



Building a Global Culture of Sustainability in Science

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Mission

My Green Lab's mission is to **build a global culture of sustainability** in science to transform the industry into a global leader on environmental sustainability. Through education, community engagement and market leading certification tools, we are inspiring the scientific community to integrate sustainability into everything they do.

Vision

We will ensure a world where all science is conducted in a way that benefits the health and well-being of people and our planet.



Laboratories Are Resource Intensive Spaces



10x

**More energy than
office spaces**

4x

**More water than
office spaces**

5.5mil

**Metric Tons of plastic
waste each year**
(12 billion pounds)





A Closer Look at Energy

57% of energy consumption in the lab is influenced directly by lab users

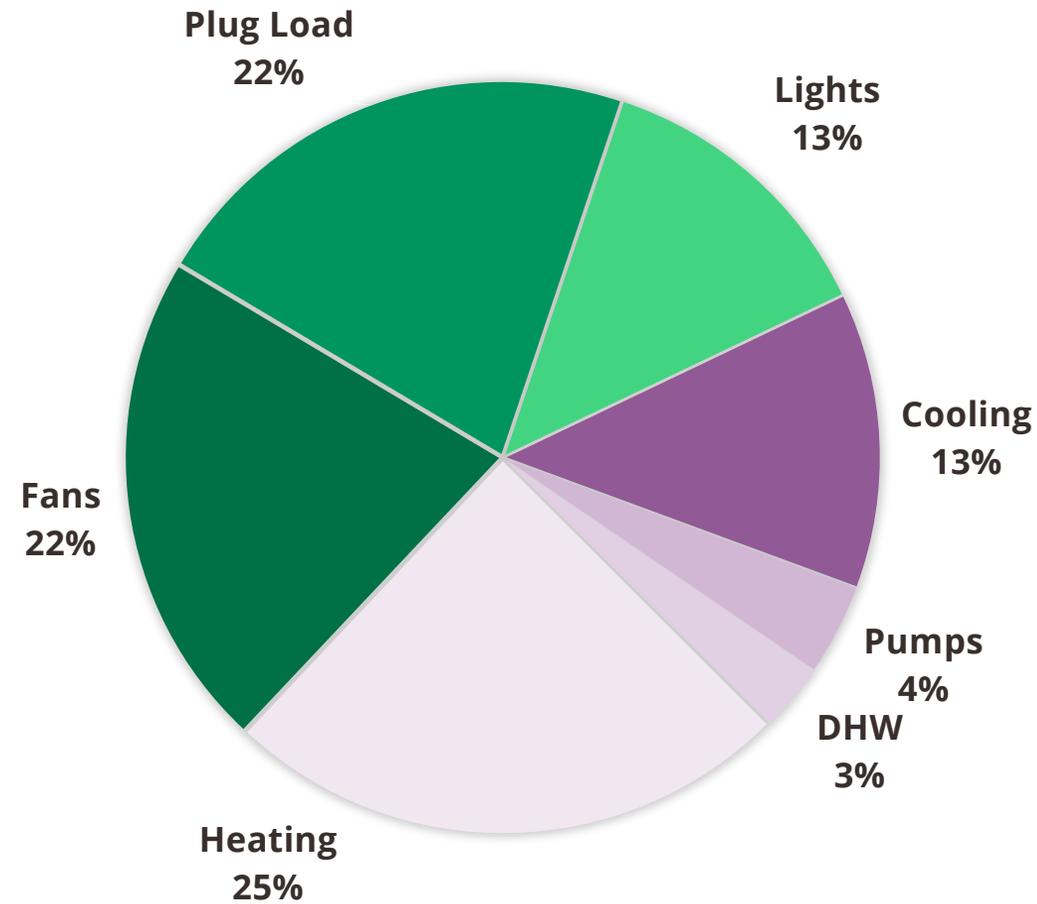
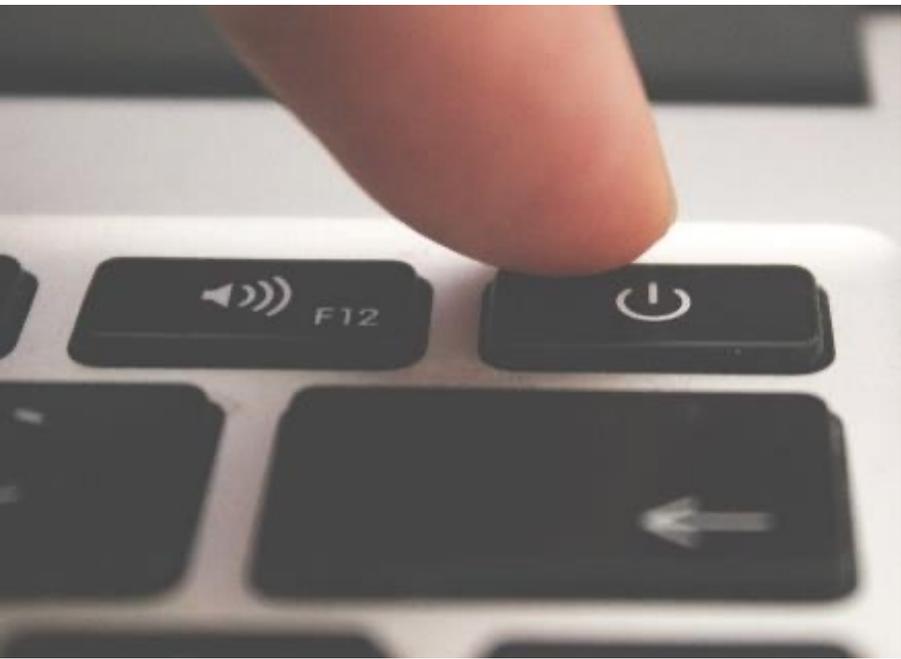


