



PowerAmerica™ Institute Bylaws

I. PURPOSE

North Carolina State University (NC State) is the prime recipient of a Cooperative Agreement, Award No. DE-EE0006521 (“Cooperative Agreement”), from the United States Department of Energy (“DOE”), Office of Energy Efficiency and Renewable Energy (“EERE”).

The purpose of the award is to accelerate the commercialization of wide band gap semiconductor power electronics by establishing PowerAmerica: The Next Generation Power Electronics Manufacturing Innovation Institute (“PowerAmerica” or “Institute”) to support applied research, manufacturing, and product development in this area. The broader goal is to enhance economic development and security in the United States through revitalizing American manufacturing competitiveness. A core challenge to such revitalization is the development and scale-up of high volume and low cost manufactured device designs, packaging and modules for systems-level operational and spatial requirements with broad end-use system applicability. Meeting that challenge is the Institute’s focus.

The Institute and its members (hereinafter referred to individually as “Member” or collectively as “Members”) will implement a program (i) supporting shared manufacturing and product development infrastructure that enables affordable access to physical and virtual tools, (ii) enabling applied research and development projects that can support innovative production, (iii) defining policies and strategies for participation by a wide range of stakeholders, (iv) providing capabilities for, and collaboration in, an open work environment, (v) providing for technical education and workforce development, and (vi) leveraging relevant private and public sector resources to support focused commercialization projects while maintaining proprietary information to maintain individual company competitiveness.

These Bylaws establish the overall management of the Institute by an Executive Director with advisory input by an Executive Committee composed of representatives of the Federal Government, NC State and the Members of the Institute. There will be three standing committees (“Advisory Committees”): Executive Committee, Member Advisory Committee, and Government Advisory Committee. These Bylaws are not intended to replace the Cooperative Agreement and any inconsistency between the Bylaws and the Cooperative Agreement will be resolved in favor of the Cooperative Agreement.

The Institute will have six levels of membership: Full Sustaining Member, Full Member, Affiliate Member, Startup Member, Academic Member and Federal Lab Member. The criteria for membership are described in Article IV below.

Revised June 7, 2017

II. MANAGEMENT

A. Executive Director

NC State shall hire an Executive Director, who will report to the Chancellor's designee and will be responsible for day-to-day management of the Institute. The duties of the Executive Director include but are not limited to the following:

- i. manage the operations of the Institute, including hiring and retaining qualified staff;
- ii. prepare and provide to each Member and all Advisory Committees an annual report addressing: (i) the proposed and approved projects, (ii) the budget and performance against the same, (iii) the strategic plan and performance against the same, (iv) any revisions, or proposed revisions, to the strategic plan or these Bylaws, (v) the names of the Advisory Committee members and (vi) the identification of the Members and their status;
- iii. implement the strategic plan (The strategic plan will generally identify the focus of proposed projects likely to be approved, the conduct of such projects, the dissemination of the results of such projects, the provision of education and training in the project results, and will include any other information deemed by the Executive Director to be necessary for the governance of the business affairs of the Institute);
- iv. present to the Executive Committee proposed projects for feedback on prospective decisions to be made by the Executive Director. (In presenting proposed projects to the Executive Committee, the Executive Director will duly note the recommendations, if any, of the Member Advisory Committee and the Government Advisory Committee.);
- v. review proposals received from any Advisory Committee, decide what action if any to take in response to the proposals, and communicate such decisions back to the relevant Advisory Committee;
- vi. arrange for an annual meeting to review the Institute (The Executive Director shall invite all Advisory Committee members and Members to the meeting, advising them the location, date, and time of the meeting at least two (2) months prior to the same. At least two (2) weeks prior to the meeting, the Executive Director shall distribute a proposed meeting agenda);
- vii. present to the Executive Committee revisions to these Bylaws for review and comment;
- viii. appoint a Chief Technology Officer ("CTO") and other staff as he/she deems appropriate to assist in carrying out the responsibilities of the Executive Director, within budgetary parameters;
- ix. staff the Executive Committee;
- x. manage Institute Intellectual Property;
- xi. create an online portal for Intellectual Property reporting;

- xii. oversee and administer the Intellectual Property Protection Fund (defined below); and
- xiii. approve the strategic plan, annual operating plans, bylaws, membership agreement, other governing documents and budgets.

III. ADVISORY COMMITTEES

A. Executive Committee

The Executive Committee shall consist of the following persons:

- i. an executive officer of NC State as designated by the Chancellor of NC State. Initially, the Vice Chancellor for Research, Innovation and Economic Development, this member shall also serve as Committee Chair and shall not be eligible to vote on Executive Committee actions except in the event of a tie vote;
- ii. three (3) industry representatives appointed by the Member Advisory Committee and one (1) representative appointed by each Full Sustaining Member; and
- iii. three (3) members from academia, two of whom will be appointed by the NC State Chancellor's designee and the other elected by academic members of the Membership Advisory Committee; and
- iv. three (3) representatives from DOE and/or U.S. Government agencies that have a manufacturing focus on wide bandgap power semiconductor technology, and are appointed by the DOE EERE Technology Manager, for the duration of the Cooperative Agreement unless extended by NC State.

