



# IEEE P2814

## Recommended Practices on Techno-economics Terminology for Hybrid Energy and Storage Systems

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**Date: December 11, 2019**

Time: 12:00 PM (GMT)

Venue: [join.me](https://join.me)

# Agenda

1. Call to Order
2. Roll call of individuals & declaration of affiliation
3. Approval of agenda
4. IEEE Patent Policy
5. Approval of the minutes of the last meeting
6. Continuing discussions on scope and boundaries of the PAR
7. Appointment of officers (Vice-Chair)
8. AOB
9. Future meetings
10. Meeting adjourned

## Participants have a duty to inform the IEEE

- Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
- Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims

**Early identification of holders of potential  
Essential Patent Claims is encouraged**

# Ways to inform IEEE

- **Cause an Letters of Assurance (LOA) to be submitted to the IEEE-SA (patcom@ieee.org); or**
- **Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or**
- **Speak up now and respond to this Call for Potentially Essential Patents**

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

# Other guidelines for IEEE WG meetings

- **All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.**
  - **Don't discuss the interpretation, validity, or essentiality of patents/patent claims.**
  - **Don't discuss specific license rates, terms, or conditions.**
    - Relative costs of different technical approaches that include relative costs of patent licensing terms may be discussed in standards development meetings.
      - **Technical considerations remain the primary focus**
  - **Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.**
  - **Don't discuss the status or substance of ongoing or threatened litigation.**
  - **Don't be silent if inappropriate topics are discussed ... do formally object.**

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For more details, see *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and *Antitrust and Competition Policy: What You Need to Know* at <http://standards.ieee.org/develop/policies/antitrust.pdf>

# Patent-related information

The patent policy and the procedures used to execute that policy are documented in the:

- ***IEEE-SA Standards Board Bylaws***  
(<http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6>)
- ***IEEE-SA Standards Board Operations Manual***  
(<http://standards.ieee.org/develop/policies/opman/sect6.html#6.3>)

Material about the patent policy is available at  
<http://standards.ieee.org/about/sasb/patcom/materials.html>

**If you have questions, contact the IEEE-SA  
Standards Board Patent Committee  
Administrator at [patcom@ieee.org](mailto:patcom@ieee.org)**

# Working Group

- **Sponsoring Society and Committee:**
  - IEEE Systems, Man and Cybernetics Society
  - Sponsor Chair: Prof Loi Lei Lai (P. R. China)
- **WG Chair:** Dr Chun Sing Lai (UK)
- **WG Vice Chair:** Vacant
- **WG Secretary:** Mr Michael Sanders (USA)
- **IEEE Program Manager:** Ms Christy Bahn (USA)

# Approval of the minutes of the last meeting

<https://sagroups.ieee.org/2814/>



# Scope

- This standard defines techno-economic terminologies used in the **development, construction, and operation** of renewable energy and electrical energy storage systems

# Discussions from last meeting

- Considering **disposal and removal of components** when considering the cost function of the life cycle. Currently not well emphasized. The **present scope is too broad**. We need to better define the **boundaries**, for example, green-house gas impacts.
- Focus on **specific technologies**, e.g. for batteries will be Lithium-ion and lead-acid. To define applications of storage in techno-economic appraisals. For example, **electric vehicles and stand-alone systems**.

# Discussions from last meeting

- To consider different applications of technologies in drafting the standard. Techno-economics can be very different for stages of technology development, including **research & development**, **first-of-a-kind**, and **commercial systems**. Industry standard and academic standard can be different.
- Primary energy supply security; **security and stability** of electricity delivery are issues with current power systems. We need to consider storage in “**direct**” and “**indirect**” methods. Direct method includes integration of storage with energy production resources. Fuel and thermal is an example of indirect storage. Applications include combined heat cooling power production using gas storage with thermal storage to provide electricity storage.

# Some thoughts on scope and boundaries

- Important when defining terms to think of not only direct, but **indirect metrics (e.g. social costs)** of analysis and system effects
- Metrics should endeavor to include **social and qualitative means** of measuring these effects at better reaching politics and laypeople at a non-monetary level as well.
- Does the least cost (\$/kWh) means the most economic?  
Not necessary!

# Some thoughts on scope and boundaries

- **Emissions as means of pay-off (suggested by Michael Tobey)**, GHG saved, e.g. When considering between energy sources, or storage, the cost of replacing existing ones and the pay off period for GHG
- A holistic metric to measure reliability, cost, sustainability, smartness, resilience, and security?
- Circular economy? Economic system to eliminate waste and continual use of resources
- Find a balance between complexity and coverage of the developed metrics
- Open the floor for discussion

# Structure of Standard

- 1. Overview (recommended practices), scope and purpose
- 2. Normative references (related standards)
- 3. Definitions (terms and nomenclature)
- 4. Need for the Recommended Practice, context of problems, outline of the recommended practice
- 5. Methodology
- 6. Examples of application of the methodology
- 7. Bibliography

# P2814 status

- IMPORTANT DATES
- PAR Request Date: 14 Feb 2019
- PAR Approval Date: 21 May 2019
- PAR Expiration Date: 31 Dec 2023

# Tasks

- Structuring the scope and boundaries of the PAR
- Initial Draft document – (important to establish the ideas that fired the proposal)
- Vice-Chair position
- Meeting (join me, approx. every 1-2 months)



# Vacant voluntary positions available

- **Vice Chair:** assists the Chair in all areas, including running the meeting when the Chair is absent or wishes to recuse themselves.

Ref: <https://standards.ieee.org/develop/mobilizing-working-group/governedwg.html>

# Conclusion

- Send us your interest in volunteering positions (personal statement and CV)
  - AOB
  - Schedule of the next teleconference: Feb 2020, Time TBD
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- Thank you for your interest and participation in this WG!

# Contacts

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