# Integrating Sustainability into Module Procurement - the Role of Ecolabels and Standards

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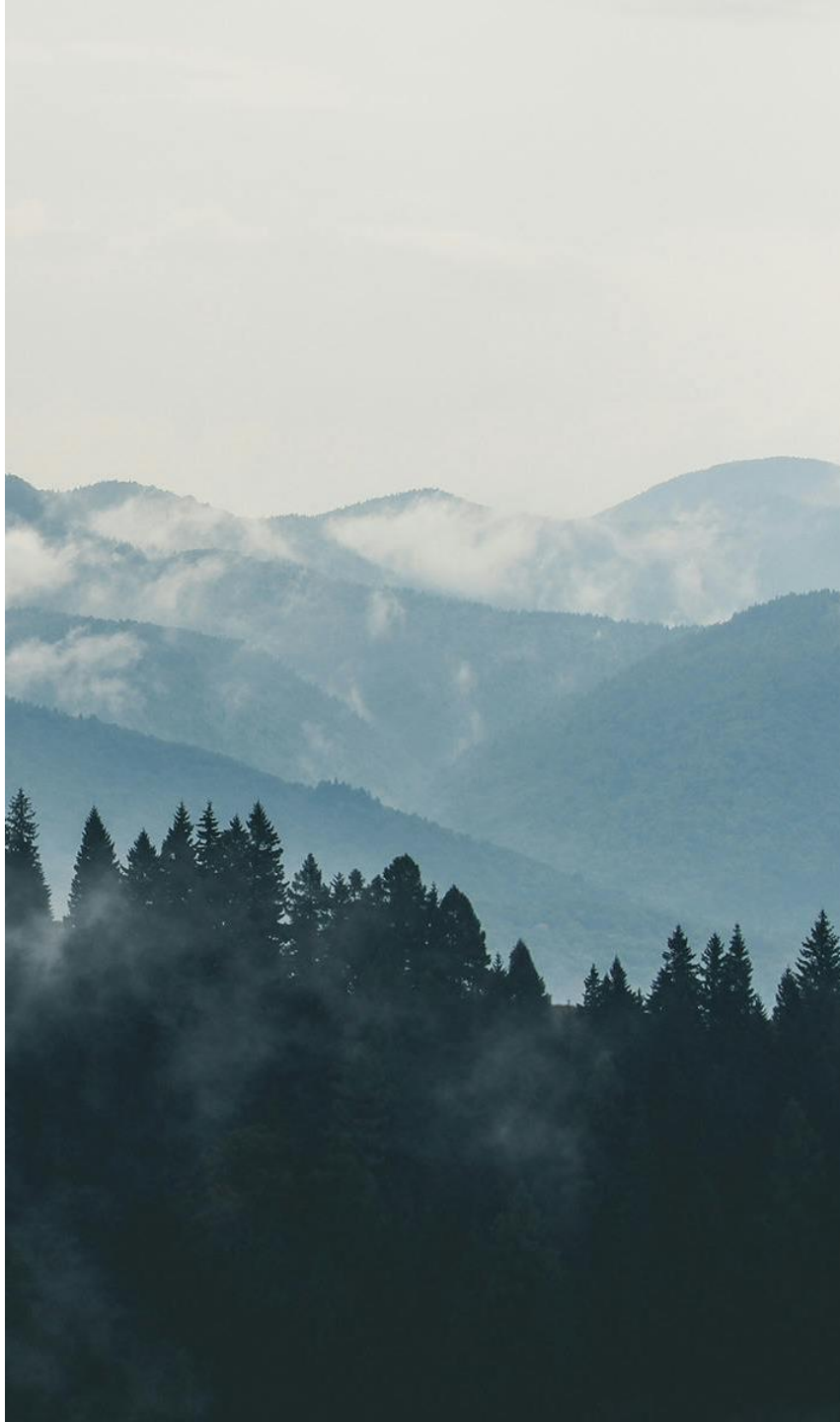
# Agenda

1. Introduction to Global Electronics Council (GEC)
2. Ecolabels & Sustainable Procurement
3. EPEAT Overview
4. EPEAT Tools for Procurement Professionals
5. Takeaways