Chart from
Alison Farmer,
kW Engineering





Rethinking Energy



- › Make sure **lights get turned off** in the lab and support rooms



- › Identify **equipment to turn off** when it is not in use
- › Use **outlet timers** to make it easy

- › **Drying ovens** = 🏠

- › **Incubators** = 🏠

- › **TC hoods** = 🏠

- › **Vacuum pumps** = 🏠

Be Good in the Hood

- › Fume hoods can consume as much as **3.5 homes worth of energy!**



- › **Shutting the sash** on your fume hood could **save 2 homes worth of energy**
- › Make sure **excess equipment and supplies** are not stored in hoods, blocking air flow
- › **Turn off the lights** when not in use

Harvard's **Shut the Sash** program **saves \$240,000 per year** and 300 metric tonnes CO₂-e



Cold Storage Best Practices

- › **-80°C freezers** can consume **as much energy as a house**
- › **Chilling up -80s to -70°C** can save around 30% of the energy consumed
- › Keep cold storage operating at **maximum efficiency**:
 - › Maintain door seals
 - › Defrost and remove ice
 - › Clean filters and vacuum coils – this can save 10%





Water Wisdom

- Install **low-flow aerators** – they can reduce water usage at the tap by 50% - 70%
- Use **alternatives to single-pass cooling** like recirculated water or a Findenser
- Run **autoclaves and dishwashers** when full as much as possible
- Use the **right quality water** for the task – it takes 3 gallons of water to make 1 gallon of DI water





Case Study:

Saving Water in University Labs

The Problem

- University of California, Berkeley had just 6 labs that used single pass cooling in lab processes
- Estimated water usage was **3,600 liters of water for every 24 hours** single passed cooling was used on a single column
- Labs ran single pass cooling for days at a time

The Solution

University invested in Findensers and fish pumps to replace single pass cooling setups

The Impact

Saved 1.7 million gallons of water a year





Reduce, Reuse, Recycle

- Get to know your waste and **identify your largest waste streams**
 - know what you can recycle
 - Identify what you can reduce
- Work with suppliers to **explore product alternatives** that can help you minimize waste, reduce hazards and/or decrease energy and water usage
- Use a **shared supply of common reagents** and materials to prevent over-purchasing
- Choose more sustainable products – **look for environmental labels like ACT or ENERGY STAR**



ACT.