The Executive Director, Chief Technology Officer, and DOE EERE Technology Manager will serve as *ex-officio* voting members.

In actions of the Executive Committee, each member, including *ex officio member*, shall have one vote. A quorum for any vote shall be at least two thirds of the voting members. In the event of a tie vote, the Committee Chair shall cast the deciding vote. Members of the Executive Committee shall serve three (3) year terms and are eligible for re-appointment for no more than two additional consecutive terms.

The Executive Committee is responsible for providing advice and counsel to the Executive Director in the operation and management of the Institute. The Executive Committee's role is purely advisory. The ultimate responsibility for the management and execution of the PowerAmerica Institute resides with the Executive Director. The Executive Director is under no definitive obligation to adopt, or otherwise be bound to act upon, any recommendation of the Executive Committee. However, it is expected that the Executive Director will carefully consider any recommendation by the Executive Committee. No recommendations may be considered or adopted that conflict with or exceed the bounds of the

Cooperative Agreement. The Executive Committee will advise on any matter submitted prior to decision by the Executive Director, examples of which are the following:

- i. policies and strategic guidance concerning research priorities, objectives and content of the research program;
- ii. various classes of membership in the Institute, membership fees, and the rights and responsibilities of each class;
- iii. performance and direction of the Institute and the executive leadership team;
- iv. annual budgets, annual program and strategic plans presented by the Executive Director;
- v. Bylaws, Membership Agreement, and other governing and organizational documents and any amendments;
- vi. adequate financial resources and a path toward sustainability beyond the award period;
- vii. Advisory Committee proposals submitted by the Executive Director; and
- viii. other such matters with respect to the direction of the Institute as the Executive Committee shall deem appropriate.

B. Member Advisory Committee

The Member Advisory Committee shall consist of one representative from each of the Full Sustaining, Full, Affiliate, Startup, and Academic Members. Voting rights of each representative will be in proportion to the membership fees associated with the representative's Membership Tier.

The Member Advisory Committee shall:

- i. attend and participate in annual review meetings;
- ii. contribute to and receive annual reports;
- iii. elect up to three (3) industrial representatives from non-Full Sustaining members to the Executive Committee;
- iv. ensure that member views are considered in decision making;
- v. provide input to Institute roadmaps, strategic vision, and priorities listed in request for proposals;
- vi. advise on criteria for new member admittance;
- vii. review and recommend new membership applications;
- viii. provide input to the Executive Director on project selection;
- ix. submit proposals to the Executive Director regarding any aspect of the Institute's activities;
- x. elect a chair and vice-chair for terms not to exceed one (1) year; and
- xi. approve amendments to these Bylaws.

C. Government Advisory Committee

Revised June 7, 2017

The Government Advisory Committee shall consist of government members appointed by the Department of Energy. The EERE Technology Manager will serve as Chair of Government Advisory Committee. The Institute's Executive Director and Chief Technology Officer will present to the Government Advisory Committee on Institute performance.

The Government Advisory Committee shall be responsible for, and have authority to:

- i. represent the U.S. government's interests in wide band gap semiconductor technology;
- ii. advise the EERE Technology Manager on Institute performance of obligations established by the Cooperative Agreement, including project performance and recommendations for project continuation or termination; and
- iii. advise the EERE Technology Manager on such other matters as he/she shall request.

IV. MEMBERSHIP

A. General

1. Eligible Members and Membership Approval Process

Institute membership is open to all U.S. industrial organizations (incorporated or formed under the laws of a State or territory of the United States that maintain a significant manufacturing presence in the U.S.), academic institutions, non-profit organizations, governmental agencies and other U.S. based entities committed in furthering technology related to Wide Bandgap Semiconductors and Power Electronics.

Foreign-owned or partially foreign-owned organizations with a U.S. manufacturing presence may, with the approval of the Executive Director, be eligible for membership when the organization's participation in the Institute would be in the economic interest of the United States and aligned with the vision and mission of the Institute.

To be considered for membership admission, applicants must submit satisfactory evidence that they meet the qualifications of membership as set forth above and that their business objectives and conduct are consistent with the goals and purposes of the Institute.