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# Global Electronics Council

**As a mission-driven nonprofit, the Global Electronics Council® (GEC) accelerates the market for sustainable electronic technology products.**

Founded in 2006, GEC is an **independent, international, and impartial** nonprofit that empowers procurement professionals, policy makers, electronics brands, and other key stakeholders through a variety of engagements and offerings, including the **EPEAT ® ecolabel.**

**GEC Staff** are located in Belgium, Geneva, Canada, and the United States.

Volunteer, highly-diverse and non-industry representatives serve on the **GEC Board of Directors.**

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*Advancing Responsible Technology*

epeat®

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# Enabling Sustainable & Resilient Procurement


**Close to 300 million EPEAT registered products purchased annually in over 50 countries**

**12 Countries Each with Over $1 Billion in Annual EPEAT Purchases:**

- Brazil
- Canada
- Mexico
- USA
- France
- Germany
- Sweden
- UK
- Australia
- China
- India
- Japan

Estimated figures in US dollars. Based on 2022 purchaser self-reported data. Actual country figures may be higher.
Purchases occur in many other countries; only those with greater than $1 Billion are identified.

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# Ecolabels & Sustainable Procurement

# The Role of Ecolabels and Standards in Sustainable Solar Module Procurement

## What Are Ecolabels and Standards?

- **Ecolabels** are marks or certifications sometimes placed on products (including solar modules) to signify that they meet specific environmental and social criteria, independently verified by third parties
- **Sustainability standards** define the criteria for these ecolabels, covering aspects such as embodied carbon, hazardous substances, labor practices, recyclability, and more

***Ecolabels and sustainability standards are essential tools for ensuring that solar modules are produced and procured in ways that minimize environmental and social impacts.*** *Their use is increasingly recognized as critical for driving the solar industry toward greater transparency, reduced carbon footprints, and responsible supply chain practices.*

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# Why Are Ecolabels Important in Solar Module Procurement?

1. Simplifies Sustainable Purchasing
2. Reduces Environmental Impact
3. Drives Supply Chain Transparency and Decarbonization
4. Supports Regulatory and Policy Compliance
5. Mitigates Greenwashing
6. Fosters Innovation and Market Transformation

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# Why Should Buyers Trust Third-party Verified Ecolabels For Solar Modules And Inverters?

- These labels provide independent validation that a product meets specific environmental and sustainability standards, reducing the risk of greenwashing and misleading claims
- Third-party validation involves rigorous audits and verification by organizations **with no financial interest in the product**, ensuring that claims about sustainability, such as low embodied carbon or responsible sourcing, are credible and transparent
- This independent oversight increases the legitimacy of the ecolabel and gives buyers confidence that their procurement choices genuinely support environmental and social responsibility

*Third-party verified ecolabels facilitate confident purchasing decisions and help buyers differentiate between truly sustainable solar products and those with unsubstantiated claims.*

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# EPEAT – Credible By Design

# What Makes EPEAT Credible & Impactful

EPEAT is accredited as a Type 1 ecolabel, which are recognized by the United Nations Environment Programme as the most trustworthy in providing credible environmental and social benefits.

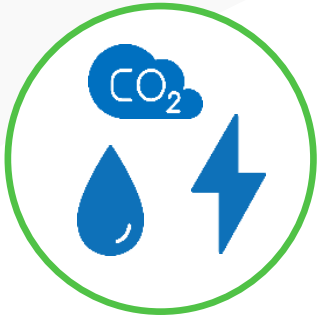
### Multi-stakeholder Consultation

For EPEAT, a cross-section of diverse stakeholders define criteria in a voluntary consensus process

### Full Life Cycle Impacts

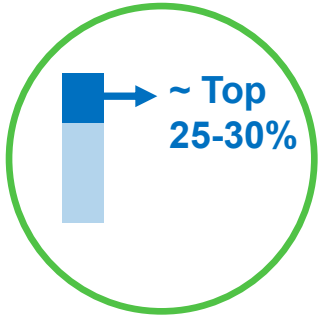
Criteria address sustainability impacts across the product life cycle from material extraction to end of life

