Bringing Efficiency to Light℠

DLC's DRAFT 1 Horticultural V1.2 Webinar

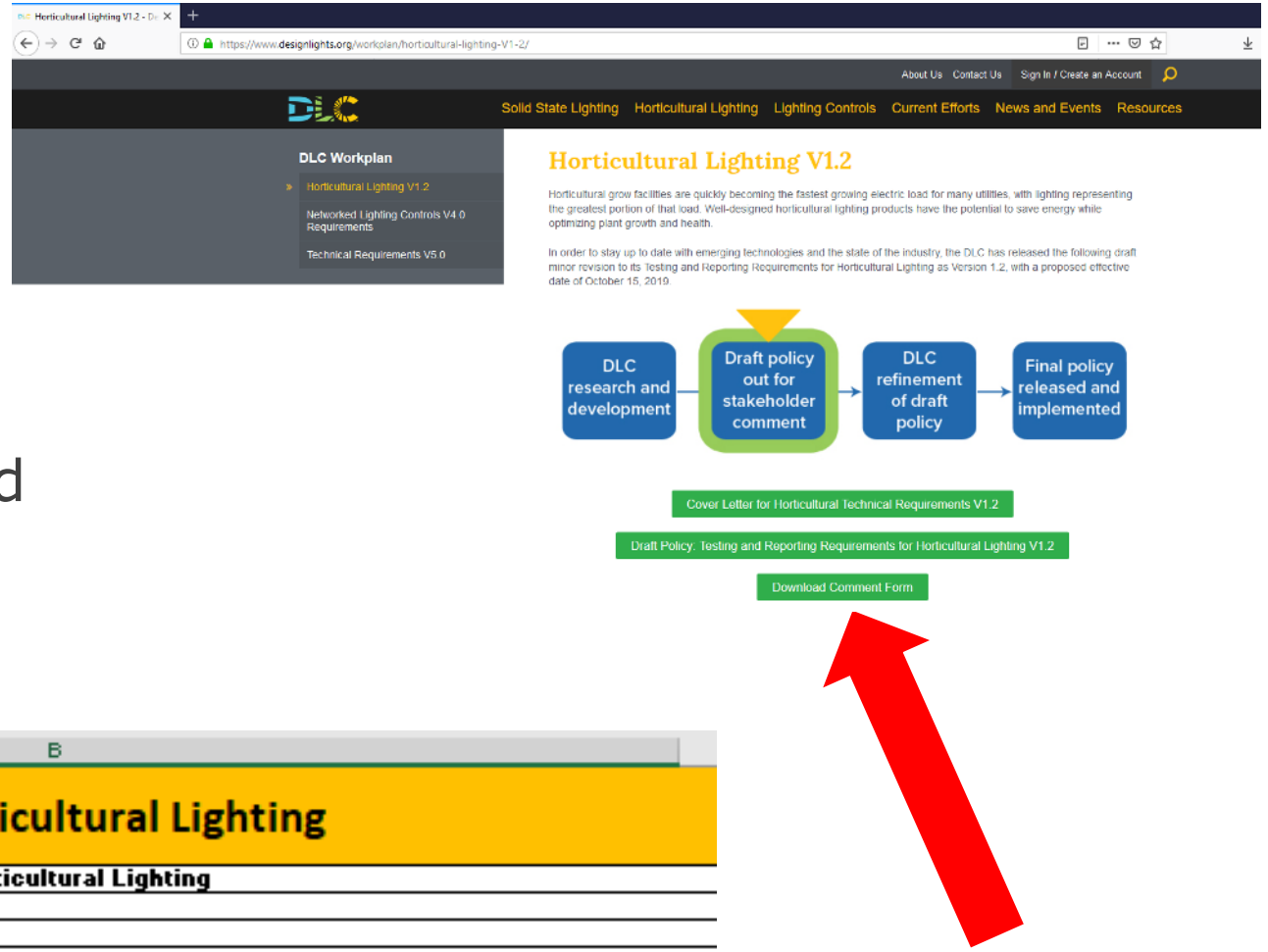
2019-08-06

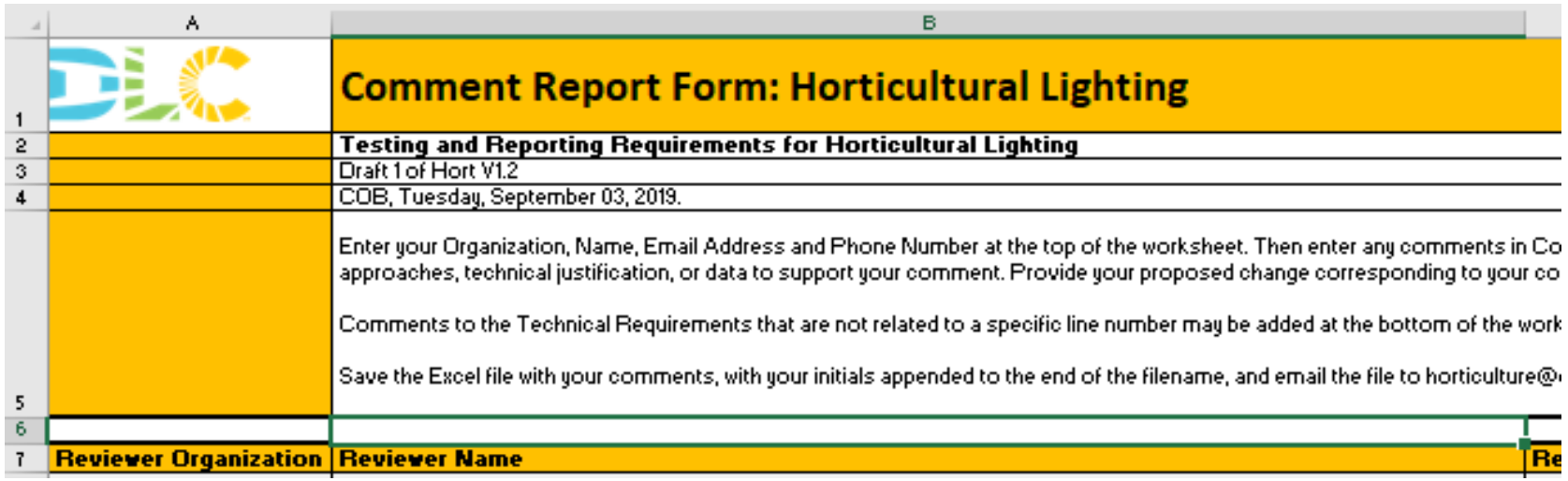
Bringing Efficiency to Light℠

- Slides will be posted on www.designlights.org after presentation
- Please use the GoToWebinar Interface (Question Pane) to ask questions during today's webinar
- Comments on Horticulture Draft 1 are due by September 03, 2019.

Comment Forms

The DLC now requires all comments to be submitted using DLC Comment Forms. Please download the Comment Form and submit the completed forms to horticulture@designlights.org





	A	B
1		Comment Report Form: Horticultural Lighting
2		Testing and Reporting Requirements for Horticultural Lighting
3		Draft 1 of Hort V1.2
4		COB, Tuesday, September 03, 2019.
5		Enter your Organization, Name, Email Address and Phone Number at the top of the worksheet. Then enter any comments in Co approaches, technical justification, or data to support your comment. Provide your proposed change corresponding to your co Comments to the Technical Requirements that are not related to a specific line number may be added at the bottom of the work Save the Excel file with your comments, with your initials appended to the end of the filename, and email the file to horticulture@
6		
7	Reviewer Organization	Reviewer Name

Agenda

- Welcome
- Intro to DLC & Its Spec Development
- Review Draft Spec
- Q&A

General DLC Development Process

DLC Collects and Aggregates Requests for Development and Revision from All Stakeholders

