plan gets enacted?
 - A: The governance team for the Climate Action Plan will be responsible for working with the executive team and college council to ensure that the plan is enacted, budgeted for, and the value of engaging with the Climate Action Plan is communicated throughout the Olin community.
- Q: Will the Climate Action Plan specify what curricular changes must be made?
 - A: The faculty are charged with making any changes to the curriculum. Designing and implementing a new curriculum is in progress and it is hoped that sustainability will figure more prominently in the future. This plan has outlined a potential course of action the faculty may choose to enact.
- Q: Will this plan continue to evolve?
 - A: Yes, this plan has been created based on knowledge we currently have and discussions we've had with community members. As we dive deeper into various action areas we will need to refine and update our path forward.
- Q: Why isn't divestment part of the plan?
 - A: Divestment is an option that may be aligned with this Climate Action Plan. However, endowment investment decisions are determined by the Board of Trustees through their Investment Committee. We expect the Investment Working Group comprised of trustees, staff, faculty, and students will discuss this topic leading to recommendations that can be acted upon in the future.

Frequently Asked Questions

- Q: Why does the plan not address transportation?
 - A: Transportation is a massive contributor to our emissions, as demonstrated on page 9. Due to Olin's size, community composition, and location, it is very challenging to change without compromising goals like having a diverse student body. Transportation will be addressed by the governance group in consultation with the community as the plan implementation evolves.
- O: How is this different from the sustainability plan that was worked on in 2018/2019?
 - A: The Sustainability Steering Committee began work on a sustainability plan in 2018. Though much work was put into it, the plan was never completed and was never presented to the college leadership for action at the time.
- O: How do we prevent greenwashing in terms of offsets and in our partnerships?
 - A: Olin is currently in conversations with other colleges in MA about how we could collaborate and collectively work on developing meaningful carbon offset projects in the local area. We also plan to develop criteria, such as supporting our local grid, for the type of Renewable Energy Credits we purchase. In terms of our partnerships, we will look to reevaluate partnerships at a regular interval to see if they align with the values of this plan and in Olin's Strategic Plan.
- Q: How were dates in the plan chosen?
 - A: Throughout the plan, dates have been proposed by the Climate Action Team that reflect the team's preliminary thoughts on the likely availability of financial and human resources to accomplish each initiative. For the infrastructure section, the dates were informed by those criteria and the preliminary feasibility study conducted by Salas O'Brien on Olin's behalf and projections of existing equipment life.