### Science-Based




Criteria focus on priority impacts, based on evaluation of available science and evidence

### Leadership Performance




Criteria represent marketplace leadership

### Third-Party Verification

Independent verification ensures that products conform with criteria initially and on an ongoing basis

**To keep pace with change in the electronics space, criteria are reviewed on a regular schedule (every three years) to maintain leadership levels, tighten requirements where needed, and address new sustainability impact areas.**

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# GEC Criteria Development Process

**A balanced, voluntary consensus process that exceeds the requirements of ISO 14024 for Type 1 Ecolabels**


GEC Criteria Development Process (P74) is publicly available.

## Balanced, Voluntary Consensus Process

- Openness
- Balance of Interests
- Due process
- Appeals
- Consensus

## Stakeholder Participation

- IT brands/Manufacturers
- Other industry (supply chain, recyclers)
- Government Policy
- Civil Society / Sustainability Advocates
- Purchasers & Other Ecolabel Users

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# Expertise from Diversity of Stakeholders

## Manufacturers. Purchasers. Supply Chain. Sustainability Advocates. Government Policy.

50001 Strategies LLC
AMD
Armor Print Solutions
Brother
Californians Against Waste
Canon
Center for Resource Solutions
ChemFORWARD
Clean Production Action
Close the Loop
Clover Imaging Group
Cleveland Clinic
Commonwealth of Massachusetts
Consultant – Independent User
Covestro
Dell
Dynabook
ECOS
Electronics Watch
Epson
First Solar
Fujifilm
Fujitsu
Georgetown University
Google
Green America Green Science Policy Institute
Greentec International
Hewlett Packard Enterprise
HP
iFIXIT
Intel Corporation
International Imaging Technology Council
Information Technology Industry Council
Japan Business Machine and Information System Industries Association
Key Point Intelligence
Konica Minolta
Korsan Management Services
Kyocera
LandBell Group
Lawrence Berkeley National Laboratory
Lenovo
Lexmark
London Universities Purchasing Consortium
Maine Dept of Env. Protection
McGill University
Microsoft

Minnesota Pollution Control Agency
National Renewable Energy Laboratory (NREL)
National Resources Defense Council (NRDC)
Niagara Share
North American Electric Reliability Corporation (NERC)
Northwestern University
Noveon Magnetics
Panasonic
Recency Technologies
Responsible Business Alliance
Responsible Mineral Initiative
Ricoh
SABIC
Scottish Government
Scivera
SERI
Sharp
SGS
State of California, Dept of General Services
Strategy Advisory LLC
Toshiba
TPV
TÜV Rheinland
TÜV Rheinland Product LGA
U.S. Department of Defense
U.S. Department of Energy
U.S. DOE, Sustainable Acquisition Program
U.S. Department of Homeland Security
U.S. Environmental Protection Agency
U.S. General Services Administration
U.S. Green Building Council
U.S. National Institute of Standards and Technology
U.S. National Renewable Energy Laboratory
United Nations Environment Programme
University of California, Berkeley
Washington State Department of Ecology
World Bank
World Wildlife Fund
Xerox

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# EPEAT Criteria Beyond Carbon

## Climate

- **Low carbon thresholds & data reporting**
- Manufacturing energy efficiency
- F-GHG emissions in manufacturing
- Life cycle assessment

## Sustainable Resources

- Recycled content
- Design for recycling
- Product take back & responsible recycling
- Disclosure of recovery & recycling achievement
- Material recovery targets
- Efficient water use in manufacturing

## Chemicals of Concern

- Restricted substances in product - RoHS, REACH, halogenated substances
- List and disclosure of declarable substances in product & manufacturing
- Substance inventory
- Alternatives assessment

## Corporate Performance

- Social performance & audits
- Worker health & safety
- EMS
- Responsible mineral sourcing
- Corporate reporting
- Hot spot identification & leadership compared to industry

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# EPEAT Low Carbon Solar Criteria

