

# NTU Freezer Challenge Campaign 2017

## Score Sheet



### How to score for this Challenge

- Points will be awarded per ULT freezer.
- If you have just cleaned out shelf space and/or samples; and defrost the ULT recently which may be done during the challenge.
- ULT maintenance demo session will be provided as well as maintenance tool kit will be given out to each participating freezer for adoption.
- Points will be awarded for each adopted practice accordance to the list below and each kWh/day saving will be awarded for 1 point. Please refer to the **Annex A** for illustration.

### How the points (pts) will be awarded

S/N	Practices Description	Pts	Actions and records required to be provided for the pts.
1	Preventative Maintenance Defrost & remove dust from intake or coils	2	<ul style="list-style-type: none"> <li>• Indicate the start and completion date and time of the defrost exercise in the given record sheet.</li> <li>• Photo(s) of the internal ULT compartment before and after defrost exercise shall be sent via Email for verification.</li> </ul>
2	Good Management Practices ULT Clean out	1	<ul style="list-style-type: none"> <li>• Indicate the disposal measurement in terms of cubic meter and send the photo of the discarded items.</li> <li>• Photo(s) of the internal ULT compartment before and after clean out exercise shall be sent via Email for verification.</li> <li>• Indicate the oldest sample in the record sheet &amp; sent the photo via Email.</li> </ul>
3	Sample Inventory	1	<ul style="list-style-type: none"> <li>• Provide researcher, sample, sample date, experiment information on paper or file which have to be updated to the most recent sample additions and removal (@ least 90% complete inventory)</li> </ul>
4	Inventory barcoded	3	<ul style="list-style-type: none"> <li>• Photos of the barcoded storage containers, or display during collection of the power meter.</li> </ul>
5	Sharing (per additional PI), <u>max 8 points</u>	2	<ul style="list-style-type: none"> <li>• Photo(s) illustrating the demarcation of the shared ULT shall be sent via Email for verification. Photo of the ULT with names of the PI are also acceptable.</li> </ul>

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S/N	Practices Description	Pts	Actions and records required to be provided for the pts.
6	Temperature Tuning Chill Up! (per 10°C)	3	<ul style="list-style-type: none"> <li>Indicate the start date &amp; time of this practice in the record sheet.</li> <li>Indicate the power (in kWh) from the power meter display at the start of this practice. The photo of the LED display to be sent via Email (refer to <b>Annex B</b>)</li> <li>ULT which is already operating at -70°C will also be awarded with the points.</li> </ul>
7	DNA at -20°C	3	<ul style="list-style-type: none"> <li>Photos of the DNA in the -20°C freezer, or display during collection of the power meter.</li> </ul>
8	Scrap & Upgrade Retire and upgrade to an existing and better energy efficient ULT	4	<ul style="list-style-type: none"> <li>Photos of the replaced ULT, or display during collection of the power meter.</li> <li>Basic information of the ULT to be provided in the record sheet which can be found on the nameplate (commonly found on the side of the equipment, refer to <b>Annex B</b> for sample).</li> </ul>
9	Retire and upgrade to a new energy efficient ULT	6	<ul style="list-style-type: none"> <li>Photos of the new ULT, or display during collection of the power meter.</li> <li>Basic information of the ULT to be provided in the record sheet which can be found on the nameplate (commonly found on the side of the equipment, refer to <b>Annex B</b> for sample).</li> </ul>
10	Basic ULT deployment Operating space temperature of $\leq 25^{\circ}\text{C}$	1	<ul style="list-style-type: none"> <li>Verified by organiser.</li> </ul>
11	Store ULT in well ventilated space and away from heat sources	1	<ul style="list-style-type: none"> <li>Verified by organiser.</li> </ul>
12	No item(s) stored on top off or around the ULT.	1	<ul style="list-style-type: none"> <li>Verified by organiser.</li> </ul>

Energy efficient equipment – energy consuming appliance or equipment whose energy efficiency falls below the existing equipment or within the energy efficient rating which is available in the market.

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## Annex A

Illustration of the points award:

1. Baseline of an average 23 kWh/day calculated from **week 0 to X**.
2. Practice of item 1 to 8, 10 to 12 adopted and points award for the completed records and actions.
3. Total of 22 points given for the practices adopted.
4. Average of 15kWh/day is calculated from **week X to the final week**.
5. Therefore, a total of 30 points  $[(23 - 15) + 22]$  is awarded to the participant.

