

## Sustainable Infrastructures & Community Development Program Industry Connections Activity Initiation Document (ICAID)

Version: 1.0, 1 September 2020

IC20-014-01 Approved by IE&SS SMDC 8 October 2020

### Instructions

- Instructions on how to fill out this form are shown in red. It is recommended to leave the instructions in the final document and simply add the requested information where indicated.
- **Shaded Text** indicates a placeholder that should be replaced with information specific to this ICAID, and the shading removed.
- Completed forms, in Word format, or any questions should be sent to the IEEE Standards Association (IEEE-SA) Industry Connections Committee (ICCom) Administrator at the following address: [industryconnections@ieee.org](mailto:industryconnections@ieee.org).
- The version number above, along with the date, may be used by the submitter to distinguish successive updates of this document. A separate, unique Industry Connections (IC) Activity Number will be assigned when the document is submitted to the ICCom Administrator.

### 1. Contact

Provide the name and contact information of the primary contact person for this IC activity. Affiliation is any entity that provides the person financial or other substantive support, for which the person may feel an obligation. If necessary, a second/alternate contact person's information may also be provided.

**Name:** Roger Fujii

**Email Address:** rogerfujii@cox.net

**Employer:** Self

**Affiliation:** Self

LEADERSHIP: Roger Fujii (chair), Maike Luiken and Bruno Meyer (co-vice chairs)

IEEE collects personal data on this form, which is made publicly available, to allow communication by materially interested parties and with Activity Oversight Committee and Activity officers who are responsible for IEEE work items.

### 2. Participation and Voting Model

Specify whether this activity will be entity-based (participants are entities, which may have multiple representatives, one-entity-one-vote), or individual-based (participants represent themselves, one-person-one-vote).

Individual Based

### 3. Purpose

#### 3.1 Motivation and Goal

Briefly explain the context and motivation for starting this IC activity, and the overall purpose or goal to be accomplished.

The drive towards a more sustainable infrastructure and electrotechnical industry continues to accelerate globally. Infrastructure in the context of this ICAID includes energy, communications, transportation and other key industry verticals. The electrotechnical aspects of this initiative include the design, manufacture and disposal aspects of the proliferation of electrical products in support of the forementioned verticals, as well as consumer focused products. IEEE has numerous activities and volunteers addressing various aspects in support of sustainability transformation, however there is no dedicated IEEE community, and does not have the public visibility, nor a holistic program that provides thought leadership and highlights critical contributions to addressing these issues, despite the underlying expertise of our membership.

This Industry Connections program is intended to support the creation of a broad global and active community. It should also provide a formalized focal point for program activities, information and available expertise across the wide range of IEEE initiatives and standards associated with sustainable infrastructure and design, power sector transformation, and energy efficiency. In the mid or long run, it is envisioned that an IEEE council, community or other construct will be most organizationally advantageous, thus this activity is intended to serve as an incubator to develop the community, initiate a public presence, and develop roadmaps and action plans to deliver the IEEE-wide technical expertise in support of these transformative goals.

### **3.2 Related Work**

Provide a brief comparison of this activity to existing, related efforts or standards of which you are aware (industry associations, consortia, standardization activities, etc.).

**IEEE Sustainable Development Task Force (SDTF)** – this IC activity has been inspired by discussions within the IEEE SDTF on broader IEEE engagement in sustainability activities (education, global development, etc.). As a sub-topic of the larger sustainability vision, the IC activity will coordinate and participate with the SDTF (and this activity may take on operational aspects of SDTF concepts as needed).

**Global Power Systems Transformation Consortium** – IEEE (primarily PES and SA) are engaged as a member of this global consortium that is engaged with acceleration of renewables, particularly in developing nations, and in collaboration with power system operators globally.

**IEEE Sustainable ICT Initiative** - Launched in early 2015 through the support of the IEEE Future Directions' new initiatives committee, the Sustainable ICT initiative's mission statement has been defined as to *build a holistic approach to sustainability through ICT by incorporating green metrics throughout IEEE technical domains*. The Initiative has submitted 9 PARs.

### **3.3 Previously Published Material**

Provide a list of any known previously published material intended for inclusion in the proposed deliverables of this activity.

There are numerous IEEE published papers, standards, presentations, etc. that are relevant to sustainable infrastructure, power sector transformation and related topics. These will be considered with some level of curation to support this activities deliverables and the establishment of IEEE leadership and public visibility.

### **3.4 Potential Markets Served**

Indicate the main beneficiaries of this work, and what the potential impact might be.