**Low Carbon Solar**

**Required:** The embodied carbon of the PV module shall be equal to or less than **630** kg $CO_{2e}$/kWp.

*~20% below IEA global average data*

**Ultra Low Carbon Solar**

**Optional:** The embodied carbon of the PV module shall be equal to or less than **400** kg $CO_{2e}$/kWp.

*Best in class lowest reported emissions*

**Publicly Available LCI Data**

**Optional:** Primary life cycle inventory data underlying alternative GWP coefficients shall be publicly available.

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# EPEAT Tiers – Incentivizing Innovation


Meets all Required Criteria **AND**
Up to 50% of Optional Criteria


Meets all Required Criteria **AND**
At least 50% of Optional Criteria


Meets all Required Criteria **AND**
At least 75% of Optional Criteria

- Required criteria address all key sustainability impacts across the lifecycle of the product
- Products MUST meet all required criteria to obtain EPEAT Bronze
- EPEAT Bronze products represent sustainability leadership
- Optional Criteria create a race to the top– they incentivize innovation

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# Public Comment Period Open: Draft EPEAT Criteria for PVMI Full Criteria Revision

by Erica Terek | November 18, 2025 | News

GEC released its DRAFT EPEAT Criteria for its Photovoltaic Modules and Inverters (PVMI) Full Criteria Revision on November 18, 2025. The public comment period — open for 60 days — is an opportunity for all interested stakeholders to provide technical comments on the draft criteria revision. These criteria are intended to address the life cycle sustainability impacts identified in the State of Sustainability Research for Photovoltaic Modules and Inverters (PVMI) and to recognize the leaders in sustainability performance.

EPEAT registered PVMI products are required to meet applicable criteria in 2 documents: *GEC-PVMI-202X (the former NSF-457 standard)* and *Criteria for the Assessment of Ultra-Low Carbon Solar Modules (ULCS).*

Prioritized updates for the full revision of the EPEAT PVMI criteria in *GEC-PVMI-202X (former NSF-457* include, but are not limited to:

- Enhanced circularity criteria for responsible end-of-life and durable product design
- Enhanced corporate responsibility criteria for supply chain tracing to confirm facilities are not in regions where independent third-party audits cannot be performed as part of a credible forced labor due diligence process in alignment with the United Nations Guiding Principles on Business and Human Rights (UNGPs).

Prioritized updates for the EPEAT PVMI criteria in the *Ultra-Low Carbon Solar Modules (ULCS)* document (published in March 2023) include formal Technical Committee adoption of Interim Corrections approved by a balanced voluntary consensus Interim Corrections Committee in December 2024. These corrections are intended to facilitate effective and efficient implementation and conformity assurance. Given the relative newness of this document, GEC is not proposing to change the methodological approach at this time.

NSF International manages the public comment process on behalf of GEC. Comments must be submitted **by 11:59 pm ET on January 18, 2026** using the NSF Online Workspace, available here:

- PVMI for Public Comment
- ULCS for Public Comment
- NSF Public Workspace Link (can sort by "Groups")

[Public Comment Period Open Link]

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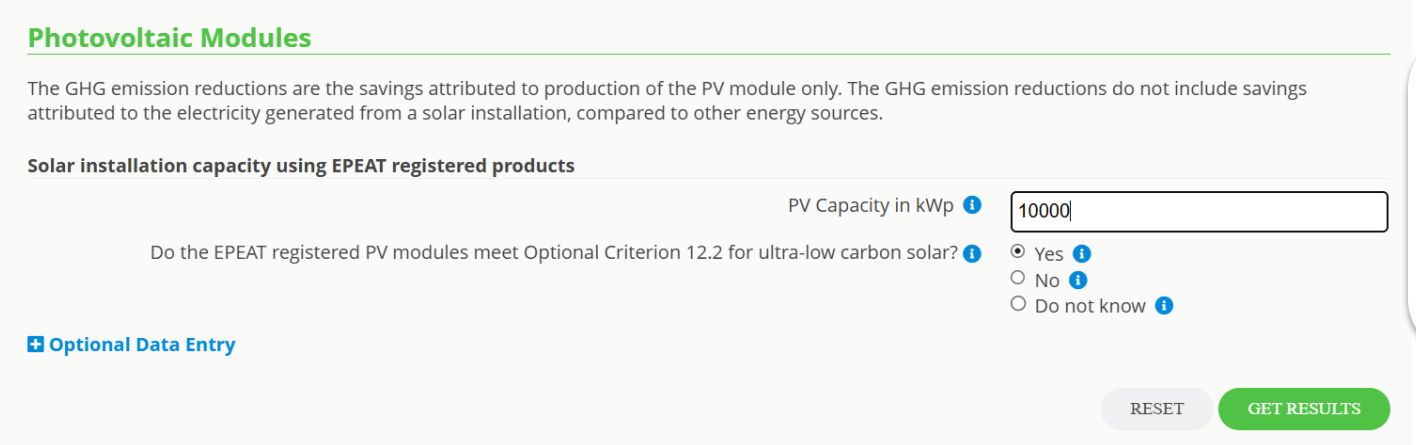
# EPEAT Tools for Procurement Professionals

