

The list below details how My Green Labs assesses labs that enter its annual Freezer Challenge competition.

Category 1: Good Management

- **Defrost and Remove Dust from Intake or Coils:** Defrost freezer by removing samples, turning the unit off, allowing ice to melt, and then turning the unit back on. [Learn the step-by-step process](#) from Esco Lifesciences Group or through Harvard Sustainability Office's [guide to defrosting your freezer](#).
- **Remove Dust from Intake or Coils:** Vacuum dust and debris from intake, filters, and coils.
- **Remove Excess Frost/Ice:** Brush frost from freezer door/shelves and clear the door gaskets and seals by tapping/brushing.
- **Clean Out Freezers:** Some estimates show 10-30% of refrigerated items found in labs are no longer needed or viable.
- **Sample Laboratory Inventory:** When taking inventory, include identifying information about samples like researcher, date, experiment, sample type. Keep these updated, either on paper or electronically regularly. The University of British Columbia has a [sample inventory template available to the public](#). When created electronically, inventory databases can be searchable which can reduce time spent locating samples and shorten the time that freezer doors are open.
- **Utilize High Density Storage:** [Maximize freezer space](#) by switching to high-density storage when possible (freezer boxes with 13x13 dividers or smaller tubes as opposed 9x9 or 10x10 dividers).

Category 2: Temperature Tuning

- **Adjust Ultra-Low temperature (ULT) Set Points:** Only carry out this action after checking to make sure your laboratory's specific samples can be stored at -70°C instead of -80°C.
- **Store Laboratory Samples at Appropriate Settings:** Many reagents and samples don't need to be stored at ULT temperatures. For example, DNA can be stored in a standard -20°C freezer – these freezers consume 80% less energy than ULT freezers.

Category 3: Retirements & Upgrades

- **Retirement Without Replacement:** Retiring or unplugging unneeded refrigeration units is the ultimate way to save energy and space.
- **Retirement with Energy Efficient Replacement:** If your lab is in the market for new cold storage units, look to energy-efficient models. Labs seeking to purchase a ULT freezer can apply to the Efficient Freezer Rebate Program (EFRP). Through EFRP, the [Renewable Energy Special Projects Committee](#) (RESPC) provides 35% instant rebates (up to \$5,000) for the purchase of [approved ULT models](#).

Category 4: Sharing & Room Temperature Sample Storage

- **Sharing Freezer Space:** Sharing equipment is an effective way of reducing a laboratory's operating costs and prevent the need to purchase additional equipment.
- **Barcode Inventory:** Barcodes help labs [keep track of samples](#).
- **Room Temperature Sample Storage:** Well plates, tubes, round-bottom flasks, and 2" boxes can be stored at room temperature.
- **Room Temperature Reagents and Kits:** Some biological samples can be [stored at room temperature](#).