In the case of a question of eligibility, the Executive Director may consult the EERE Technology Manager and the Executive Committee for advice. Applicants for membership will submit their applications to the Executive Director, who will ultimately serve as the approving official for membership admission after each application undergoes the necessary review process. The Executive Director, at his/her discretion, may seek input from the Executive Committee or the Member Advisory Committee. Prior to making a final admission determination, the Executive Director will provide DOE with a reasonable opportunity to review the applications for consistency with U.S. manufacturing objectives and to assess whether the

potential member would further the purposes of the Cooperative Agreement (e.g., increase domestic production capacity and strengthen domestic supply chain). DOE will provide its recommendation to the Executive Director. For the duration of the Cooperative Agreement, the Executive Director will use a positive recommendation from DOE as a requirement of admission.

2. Membership Fees

Membership fees and benefits vary with the membership tier joined as set forth in the Membership Agreement. Membership fees are set by the Executive Director and may be amended from time to time in the interest of sustaining the Institute. Membership fees are nonrefundable. A Member may increase its Membership level by paying the difference between the previous level and the new level, with the effective date of the new level of membership being the date of receipt of payment of the difference. However, rights in intellectual property are determined by Membership level on the date of commencement of the research project giving rise to the intellectual property. The Institute will utilize Membership fees in accordance with the terms and conditions of the Cooperative Agreement through its duration and in the general interest of the Institute thereafter.

3. Withdrawal From Membership

A Member may withdraw from the Institute by providing written notice as set forth in the Membership Agreement. A withdrawing Member shall be bound by the nondisclosure obligations set forth elsewhere in this Agreement, shall retain prior granted licenses, and is liable for its own continuing contractual obligations under any Institute documents to which it is a signatory. The Member shall have no further right to share in the research results subsequently generated under the Institute or in any Institute Intellectual Property resulting.

B. Additional Membership Rights and Duties

The Executive Director, in consultation with the Executive Committee, will identify additional rights and responsibilities of Members in each class. Rights and responsibilities will include, but not be limited to, the following:

- i. right to use Institute facilities, training, and data in some positive proportion to the class Members' financial commitment;
- ii. representation on, and voting rights in, the various Advisory Committees in some positive proportion to the class Members' financial commitment;
- iii. that in special circumstances where there is significant quantified and documented value to the Institute, such as a large equipment or infrastructure donation, the Executive Director may substitute in-kind contribution for membership fees; and
- iv. that in-kind contributions will be considered at a minimum value of 50% of their cash equivalent.

V. PERFORMANCE OF WORK

All PowerAmerica activities under Cooperative Agreement DE-EE0006521 must be performed in the United States and no PowerAmerica funds under the Cooperative Agreement may be spent outside the U.S. This requirement is applicable to the Institute, its members, sub-recipients, contractors and others performing work under the Cooperative Agreement. This requirement does not apply to the purchase of supplies and equipment; however, the members should make every effort to purchase supplies and equipment produced within the United States.

VI. INTELLECTUAL PROPERTY

A. Scope and Purpose

- i. The following is the Intellectual Property Management Plan (“IP Plan”) of the Institute that governs the treatment of Intellectual Property and the rights between the Institute and its Members;
- ii. The rights in Intellectual Property between DOE and the Institute and its Members are governed by the terms of the Cooperative Agreement;
- iii. In the event of a conflict between the IP Plan and the Cooperative Agreement, the Cooperative Agreement takes precedence;
- iv. The purpose of the IP Plan is to promote the rapid commercialization of intellectual property developed by the Institute and encourage membership and participation in the Institute; and
- v. If membership terminates for any reason, Members will retain ownership of their sole and joint inventions made in the course of performance of Institute Research and as stated in IV. A.3, will retain prior granted licenses as long as they are in compliance with license terms.

B. Definitions

The following definitions are for the purpose of interpreting these Bylaws establishing rights among Institute Members; nothing herein is intended to conflict with obligations of any Member to the federal government under the Cooperative Agreement and, to the extent there is any inconsistency, the definitions of the Cooperative Agreement apply to rights and obligations of the Member to the federal government.

“Institute Research” means any research, development, or demonstration activities funded in whole or in part with Institute funds, whether membership fees, cost share, program income, DOE funding under the Cooperative Agreement, or other governmental funding.

“Institute Intellectual Property” means and includes all Intellectual Property Invented or first produced in the performance of any Institute Research; in the case of copyright, Institute Intellectual Property includes copyrightable works first reduced to tangible form in the performance of Institute Research.

“Intellectual Property” means inventions or discoveries which are or may be patentable or otherwise protectable under title 35 of the United States Code, and copyrightable works.

“Background Intellectual Property” means any intellectual property invented or produced prior to commencement of, or generated outside of, Institute Research, including Intellectual Property Invented or produced prior to commencement of, or generated outside of, Institute Research.

“Invented” means conceived and actually or constructively reduced to practice.

“Enhancement Project” means a supplement to a project that has been approved by the Institute for funding and for which a Member wishes to provide additional funding and agrees to the terms of a separate Enhancement Project Agreement.