# Support for Buyers

- **EPEAT Registry for Ultra Low-Carbon Solar Modules:** EPEAT Registry is a trusted database of solar modules with ultra-low carbon footprints, enabling buyers to select products that support decarbonization and meet strict environmental standards.
- **Guides for Writing Traceability into Procurement:** Practical resources with best practices and sample language to embed supply chain transparency requirements into RFPs and contracts, ensuring ethical sourcing and compliance.
- **Environmental Benefits Calculator:** A tool that quantifies the lifecycle environmental impact of solar products, helping stakeholders compare options and communicate clear sustainability benefits.

Benefits Calculator Example




**10,000** PV Capacity in kWp
=
Greenhouse gas emissions reduction of **4,570** metric tons (kg $CO_2$ eq)

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RETURN TO SEARCH

# Series 6 Plus

PHOTOVOLTAIC MODULES AND INVERTERS

## Product Summary:

| | |
|---|---|
| Product Type: | Photovoltaic modules |
| Registered In: | Latvia |
| Manufacturer: | First Solar, Inc. |
| EPEAT Tier: | Silver |
| Registration Date: | 2021-12-13 |
| Product Status: | Active |
| EPEAT Climate+: | Achieved 2024-06-03 |
| Manufacturer Part Number(s): | FS-6XXXA-P, FS-6XXXA-P-I, FS-6X |

The optional criteria for this product category and optional points achieved by this product are listed below.

| Optional Criteria | Scores |
|---|---|
| 5. Management of Substances | 5 / 9 |
| 6. Preferable materials use | 0 / 4 |
| 7. Life cycle assessment (LCA) | 6 / 6 |
| 8. Energy efficiency and water use | 3 / 9 |
| 9. End of life management & design for recycling | 4 / 4 |
| 10. Product packaging | 0 / 2 |
| 11. Corporate responsibility | 4 / 8 |
| 12. Ultra Low Carbon Solar | 4 / 5 |
| TOTAL OPTIONAL CRITERIA SCORE: | 26 / 47 |

[See full example here]

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# Photovoltaic Modules and Inverters Product Category Required Criteria

All EPEAT Photovoltaic Modules and Inverters Products must meet, at a minimum, the following required criteria.

| | |
|---|---|
| (5.1.1) | List of declarable substances |
| (5.1.2) | List of declarable substances used in manufacturing |
| (5.2.1) | Disclosure of substances on the European Union REACH Regulation Candidate List of Substances of Very High Concern (SVHC) |
| (5.2.5) | Avoidance or reduction of high global warming potential (GWP) gas emissions |
| (5.2.6) | Conformance with provisions of European Union RoHS Directive |
| (6.1.1) | Declaration of recycled content in product |
| (7.1.1) | Conducting LCA |
| (8.1.4) | Weighted efficiency reporting |
| (8.1.5) | Tare loss reporting |
| (8.2.1) | Water inventory |
| (9.1.1) | Product take-back service and processing requirements |
| (10.1.1) | Elimination of substances of concern in product packaging |
| (10.1.2) | Elimination of chlorine in processing packaging materials |
| (10.2.1) | Enhancing recyclability of packaging materials |
| (11.1.1) | Environmental management system (EMS) certification |
| (11.1.2) | Manufacturer conformance with occupational health and safety performance |
| (11.2.1) | Reporting on key performance indicators |
| (11.3.1) | Commitment to environmental and social responsibility |
| (11.4.1) | Public disclosure of use of conflict minerals in products |
| (12.1) | Low Carbon Solar |