- Categorize by topic area
- Spec Development (new primary uses)
- Spec Revision (new performance thresholds)
- Policy Development
- Policy Revision

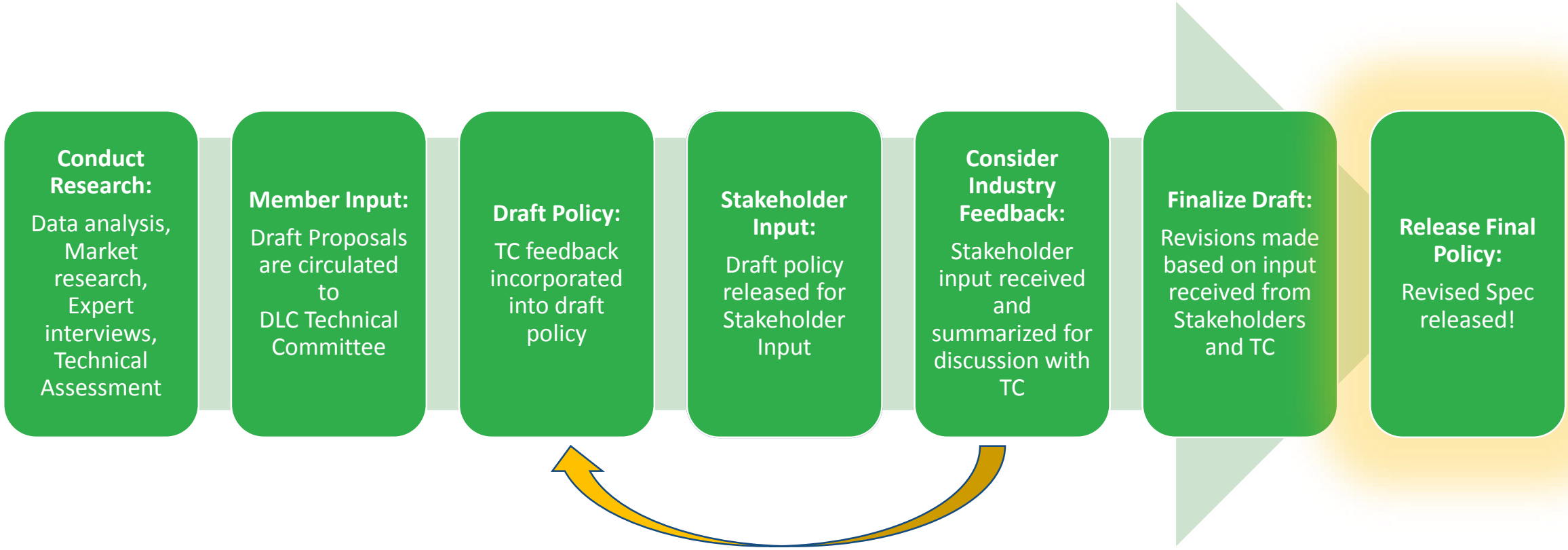
Requests Are Prioritized

- Active review with DLC Membership
- Input from Industry Stakeholders
- DLC capacity
- Alignment with DLC mission

Prioritized Tasks Are Undertaken for Research and Development

- Topic position, objectives, key considerations, and status published on DLC website: https://www.designlights.org/workplan/
- All major program changes undergo public comment period through DLC Stakeholder Input Process

Stakeholder Input Is Critical



What is the Project Plan/Timeline?

July 2019	• Draft of Hort V1.2 is released
September 2019	• Comments return, are processed
October 2019	• Hort V1.2 takes effect
Winter 2019-2020	• Custom product update process
April 2020	• Products without PPF-based LM-80 are delisted