Accountability
Consistency
Transparency

An eco-label for laboratory products

- Consumables
- Chemicals/reagents
- Equipment

Over **1,000** products labelled!

- Online database is public and free
- Visit www.act.mygreenlab.org

ACT. US	
The Environmental Impact Factor Label	
Product Name	
Product Location	
SKU 0000	
Environmental Impact Scale	
← 1 Decreasing Environmental Impact 10 →	
Manufacturing	
Manufacturing Impact Reduction	3
Renewable Energy Use	Yes
Responsible Chemical Management	5
Shipping Impact	9
Product Content	1
Packaging Content	5
User Impact	
Energy Consumption (kWh/day)	2.5
Water Consumption (gallons/day)	13.1
Product Lifetime	4
End of Life	
Packaging	5
Product	1
Innovation	
Innovative Practices	-1
Environmental Impact Factor:	50.1
Label Valid Through:	January 2021
	act.mygreenlab.org

Simple color scale indicates environmental impact, with values on a scale of 1 to 10

Information about categories available online

Energy and water consumption data help drive sustainable lab practices

Total Impact Factor enables quick comparisons

Expiration date keeps data current and drives continuous improvement



Program Ecosystem

My Green Lab offers a suite of leading-edge programs to engage everyone from students and researchers, to laboratories, major institutions, and corporations in an effort to fundamentally and permanently improve the environmental performance of scientific research.

Certification



My Green Lab Certification

International 'gold standard' for laboratory sustainability best practices.

ACT.

The ACT Label

The world's premier eco-label for laboratory products that ensures Accountability, Consistency and Transparency in order to enable sustainable laboratory procurement.

Advocacy & Education



Freezer Challenge

International competition to encourage cold storage best practices.



My Green Lab Ambassadors

Global community of green lab enthusiasts that have been educated and empowered to bring green lab principles into their work and research.



My Green Lab Accredited Professionals

The first credential of its kind developed to offer scientists an opportunity to grow their knowledge and demonstrate their expertise in lab sustainability.

Campaigns



UN Race To Zero

MGL is a delivery partner for the UN RtZ, working to enable the systemic transformation of the Biotech and Pharmaceutical sector. MGL Certification has been selected as a key indicator in the 2030 Breakthrough Outcomes campaign.



million advocates for sustainable science

Million Advocates

Global advocacy campaign requesting action from funding bodies to prioritize sustainability in the way research is conducted.





Designed for scientists and laboratory professionals to drive sustainable lab practices

- Free, online learning program
- Quick introduction to lab sustainability
- Provides ideas for how sustainable actions can be implemented and communicated with lab members

What does the Ambassador Program Cover?

Four Smart Science training videos:



Energy



Waste



Water



Green Chemistry

5000+ Ambassadors

(as of August 2023)

- 52+ countries
- Growing Fast!





My Green Lab Accredited Professional Program

Become a green lab expert!

www.mygreenlab.education



The first credential of its kind developed to offer individuals an opportunity to grow their knowledge in lab sustainability.



Waste



Energy



Water



Procurement



Green Chemistry



Engagement

*Discounted Pricing for Students/Univ/Nonprofits/Gov

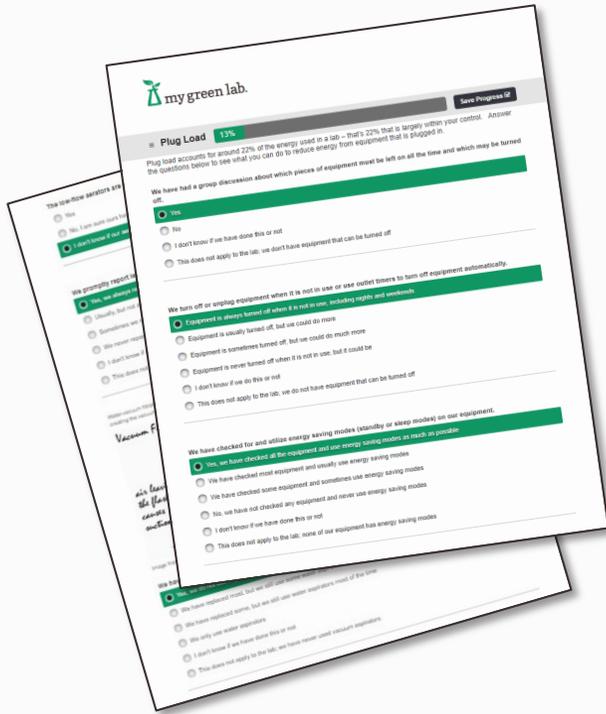




my green lab
certification.