[Scoring for Optional Criteria Example]

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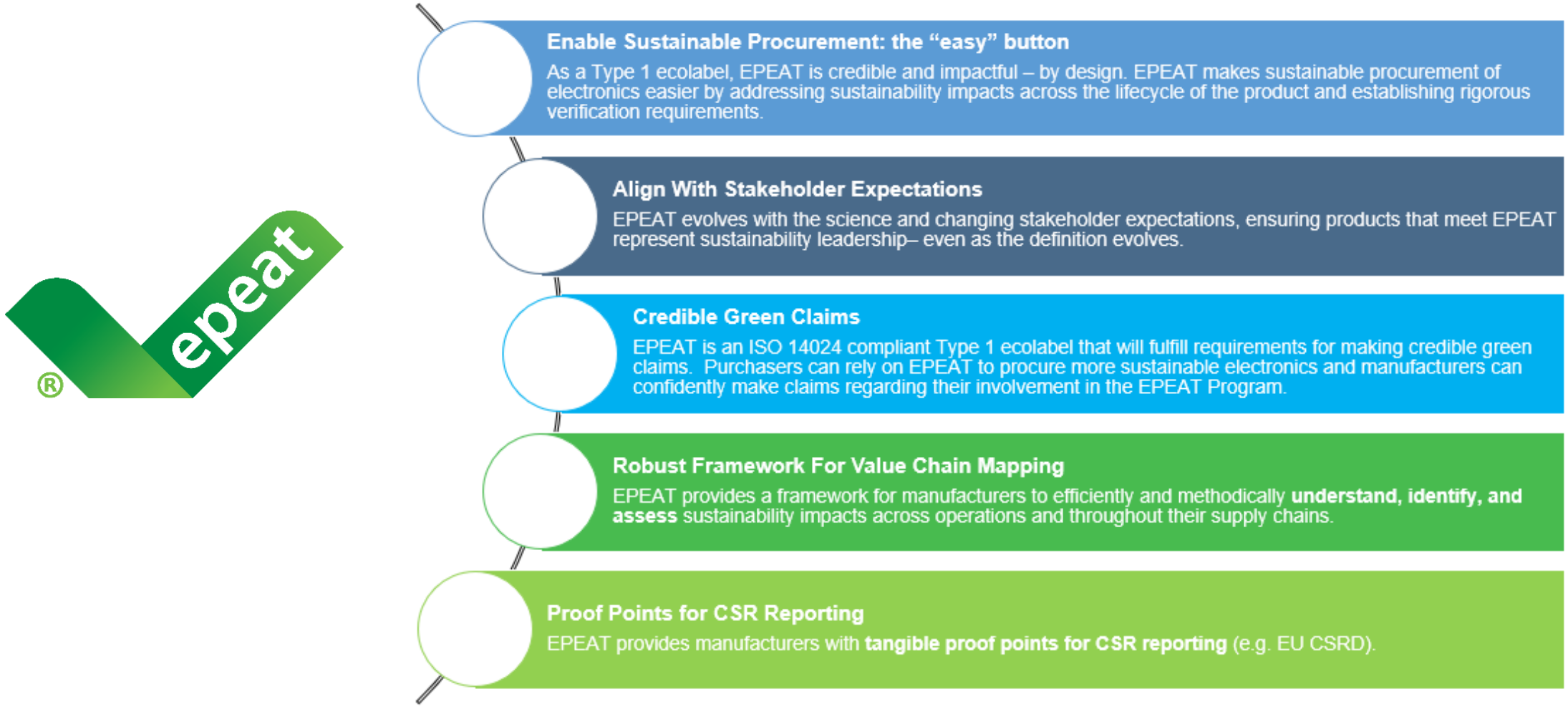
# Summary

# A Competitive Advantage that Addresses Market Needs

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# Contact Us

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