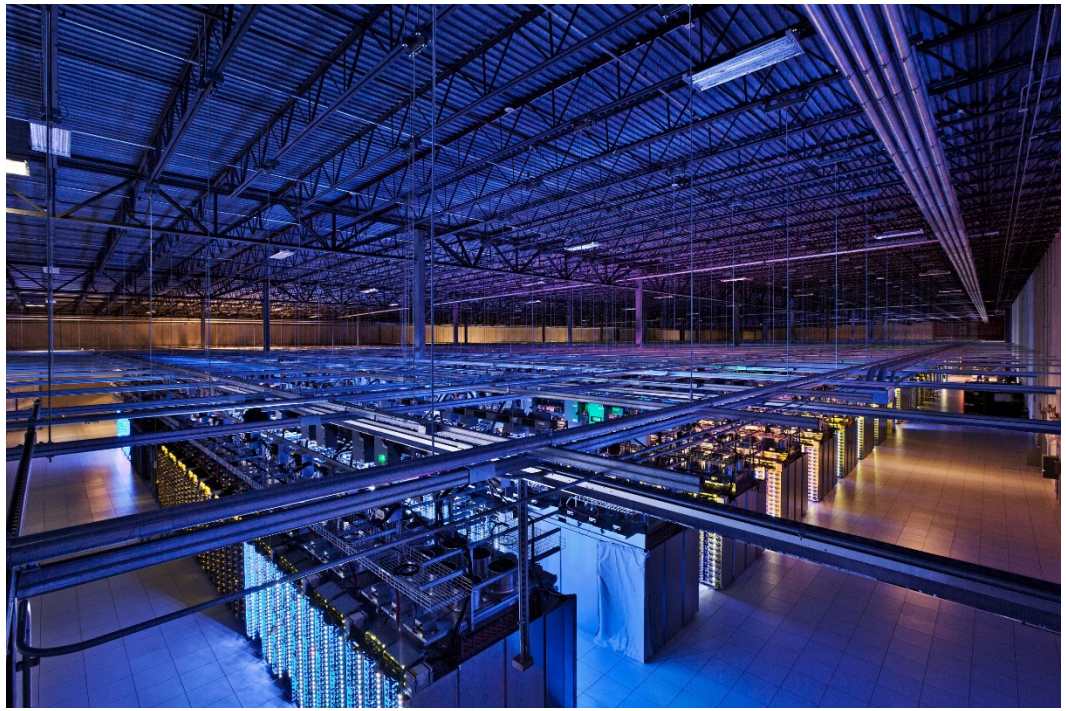
Review Draft Specification

Proposal 1: DC fixture eligibility

- Issue: How do we fairly compare the performance of DC and AC fixtures?
- Proposal: Fixture-based testing (LM-79, etc) occurs at the designed DC state. DLC will adjust **power** and **efficacy (PPE)** by a weighting factor. These updated values will be displayed on the QPL.
  - What is this weighting factor?
  - Luckily for us, others have already faced this issue and solved it!

Proposal 1: DC fixture eligibility

- The computer / data center industry has spent a decade optimizing 1-15 kW DC power supplies!
- 80 PLUS Standard
  - 80% market share
  - Mature manufacturing, testing infrastructure
  - Originating from ENERGY STAR work, 80PLUS is administered by CLEAResult, and operates an EPRI-devised test protocol.



Proposal 1: DC fixture eligibility

	115 V internal non-redundant					230 V internal redundant				
Percentage of rated load	10%	20%	50%	100%	Average	10%	20%	50%	100%	Average
80 Plus		80%	80%	80%	80%					
80 Plus Bronze		82%	85%	82%	83%		81%	85%	81%	82%
80 Plus Silver		85%	88%	85%	86%		85%	89%	85%	86%
80 Plus Gold		87%	90%	87%	88%		88%	92%	88%	89%
80 Plus Platinum		90%	92%	89%	90%		90%	94%	91%	92%
80 Plus Titanium	90%	92%	94%	90%	92%	90%	94%	96%	91%	94%

- Test your DC fixture at its designed max output, at its max input current.
- DLC picks a standard efficiency, and derates DC fixture performance during the application process. Efficacy goes down + power goes up.
- DLC members set a program requirement that remote DC powered fixtures must use a power supply of at least that same level on the 80PLUS list.
- Manufacturers see no increase in test complexity, lead time, or review cost.
- QPL users see a single, wall-plug-equivalent efficacy and power value for AC- and DC-powered fixtures