Get My Green Lab Certified

- Online self-assessment
- 14 topics covered
- 150 questions, 30-45 minutes to complete
- Focus is on lab behaviors and actions lab members can take to be greener
- 8-10 months certification journey
- Start with a pilot or sign up the whole Institution!



mygreenlab.org/green-lab-certification



Certification Process



1

Assess Baseline

- Survey lab members to understand current practices
- 3-5 weeks
- 50% participation required
- Make recommendations for improvement

2

Implement Changes

- Labs discuss solutions and implement behavior change practices
- Labs and Green Teams coordinate additional work
- 6-8 months on average

3

Get Certification

- Re-assess lab practices
- 3-5 weeks
- 50% participation required
- Certification level given
- Make recommendations for further improvements

4

Make More Changes

- Labs adopt additional policies and best practices
- Green Teams support further improvement projects

5

Do Re-Certification

- After 2 years, re-assess lab practices and provide new certification level
- Further recommendations made



Recognizing Success

Green

80% score on Certification Assessment



Platinum

70% score on Certification Assessment



Gold

60% score on Certification Assessment



Silver

50% score on Certification Assessment



Bronze

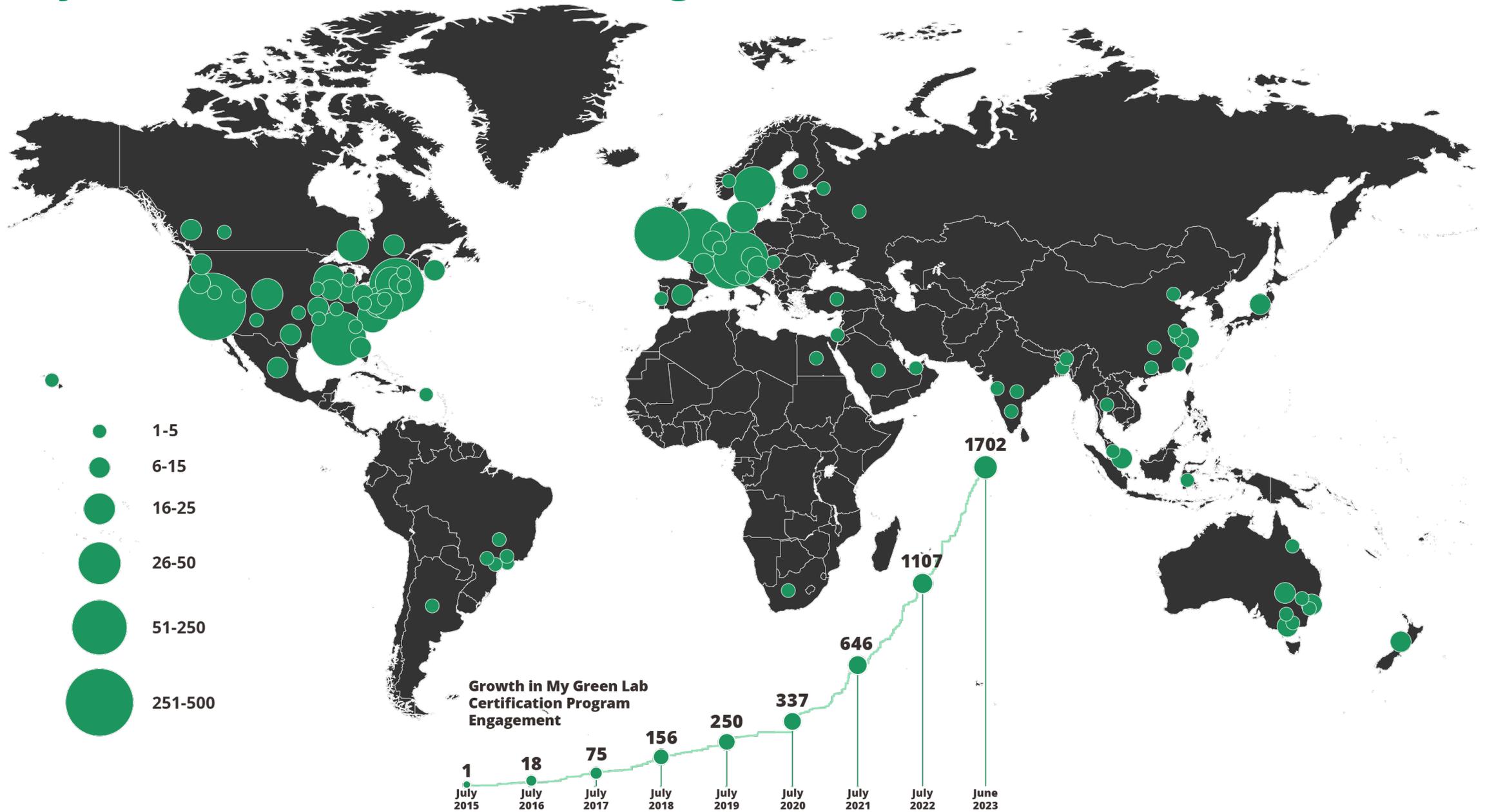
40% score on Certification Assessment



My Green Lab Certification Case Study published on our blog, [The Beaker](#)



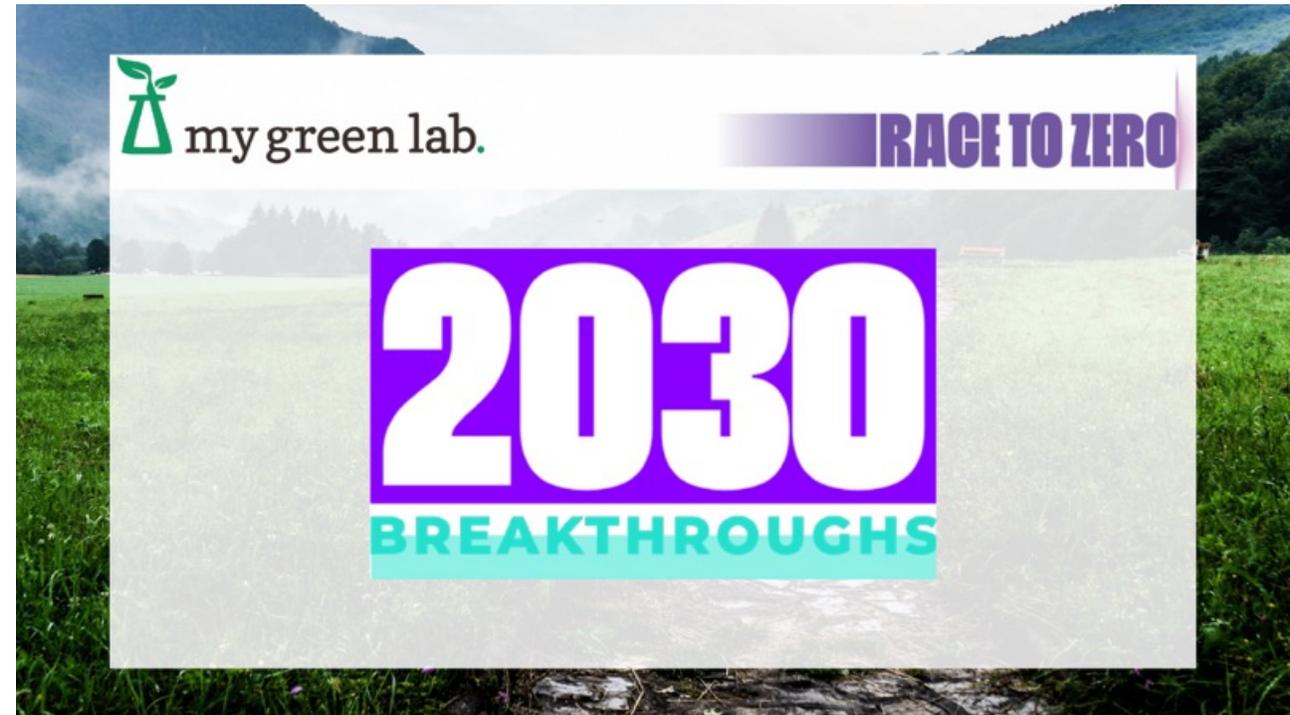
My Green Lab Certification Program Growth