“Industry Member” shall mean a Sub-recipient under the Cooperative Agreement that:
(a) executes the “PowerAmerica Membership Agreement” with NC State, (b) is eligible for membership under these Bylaws, (c) is then current on the applicable Membership fees, and (d) is a Member, but not a University Member.

“Industry-owned Intellectual Property” means all Intellectual Property Invented or first produced solely by Industry Member personnel in the performance of Institute Research, under the Cooperative Agreement in accordance with any Statement of Project Objects (SOPO) or other deliverables required by any Industry Member under the Cooperative Agreement.

“University Member” includes Academic Members and Federal Lab Members.

“University-owned Institute Intellectual Property” means all Intellectual Property Invented or produced solely by NC State personnel, University Member personnel, or both in the performance of any Institute Research.

“Jointly owned University Intellectual Property” means all Intellectual Property Invented or first produced jointly by University Member personnel in the performance of Institute Research. For the purpose of clarity, Jointly owned University Intellectual Property does not include Industry-owned Intellectual Property.

“Tier 1 Member” means a Full Sustaining Member.

“Tier 2 Member” means a Full Member.

“Tier 3 Member” means an Affiliate Member.

“Tier 4 Member” means a **Startup Member**, which constitutes an entity created within the last ten years, and comprising less than 50 employees.

“Tier 5 Member” means an Academic Member

Revised June 7, 2017

C. Pre-Competitive v. Competitive Projects

This Plan distinguishes between pre-competitive research projects and competitive research projects. Pre-competitive research projects should be directed to projects in which the results are likely to be beneficial to advancing the general state of the art and not specific to a particular Member's proprietary process or products. Competitive research projects should be directed to projects in which the results are likely to be more applied in nature and specific to a particular Member's proprietary process or products. At the time a research project is submitted to Institute for funding, the applicant must identify the research project as pre-competitive or competitive. When reviewing research projects for funding, the Institute will consider whether projects are pre-competitive or competitive as one factor for selection.

D. Enhancement Projects

Members may provide additional funding for projects that have been approved for funding from membership fees to create an Enhancement Project. Intellectual Property arising from an Enhancement Project is Institute Intellectual Property and the additional funding does not affect ownership or licensing rights in the Institute Intellectual Property. The benefits of providing additional funding may include reduced Facilities & Administration (F&A).

It is also possible for a Member or Members to fund projects that are not "Institute Research" pursuant to a sponsored research agreement with NC State. This is not an Enhancement Project. The terms of the sponsored research agreement will be set forth in the agreement and, unless otherwise agreed by the parties, neither the Institute nor any non-party Member will have any rights in the results of the research. The results of this research will be available to Institute Members on terms set forth in the sponsored research agreement. Such research will carry F&A rates and other terms, including intellectual property and licensing rights, customary for sponsored research agreements at NC State.

E. Background Intellectual Property

Each Member shall retain all rights, including ownership, to its Background Intellectual Property. The decision to make available Background Intellectual Property for use in Institute Research is at the sole discretion of each Member. No license or rights are granted to any Background Intellectual Property under this Plan.

F. Title to Institute Intellectual Property

- i. Subject to the terms of the Cooperative Agreement, each Member shall retain title to Institute Intellectual Property invented, authored, created or developed solely by its employees, individual contract workers, and agents;
- ii. Subject to the terms of the Cooperative Agreement, Members shall be joint owners of Institute Intellectual Property that is developed jointly by those Members, subject to any separate agreement between those

- Members as to enforcement, licensing, patent prosecution costs, and government fees. Each owner shall have an undivided interest in the jointly owned Institute Intellectual Property;
- iii. Members are responsible for complying with the obligations of the Cooperative Agreement in order to elect and retain their rights, including ownership rights, in the Institute Intellectual Property; and
 - iv. Intellectual Property created by employees of Federal Lab Members will be subject to their respective Management and Operating (M&O) contract terms and conditions with DOE with respect to ownership of inventions made by their employees. The M&O contract generally provides that the laboratory contractor has the right to elect to retain title to inventions made by their lab employees.

G. Disclosure of Institute Intellectual Property

- i. Within sixty (60) days after a Member becomes aware of Institute Intellectual Property, the Member will disclose the Intellectual Property in writing to the Institute Chief Technology Officer (CTO) by submission to a confidential portal designed for the purpose. In the event that the disclosure includes at least one University inventor, the disclosure will be forwarded simultaneously to the University technology transfer office responsible for administering the Intellectual Property. The CTO will review the disclosure, ensure that any necessary export control compliance measures are taken, and forward the disclosure, if not already forwarded pursuant to the preceding sentence, to the office responsible for administering the Intellectual Property.¹
- ii. Member remains solely responsible for making any required disclosures directly to DOE or the contracting officer under the Cooperative Agreement;
- iii. In accordance with the Cooperative Agreement, Members may mark their Institute Intellectual Property disclosures as “protected data;”
- iv. Notwithstanding any “protected data” notice, the CTO and responsible technology transfer office may share any Institute Intellectual Property disclosure with other Members as required for licensing set forth in the Bylaws, including as provided in Paragraph (H) below; and
- v. Other than the limited exception above in Paragraph G(iv), the responsible technology transfer office, the Institute and Members must comply and not obscure, remove, delete, or deface any “protected data” notice on any Institute Intellectual Property disclosure or on any other technical data, documents, software or other materials they receive or which are required