- Power sector system operators and their suppliers
- National/regional government ministries and policy makers
- Energy sector regulators
- Electronic design and manufacturing stakeholders

### **3.5 How will the activity benefit the IEEE?**

This program provides IEEE the opportunity to be recognized as a global thought leader in sustainability, and enhances the value and visibility of the technical work and contributions of the numerous IEEE member experts working in these fields. Through the open community building it will attract new members, in particular from younger generations. In parallel, it is envisioned that bringing these activities together in this comprehensive and cohesive program, new opportunities will be identified for conferences, publications and standards that provide targeted technical information addressing identified “glocal” needs.

## **4. Estimated Timeframe**

Indicate approximately how long you expect this activity to operate to achieve its proposed results (e.g., time to completion of all deliverables).

**Expected Completion Date:** 09/2022; this activity will be ongoing at IEEE, hence an ideal goal will be to “graduate” the activity to a broader formal construct within the larger IEEE. If more time is necessary to make that transition, a renewal of this activity as a program of Industry Connections will serve as an alternate path.

IC activities are chartered for two years at a time. Activities are eligible for extension upon request and review by ICom and the IEEE-SA Standards Board. Should an extension be required, please notify the ICom Administrator prior to the two-year mark.

## **5. Proposed Deliverables**

Outline the anticipated deliverables and output from this IC activity, such as documents (e.g., white papers, reports), proposals for standards, conferences and workshops, databases, computer code, etc., and indicate the expected timeframe for each.

- Definition of the scope of the initiative and organization of the program with sub-tending focus (workstream) areas, and assignment of working group volunteer leads – sustainable infrastructure and energy is a very broad topic so determination of in-scope and out of scope needs to be defined via consensus upfront to avoid scope creep and dilution of progress. New areas can be discussed and entered over time. (Target completion December 2020) Candidate focus areas may include:
  - Large scale renewable integration
    - Building on IEEE participation in the Global Power Systems Transformation Consortium, IEEE focused initiatives will build upon and complement GPSTC goals and deliverables
  - Circular economy and sustainable electronics design

- The IEEE SA E-waste Opportunity Assessment identified the lack of reusable packaging standards as one of the obstacles to improving the environmental footprint of electronics packaging, while at the same time highlighting the benefits of 3D printing for the manufacture of electronics components to reduce waste, packaging, and the cost of disassembly. The IEEE Electronics Packaging Society will be invited to participate in the drafting and submission of one or more PARs focused on e-waste mitigation based on circular economy practices, including packaging standards and 3D printing to electronics standards.
- Transportation electrification (EV powering approaches)
  - Accelerating the growth of electrification across numerous industry sectors is seen as a key transformative aspect for sustainable infrastructure. Transportation is a major component, hence alignment with IEEE TEC initiatives will be a focus
- CO2 capture/sequestration
  - The transition from traditional to renewable energy requires time, thus enhance environmental efficiency during the transition is an opportunity in an area where IEEE has not been as visibly active relative to other related technologies
- Energy storage
  - Energy storage is key to managing variable energy resources; while renewable energy generation is often a more publicly visible aspect of transformation, a focus on storage is equally important
- Energy policy issues
  - IEEE has increasingly engaged with global governmental and policy bodies to inform and educate on the technology challenges and opportunities for sustainable issues; deliverables will seek to continue this aspect of providing the objective knowledge to support stakeholder decision making
- Curation of existing IEEE content aligning with the defined scope for inclusion in the establishment of the initial web presence – this action will serve as a starting point and help determine areas of gap and need, as well as evolving to an ongoing continuous improvement effort to maintain and update content (Target completion December 2020)
- Development of an initial IEEE sustainable energy thought leadership oriented report that may be used as a centerpiece for an IEEE marketing campaign to formally “launch” and promote the initiative and build awareness of IEEE expertise and available content
  - Recruitment and participation by a global base of volunteers, including non-traditional members (i.e. those that are not current IEEE members, but who are candidates as members based on their expertise in these areas)
- Each sub-tending focus area will recruit additional volunteers and establish their respective action plans by March 2021
- Initial proposal of opportunities and needs for new work (conferences, workshops, publications, standards, educational offerings) – completed for each focus area by June 2021

- 2<sup>nd</sup> Half 2021 – under the leadership of the executive committee of the overall program, focus groups will develop their deliverables, with coordination across focus groups by the executive committee to provide a holistic external facing representation of IEEE work on these topics
- 2H2021/1H2022 – a transition plan will be developed to establish a longer term positioning of this initiative in the larger IEEE