My Green Lab Certification Selected as United Nation's FCCC's Breakthrough Outcomes

The [2030 Breakthrough Outcome](#)
for Pharma states:

**“95% of labs across major
pharma and med-tech
companies are My Green Lab
certified at the green-level
by 2030.”**



Sample Green Lab Certifications



AbbVie
Amgen
AstraZeneca
Bayer
Biogen
Boston Children's Hospital
Colorado Department of Agriculture
Danone Nutricia
Delta Leaf Labs
Department of Energy
Environmental Innovations
Environmental Protection Agency
Eli Lilly
Gilead
GlaxoSmithKline (GSK)
Howard Hughes Medical Institute
Johns Hopkins University
Johnson and Johnson (JnJ)
La Trobe University
Medtronic
Novartis

Novo Nordisk
Pepsi Co
Queen's University
Roche
Royal College of Surgeons Ireland
Sanofi
Stanford University
Takeda
Trinity College Dublin
United Kingdom Research and Innovation
University of Nantes, France
University College Dublin
University of Alabama, Birmingham
University of California, Merced
University of Cologne
University of Florida
University of Galway
University North Carolina
University of Melbourne
University of Southern Denmark
University of Sydney

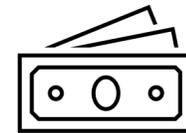


My Green Lab Case Study AstraZeneca

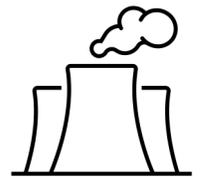
- AstraZeneca invested \$60,000 in My Green Lab Certification for select R&D labs as part of its corporate sustainability strategy.
- AstraZeneca's end-of-year report revealed an energy savings of 1,270,185 kWh/year, equivalent to 900 tonnes of CO2 emissions, and \$317,548 in energy costs.
- **AstraZeneca found a 4.3X ROI on energy savings in year one for labs using My Green Lab Certification.**



Reduced energy usage
by 1,270,185 kWh/year



Saved \$317,548 in
annual energy costs

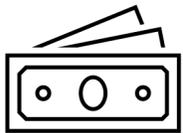


Reduced CO2 emissions
by 900 tonnes/year

AstraZeneca 

Case Study: My Green Lab Certification, Technical University Berlin

- The Department of Applied Biochemistry focused on equipment energy reduction best practices for a single lab located in Berlin, Germany.
- The lab's sustainability report found energy savings of 26,000 kWh/year, over 35% of the lab's original energy usage.
- **The Technical University Berlin achieved a 13X ROI on energy savings using My Green Lab Certification.***



Saved €14,480 in annual energy costs



Reduced energy use by 26,000 kWh/year



Implemented equipment inventory program



TECHNISCHE
UNIVERSITÄT
BERLIN

*As reported by Technical University Berlin after completing My Green Lab Certification Program, 1 lab sample. 2023.



Benefits for Scientists



Build a culture of sustainability in our labs



Increase collaboration and engagement



Explore new processes, methods, and ideas



Healthier materials for employees



Save money and resources



Public recognition of certification and success



Model for other labs throughout the organization



Join the Movement

- Sign up for our newsletter: www.mygreenlab.org/newsletter.html
- Become a [My Green Lab Ambassador](#)
- Certify your lab with [My Green Lab Certification](#)
- Use the [ACT](#) database to make more sustainable purchase

Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has."

-Margaret Mead

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