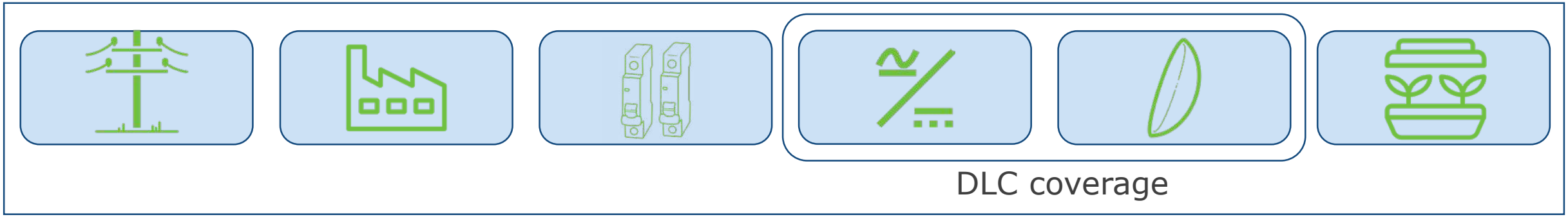
Proposal 1: DC fixture eligibility

$$Power_{AC} = \frac{Power_{DC}}{80PLUS\ Derating\ Factor}$$

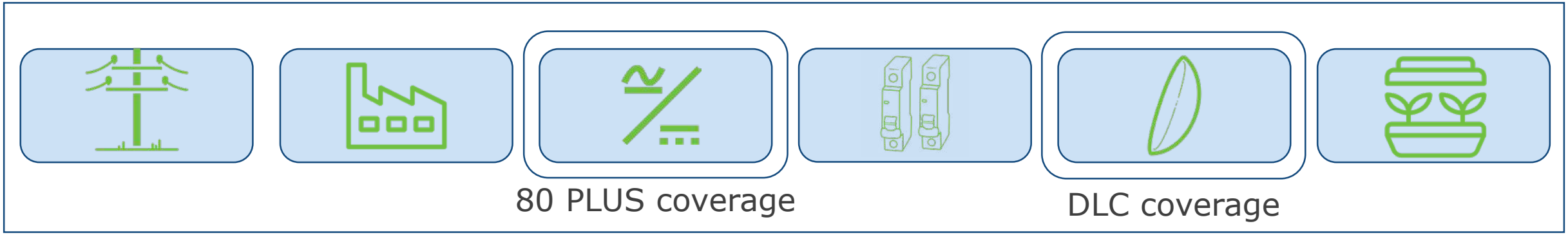
$$PPE_{AC} = PPE_{DC} * (80PLUS\ Derating\ Factor)$$

- The DLC proposes a Derating Factor of 92%, equal to the 80 PLUS Platinum performance level.
- ~30% of products in the 80 PLUS program have been Platinum in the last several years – a mature and high-volume supply is ready to be used.

Comparing AC – DC systems



AC-powered system



DC-powered system

Proposal 2: Continue with PPF-based LM-80 data

- Issue: How do we encourage the usage of appropriately measured performance characteristics?
- Proposal: Continue with the previously discussed plan to require LM-80 / -84 data in Hort-specific ranges (400-700nm, 700-800nm) to demonstrate flux maintenance.
  - DLC staff will contact manufacturers of previously listed products with non-PPF maintenance data from October-April to request updates. This will be a custom process, with details TBD.

Proposal 3: Delay requirement of TM-33 documents until Oct 2020 / Hort 2.0

- Issue: How can we provide PPID and SQD data in easy-to-use, interoperable formats?
- Proposal: TM-33 adoption is continuing, but is not widespread enough for DLC to require it in Oct 2019. We are going to continue our outreach to test labs and manufacturers to ensure it is ready by Oct 2020.

Summary

Thank You!

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Rosemary Mullane

Thank you!