¹ An Industry Member subject to the Class Waiver provisions of the Intellectual Property Terms of the Cooperative Agreement may have one hundred eighty (180) days to disclose Intellectual Property solely invented by the Industry Member.

to be delivered to the DOE under the Cooperative Agreement.

H. Licensing of Institute Intellectual Property

1. Non-Commercial Research License to Inventions

The owning Member or Members of any Institute Intellectual Property agree to grant to the Academic Members of the Institute a royalty-free, non-exclusive license to use the Intellectual Property for research and educational purposes only. Owing Members agree to grant other Members a royalty-free, nonexclusive license to use the Institute Intellectual Property solely for the purposes of carrying out the research required under the Cooperative Agreement during its term.

2. Commercial Licensing of University-owned Institute Intellectual Property

When University Members are the exclusive owners of Institute Intellectual Property, their respective technology transfer offices will follow the procedures outlined below for offering commercial licenses to inventions arising from both pre-competitive and competitive Institute Research. The CTO will coordinate Intellectual Property reporting to the Membership but the University Members shall be responsible for their own negotiations.

- a. Notices to Members: Each University-owned Institute Intellectual Property disclosure will be promptly disclosed, in writing, to all Members simultaneously by the CTO as described below. The CTO will inform Members at this time of the grant of the non-commercial research license in the University-owned Institute Intellectual Property, of Member rights to negotiate a commercial license as set forth below and of the dates upon which the right to exercise the option begins and ends. All elections of options provided for below must be made in writing to the CTO and the owning Member or Members.
- b. Tier 1 Members have First Option for Exclusive Commercial License: Each Tier 1 Member has thirty (30) days from the receipt of the University-owned Institute Intellectual Property disclosure to elect an option to negotiate an exclusive commercial license. If more than one Tier 1 Member elects an option to negotiate an exclusive commercial license, then the negotiating will be co-exclusive to the electing Members unless the electing Members can agree to negotiate exclusive licenses by different fields of use.
- c. Tier 2 Members have Second Option for Exclusive Commercial License: If no Tier 1 Member elects an option for an exclusive commercial license within the thirty (30) days or certain fields of use are not covered by a license to a Tier 1 Member after the negotiation period (defined below) ends, then each Tier 2 Member has the right to elect an option to negotiate

an exclusive commercial license. The option will be limited to particular fields of use if necessary to honor any license executed by a Tier 1 Member. Each Tier 2 Member has thirty (30) days to make the election from the date it was informed of its right to elect. If more than one Tier 2 Member elects an option to negotiate an exclusive commercial license, then the negotiating will be co-exclusive to the electing Members unless the electing Members can agree to negotiate exclusive licenses by different fields of use.

- d. Tiers 3 and 4 Jointly Have Third Option for Exclusive Commercial License: If no Tier 1 or 2 Member elects an option for an exclusive commercial license within the thirty (30) days or certain fields of use are not covered by a license to a Tier 1 or 2 Member after the negotiation period (defined below) ends, then each Tier 3 and 4 Member has the right to elect an option to negotiate an exclusive commercial license. The option will be limited to particular fields of use if necessary to honor any license executed by a Tier 1 or Tier 2 Member. Each Tier 3 and 4 Member has thirty (30) days to make the election from the date it was informed of its right to elect. If more than one Tier 3 and 4 Member elects an option to negotiate an exclusive commercial license, then the negotiating will be co-exclusive to the electing Members unless the electing Members can agree to negotiate exclusive licenses by different fields of use.
- e. Cost of Intellectual Property Protection: Each Member that has elected the option to negotiate a commercial license must agree to pay for the cost associated with obtaining protection for the Intellectual Property in the countries in which the license is intended to cover. If there is only one Member electing an option, then that one electing Member shall be liable for all cost associated with obtaining protection for the Intellectual Property. If there is more than one electing Member, then the cost will be shared equally among the electing Members. Each electing Member shall remain liable for and share all costs related to Intellectual Property protection, unless the electing Member provides a thirty (30) day notice that it wants to cancel its election, after which thirty (30) days, the electing Member shall not be liable for any future costs and forfeits any commercial rights to the Intellectual Property under this Plan. If an invoice for a patent expenses reimbursement is not paid by a Member within thirty (30) days of the due date, said Member shall forfeit any commercial rights to the Intellectual Property. If a Member forfeits commercial rights, a license for those rights will be offered first to Members in the forfeiting Member's Tier and if no license is executed, the same rights in succession outlined above will apply.

