

IEEE P2814: RECOMMENDED PRACTICES ON TECHNO-ECONOMICS TERMINOLOGY FOR HYBRID ENERGY AND STORAGE SYSTEMS

IEEE SYSTEMS, MAN, AND CYBERNETICS SOCIETY/
STANDARDS COMMITTEE (SMC/SC)

JUNE 26, 2020

TIME: 01:00 PM (UTC+1)

Teleconference: Cisco Webex

AGENDA

1. Call to Order
2. Roll Call & Declaration of Affiliation
3. Approval of Agenda
4. IEEE Patent Policy: <https://mentor.ieee.org/myproject/Public/mytools/mob/slideset.ppt>
5. IEEE Copyright Policy: <https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/copyright-policy-WG-meetings.potx>
6. Approval of the minutes of the last meeting
7. Framework and methodology
8. AOB
9. Future Meetings
10. Meeting Adjourned

IEEE PATENT POLICY

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

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- IEEE SA's copyright policy is described in Clause 7 of the IEEE SA Standards Board Bylaws and Clause 6.1 of the IEEE SA Standards Board Operations Manual;
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 - IEEE SA Best Practices for IEEE Standards Development
 - http://standards.ieee.org/develop/policies/best_practices_for_ieee_standards_development_051215.pdf
 - Distribution of Draft Standards (see 6.1.3 of the SASB Operations Manual)
 - <https://standards.ieee.org/about/policies/opman/sect6.html>

WORKING GROUP COMMITTEE

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: Dr Dongxiao Wang (Australia)

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

STRUCTURE OF STANDARD

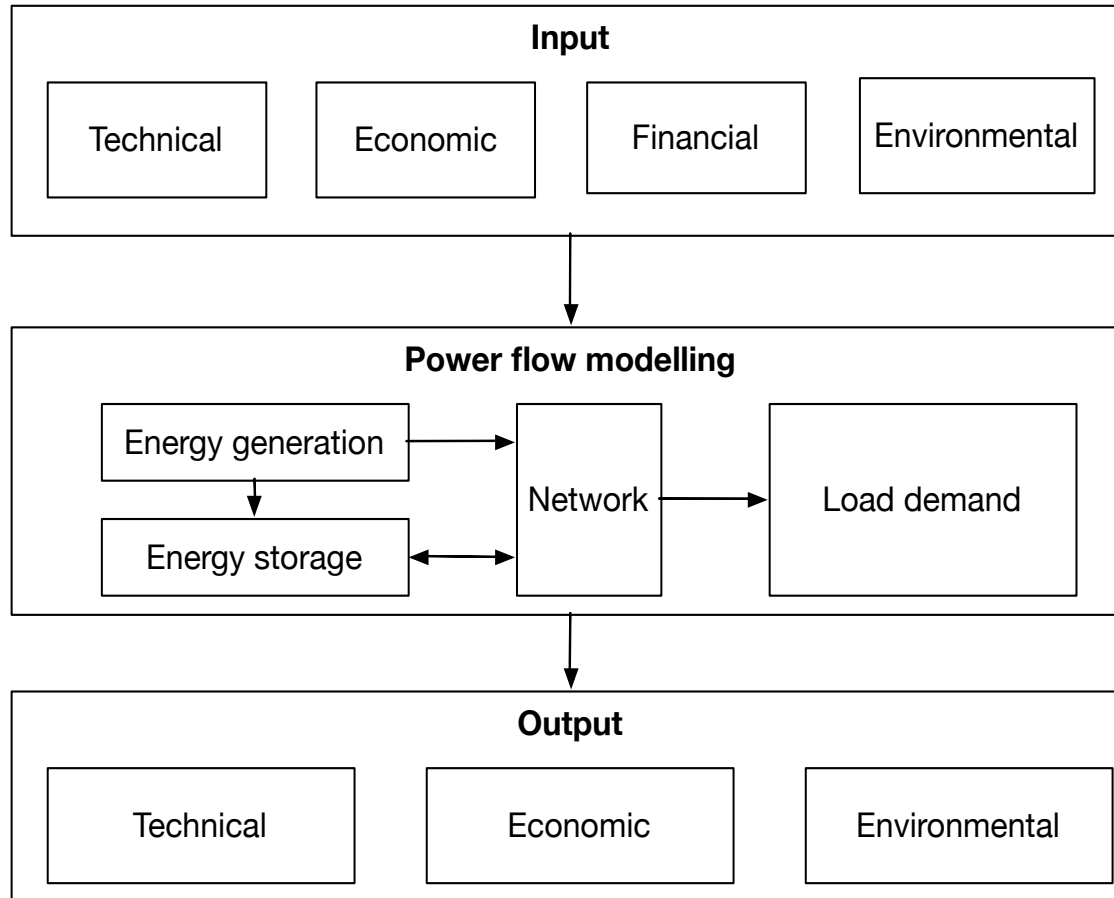
1. Overview (recommended practices), scope and purpose
2. Normative references (related standards)
3. Definitions (terms and nomenclature)
4. Need for the Recommended Practice, context of problems, outline of the recommended practice
5. Methodology
6. Examples of application of the methodology
7. Bibliography

TIME SCALE AND ENERGY SYSTEM

	Adequacy		Arbitrage	Reserve and Reponse
Task	Generation, transmission, and distribution planning	Generation and storage scheduling	Generation, storage, and demand side response scheduling	System balancing
Time scale	Years prior delivery	Months to days prior delivery	One-day to one-hour prior delivery	Real-time

Energy supply and demand balancing

TEA FRAMEWORK FOR P2814



INPUT

- **Define unit of analysis: Storage or generator? Or combination of both?**
- **Define cost types (examples from literature, capital cost, operating cost, decommissioning cost)**
- **Define technical types (efficiency, power rating, energy rating)**
- **Library of energy storage options for study**
- **General financing conditions to be considered to calculate discount rate from cost of debt, cost of equity (examples from literature)**

METHODOLOGY

- **Recommended Practices for techno-economic analysis**
- **Timeframe for the analysis (recommended practices for different sampling interval in techno-economic studies e.g. context)**
- **Define the power flow modelling approach (distribution network) for techno-economic studies**

OUTPUT

- **Focus on techno-economic metrics**
- **Technical metrics**
 - ❖ Resilience,
 - ❖ Loss of load probability,
 - ❖ Power quality (voltage and load management),
 - ❖ Reliability etc.
- **Economic metrics**
 - ❖ LCOE
 - ❖ NPV

CASE STUDIES

1. EV charging
2. Comparison of energy storage methods (e.g. generation integrated energy storage)
3. Virtual power plant
4. Controllable load and demand response programs, e.g. air conditioners and heat pumps
5. Multi-vector energy systems

P2814 STATUS

IMPORTANT DATES

PAR Request Date: 14 Feb 2019

PAR Approval Date: 21 May 2019

PAR Expiration Date: 31 Dec 2023

TASKS

- **Begin data collection and confirming the methodology**
- **Initial Draft document**
- **Meeting (Webex, approx. every 1-2 months)**
- **Schedule of the next teleconference: August 2020, Time TBD**

THANK YOU

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