### **5.1 Open Source Software Development**

*Indicate whether this IC Activity will develop or incorporate open source software in the deliverables. All contributions of open source software for use in Industry Connections activities shall be accompanied by an approved IEEE Contributor License Agreement (CLA) appropriate for the open source license under which the Work Product will be made available. CLAs, once accepted, are irrevocable.*

Will the activity develop or incorporate open source software (either normatively or informatively) in the deliverables?:

No, not envisioned at this time

### **6. Funding Requirements**

*Outline any contracted services or other expenses that are currently anticipated, beyond the basic support services provided to all IC activities. Indicate how those funds are expected to be obtained (e.g., through participant fees, sponsorships, government or other grants, etc.). Activities needing substantial funding may require additional reviews and approvals beyond ICom.*

Specify funding requirements and sources, if any.

IEEE SA will provide the basic services provided for all Industry Connections programs. As the scope and visibility of this program is substantial and IEEE wide, SA will seek to assign additional staff to support the executive committee in the execution of this ambitious program. TA/MGA staff support will also be explored to supplement SA support and provide a cross-IEEE foundational structure in support of collective goals.

Funding of any direct costs associated with the deliverables will be explored with each participating IEEE OU to determine availability in support of specific project based needs.

Additionally, support from IEEE SA marketing/digital teams will be requested to establish a web presence for the public facing aspects of the activity.

### **7. Management and Procedures**

#### **7.1 Activity Oversight Committee**

*Indicate whether an IEEE committee of some form (e.g., a Standards committee) has agreed to oversee this activity and its procedures.*

Has an IEEE committee agreed to oversee this activity?: No

This activity will closely align with the IEEE Sustainable Development Task Force, with many common members, and a focus on actionable tasks and deliverables inspired by SDTF recommendations. It is also conceivable to transition SDTF leadership and membership to this IC, depending on the longer term plan for the SDTF (i.e., an alternative venue to pursue topics of interest should the SDTF be sunsetted at some point).

If yes, indicate the IEEE committee's name and its chair's contact information.

**IEEE Committee Name:** Committee Name

**Chair's Name:** Full Name

**Chair's Email Address:** who@where

Additional IEEE committee information, if any. Please indicate if you are including a letter of support from the IEEE Committee that will oversee this activity.

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### **7.2 Activity Management**

If no Activity Oversight Committee has been identified in 7.1 above, indicate how this activity will manage itself on a day-to-day basis (e.g., executive committee, officers, etc).

Activity management will be provided by an executive committee, not to exceed 12-15 members. This will include a chair, vice-chair(s), focus group chairs and at-large committee members. Each focus group will have a chair.

### **7.3 Procedures**

Indicate what documented procedures will be used to guide the operations of this activity; either (a) modified baseline *Industry Connections Activity Policies and Procedures*, (b) Standards Committee policies and procedures accepted by the IEEE-SA Standards

Board, or (c) Working Group policies and procedures accepted by the Working Group's Standards Committee. If option (a) is chosen, then ICCom review and approval of the P&P is required. If option (b) or (c) is chosen, then ICCom approval of the use of the P&P is required.

This activity will use the policies and procedures provided in the Industry Connections modified baseline document.

## **8. Participants**

### **8.1 Stakeholder Communities**

Indicate the stakeholder communities (the types of companies or other entities, or the different groups of individuals) that are expected to be interested in this IC activity, and will be invited to participate.

- Industry practitioners in sustainable development and renewable energy topics
- Academic experts in sustainability technologies and issues
- Energy, Communications and Transportation system operators
- Government bodies involved with sustainability and infrastructure modernization

**8.2 Expected Number of Participants**

Indicate the approximate number of entities (if entity-based) or individuals (if individual-based) expected to be actively involved in this activity.

10-20 initially to launch the program, with potential to grow to over 100+ participants in the first year. The initial leadership will include leaders from IEEE TA, MGA and SA to assure a cross-OU perspective. SDTF task force and ad hoc members will be invited to join as initial members to provide continuity and alignment with prior work of these groups. Recruitment of the larger community will build from this core group of participants.

**8.3 Initial Participants**

Provide a number of the entities or individuals that will be participating from the outset. It is recommended there be at least three initial participants for an entity-based activity, or five initial participants (each with a different affiliation) for an individual-based activity.

Use the following table for an entity-based activity:

Use the following table for an individual-based activity:

Individual		Employer	Affiliation
Roger Fujii			TA
Maike Luiken			MGA
Bruno Meyer			TA/PES
Robert Fish			SA
All SDTF/joint ad hoc members will be invited to join upon approval and launch of the initiative			