- f. Negotiation Period: All licenses will be negotiated in good faith according to academic and industry standards. Under each elected option, a Member has a period of one hundred twenty (120) days from the date of the election to negotiate a license with the owning Member or Members.
 - g. Commercial Licensing to Non-Members: Owing University Members of any University-owned Institute Intellectual Property agree not to license or offer to license the University-owned Intellectual Property to any non-Member unless no Member has elected the option to negotiate a commercial license as provided for by this Plan, all negotiations periods for licensing to Members have expired, or a commercial license with a Member has terminated and the license or offer to license to the non-Member would not be inconsistent with or otherwise interfere with any license to a Member.
3. Commercial Licensing of Jointly Owned University Intellectual Property

Jointly owned University Intellectual Property will be licensed in accordance with the process outlined in Paragraph H.2 above. The University owners of such jointly owned Institute Intellectual Property will negotiate in good faith an invention administration agreement which will grant to one party the authority to manage patent prosecution and licensing, establish procedures for sharing patent filing and prosecution expenses, and allocate the sharing of royalties.

4. Commercial Licensing of Industry-owned Intellectual Property

To the extent that it is commercially feasible to do so, Members are expected to offer commercial licenses to Members prior to offering to non-Members. However, the licensing of Industry-owned Intellectual Property for commercial purposes is at the sole discretion of the owning Member or Members. Industry Members may exploit their Intellectual Property in any manner consistent with the Cooperative Agreement and their rights under federal statutes pertaining to the Intellectual Property.

I. Intellectual Property Protection Fund

The Institute will establish an Intellectual Property Protection Fund (IPPF) as a resource to be used to secure and or maintain protection associated with the most promising Institute Intellectual Property in those cases where there is no licensee or license option to support a University Member's filing, prosecution or maintenance costs. The Executive Director will have authority to commit funds for this purpose, and must report the expenditure to the Executive Advisory Committee and to the Membership Advisory Committee. In the event that the University Member is successful in entering into a license or license option, the University Member will require the licensee to reimburse those costs paid by the IPPF and will refund those funds to the IPPF.

The IPPF will be funded by an annual contribution of \$5,000 which will be deducted from the membership fee of each of Tiers 1-3 Members. The IPPF will be maintained in a separate account from membership fees. In the event that the IPPF exceeds \$1,000,000, the Executive Director may provide support to Institute Research funded from membership fees in an amount that does not reduce the IPPF below \$400,000.

VII. CONFIDENTIALITY POLICY

a. Members, NC State and Institute will limit disclosure of proprietary information to the extent necessary to carry out Institute Research. However, in the normal and routine operation of the Institute as detailed in the Membership Agreement and these Bylaws, there may be the need for a party to disclose information that is confidential and proprietary to the discloser. All such information shall be disclosed by the disclosing party in writing and designated as "Confidential Information" at the time of disclosure, or, if disclosed orally, shall be identified as "confidential information" at the time of disclosure and confirmed in writing as being "Confidential Information" within thirty (30) days of such disclosure.

b. The Institute, NC State and Members shall, as recipients of Confidential Information hereunder, for a period of five (5) years following the date of such disclosure, use the Confidential Information only for purposes of Institute Research and exercise the same degree of care to prevent inadvertent or unauthorized disclosure that it applies to its own trade secrets and/or confidential and proprietary information. However, neither Institute nor Member shall be liable for disclosure of such Confidential Information which:

- i. is, or becomes, available to the public other than by breach of any obligation herein assumed by the recipient; or
- ii. is furnished to a third party by discloser without restriction of the third party's right to disseminate the Confidential Information; or
- iii. is disclosed with the discloser's written permission without an obligation of confidentiality; or
- iv. is already known to the recipient other than from any previous unexpired confidentiality obligation with discloser as evidenced by tangible records; or
- v. is independently developed by the recipient as evidenced by tangible records; or
- vi. is disclosed without restriction to the recipient by a third party having the right to make such disclosure.

c. The obligations described in Paragraph VII (b) above shall continue with respect to any Confidential Information disclosed for a period of five (5) years from the date of disclosure thereof, regardless of whether Member remains a Member during said period.

d. Information that is disclosed as a trade secret, and clearly marked as such, shall not be subject to the time limitation on disclosure of Paragraph VII (c) but shall be treated as a

trade secret for so long as the information remains a trade secret as that term is defined by North Carolina law. N.C.G.S. 66-152(3).

e. Notwithstanding any provision of these By-Laws, Members are aware that NC State and the Institute have certain reporting requirements to DOE under the Cooperative Agreement and each Member is responsible for marking data that the Member wants protected in accordance with the Cooperative Agreement, such as “limited rights data” or “protected data.”