S/N	Practice	For Applicant recording and actions		Check <sup>1</sup>	By Organiser
1	Defrost & remove dust from intake or coils (2pts)	Start Date & Time [dd/mm/yy], [hh:mm]	Completed Date & Time [dd/mm/yy], [hh:mm]	<input checked="" type="checkbox"/>	
		13/03/18, 15:30	15/03/18, 09:30		
		<ul style="list-style-type: none"> <li>Photo(s) of the internal ULT compartment before and after defrost exercise shall be sent via Email for verification.</li> </ul>			
2	ULT Clean out (1pt)	Approx. Total disposal capacity:	0.3 m <sup>3</sup>	<input checked="" type="checkbox"/>	
		<ul style="list-style-type: none"> <li>Photo of the discarded items to be sent via Email</li> </ul>		<input checked="" type="checkbox"/>	
		<ul style="list-style-type: none"> <li>Photo(s) of the internal ULT compartment before and after <u>clean</u> out exercise shall be sent via Email for verification.</li> </ul>		<input checked="" type="checkbox"/>	
		Oldest Sample discarded:	Genome XX		
		From year: (mm/yyyy)	05/1992	Photo of the sample to be sent via Email.	
3	Sample Inventory (1pt)	<ul style="list-style-type: none"> <li>Provide researcher, sample, sample date, experiment information on paper or file which have to be updated to the most recent sample additions and removal (@ least 90% complete inventory)</li> </ul>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Inventory barcoded (3pt)	<ul style="list-style-type: none"> <li>Photos of the barcoded storage containers, or display during collection of the power meter.</li> </ul>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Sharing (per additional PI) (2pts, Capped max 8 pts)	<ul style="list-style-type: none"> <li>Photo(s) illustrating the demarcation of the shared ULT shall be sent via Email for verification. Photo of the ULT with names of the PI are also acceptable.</li> </ul>		<input checked="" type="checkbox"/>	
6	Chill Up! (per 10°C) (3pts)	Start Date & Time [dd/mm/yy], [hh:mm]	21/03/18, 17:00		
		Power (on the meter display) @ the start of this practice	608.2 kWh		
		The photo of the power value display (of the above) on the power meter to be sent via Email (refer to Annex B).		<input checked="" type="checkbox"/>	
7	DNA @ -20°C (3pts)	<ul style="list-style-type: none"> <li>Photos of the DNA in the -20°C freezer, or display during collection of the power meter.</li> </ul>		<input checked="" type="checkbox"/>	<input type="checkbox"/>

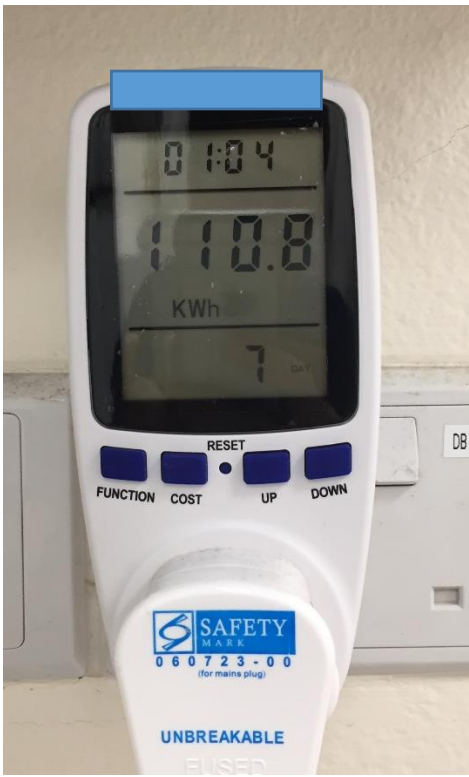
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S/N	Practice	For Applicant recording and actions	Check <sup>1</sup>	By Organiser
8	Retire and upgrade to an existing and better energy efficient ULT (4pts)	<ul style="list-style-type: none"> <li>Photos of the existing replaced ULT, or display during collection of the power meter.</li> </ul> <p>Following information can be found on the nameplate at the side of the equipment:</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Brand: <b>A</b> Model: <b>MEF-0305</b>		
		Serial No: <b>057493-91</b> Capacity: <b>375</b> Litres		
		Power: <b>12</b> kWh/day      Age: <b>3</b> year(s)		
9	Retire and upgrade to an existing and better energy efficient ULT (6pts)	<ul style="list-style-type: none"> <li>Photos of the existing replaced ULT, or display during collection of the power meter.</li> </ul> <p>Following information can be found on the nameplate at the side of the equipment:</p>	<input type="checkbox"/>	<input type="checkbox"/>
		Brand:      Model:		
		Serial No:      Capacity:      Litres		
		Power:      kWh/day		
10	Operating space temperature of $\leq 25^{\circ}\text{C}$ (1pt)	<ul style="list-style-type: none"> <li>Verified by ERI@N reps.</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11	Store ULT in well ventilated space and away from heat sources (1pt)	<ul style="list-style-type: none"> <li>Verified by ERI@N reps.</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12	No item(s) stored on top off or around the ULT. (1pt)	<ul style="list-style-type: none"> <li>Verified by ERI@N reps.</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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## Annex B

S/N	Description	Photo
1	Sample of the power display to be sent via Email for practice no 6 (Chill Up!) in clear resolution. (RHS photo will be changed after with the actual tag no on it)	
2	Example of a ULT nameplate.	