VIII. PUBLICATION POLICY

For the purposes of this Article VIII, “publication” shall be deemed to mean any written, oral, or other public divulgence including, but not limited to technical publications, press releases, and presentations, of the results of any Institute Research to the extent that any such divulgence could bar the availability of patent protection in foreign jurisdictions or trigger the one-year grace period in the U.S. within which a U.S. patent application must be filed.

Publication of research results in scientific journals is encouraged. In order to prevent untimely publication of patentable research, any person who desires to publish the results of Institute Research shall provide notification of such intent to publish to the Executive Director and Chief Technology Officer. The Executive Director can require a maximum three-month delay, but shall require no less than a thirty-day delay, in publication from the date of notification to determine whether the paper contains patentable material, a Member’s Confidential Information or a trade secret. Upon consultation with the relevant Members whose Confidential Information may be at issue, if it is determined that patentable material is contained in the proposed publication, the Executive Director will direct that such material will be either deleted and publication will be allowed to proceed, or that publication will be delayed for another three months until all necessary intellectual property rights have been secured through filing of patent applications. In the unlikely event that the publication contains Confidential Information or trade secret information of a Member, that information will be removed from the publication. Any requirement to delete information or delay publication must be communicated to the proposed publisher within thirty (30) days of receipt of notification of intent to publish.

Under no circumstances shall a student’s thesis, based in whole or in part on Institute Research, be delayed in degree confirmation; provided, however, that student theses shall be subject to a six-month delay provision following their approval before they are made publicly available; and provided, further, that Member Universities may be released from this six-month delay period if a U.S. patent application is placed on file which covers the subject matter of the thesis. Students of universities other than NC State shall be afforded the publication delays for theses contained in the policies of those universities.

IX. PUBLICITY

Without the prior written consent of the owning entity, Members may not use the name, trademark or image of any other Members, the Institute, NC State, or DOE in any publicity, advertising, press release, or promotional activity or represent that any product or service of the Institute or another Member is the product or service of the representing party.

Revised June 7, 2017

X. COMPLIANCE WITH INSTITUTE POLICIES

The Institute, a component of NC State, has developed policies and procedures to implement and maintain an effective organizational compliance structure for managing (1) intellectual property, (2) conflict of interest, (3) export control, (4) confidential and proprietary information, and (5) information security requirements. As a condition of Institute membership, and prior to acceptance as a Member or receipt of Institute funds, applicants for membership will be required to certify that they agree to the terms and conditions in these Bylaws and the PowerAmerica Membership Agreement and that they have policies and procedures that comply with the Institute policies attached as Appendix 1. (Conflict of Interest Management, Confidential/Proprietary Information Plan, Export Control Procedures, Information Security Requirements.) If requested by NC State, the Institute or DOE, Members will allow inspection of Member compliance documents and provide any other information reasonably requested for the purpose of evidencing compliance with Appendix 1, with such inspection being subject to the confidentiality provisions of Article VII herein. Institute Members/sub-recipients who are performing Institute Research have a duty to report financial or other conflicts of interest that may compromise, or have the appearance of compromising objectivity in performing duties under the Cooperative Agreement or sub-award. The Institute will provide notice to DOE within three (3) days of receipt of information concerning conflicts of interest consistent with the requirements of the Cooperative Agreement. Non-compliance with the Institute policies attached as Appendix 1 will constitute a breach of the Membership Agreement, subject to *termination of membership in the Institute upon Member's failure to cure such breach within thirty (30) days of receiving written notice of such breach*, expulsion from the Institute and indemnity of NC State, DOE, and the Institute for any monetary damages caused by the breach.

Any sub-awards, grants, contracts, membership agreements or other agreements that the Institute makes with respect to funds it receives from DOE under the Cooperative Agreement, or utilizes as a cost share toward the Cooperative Agreement shall comply with the requirements of the Cooperative Agreement, including federal laws and regulations, including without limitation, financial assistance and intellectual property law and policy. To that end, a clause shall be included in each such grant, contract, and agreement which requires that the party will ensure continual compliance with the Cooperative Agreement terms and conditions.

XI. COMPLIANCE WITH UNITED STATES ANTITRUST AND COMPETITION LAWS

The Institute includes among its members parties who are business competitors. It is the policy of the Institute to comply with United States antitrust and competition laws that apply to each of its members and to encourage its members to do so as well. Accordingly, in connection with any meeting or activity sponsored by the Institute, no members shall reach any agreement or exchange any information concerning cost or pricing information, sales or marketing strategies, terms and conditions of purchase or sale, or the allocation of customers or territories. All members shall avoid even the appearance of such agreements or exchanges of information. If discussions prohibited by this rule take place in any such meeting or activity, all members should cease participation immediately. In order to minimize the likelihood of such an occurrence, all meetings

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and activities sponsored by the Institute shall be conducted in accordance with a published agenda and shall be documented in appropriate meeting minutes.

XII. AMENDMENTS

With at least two (2) weeks' notice, these bylaws may be amended by the vote of two-thirds of the Member Advisory Committee. Prior to approving any bylaw amendments, the Executive Director will provide EERE an opportunity to review the proposed amendment for compliance with the Cooperative Agreement. The Executive Director will require a positive compliance recommendation from EERE as a requirement of approval for the duration of the Cooperative Agreement.

XIII. TERMINATION OF INSTITUTE

The Institute may be terminated if the performance or mission of the Institute is no longer necessary, if the Institute does not become self-sustaining after five years or is no longer self-sustaining in the opinion of the Chancellor of NC State, or upon the affirmative vote of two – thirds of all non-governmental members of the Executive Committee.

Notwithstanding termination of the Institute, if Members and NC State mutually agree, Members may continue with any approved research project for Institute Research in accordance with any available funding associated therewith. Rights in, and responsibilities with respect to, any data, computer software, inventions, copyrighted material or Confidential Information shall continue in force with respect to any completed, continuing or partially completed research projects for Institute Research.

Disposition of tangible property must comply with requirements contained in the terms and conditions of the Cooperative Agreement and with NC State's policies on equipment use, transfer and disposition. Arrangements for disposition of property shall be in accordance with any applicable contractual arrangements of the parties where DOE or NC State does not hold a property interest in property subject to disposition.

APPENDIX 1

1. Conflict of Interest Management
2. Confidential/Proprietary Information Plan
3. Export Control Procedures
4. Information Security Requirements

PowerAmerica™

Conflict of Interest Management

1. Purpose

The mission of PowerAmerica is to support and stimulate the wide band gap semiconductor manufacturing base and end user market in the U.S. to secure our global competitiveness, create jobs, and grow the economy. It is inevitable that conflicts of interest (“COI”) issues will arise in any large, complex organization with multiple institutions from different fields in industry, academia, and government. The Members of PowerAmerica (“the Institute”) are committed to establishing procedures to avoid or manage instances of actual or perceived COI that could affect the ability of the Institute to carry out its mission.

2. Introduction

A COI for the purpose of this document is a financial or personal interest that may compromise, have potential to compromise, or appear to compromise the objectivity of any individual or Member of the Institute in connection with Institute business. Because of the high visibility of the Institute and the considerable public investment in its mission, the appearance of any real or perceived COI will be managed and eliminated when possible. The Executive Director will be responsible for ensuring that the integrity of the Institute is maintained and that COI is managed effectively.

3. PowerAmerica COI Rules and Practices

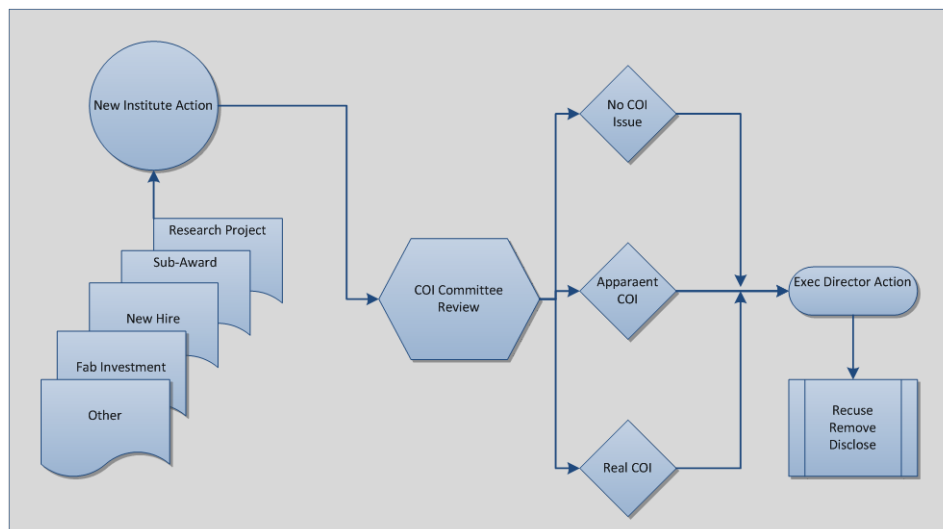
31 Each Institute Member is expected to apply its own policies and procedures for COI review and management. For example, all research carried out by NC State employees (or others conducting NC State research) will be subject to The University of North Carolina Policy Manual (300.2.2) “Conflict of Interest and Commitment” and NC State Regulation 01.25.01 “Conflicts of Interest and Conflicts of Commitment.” Other universities as well as industry members will be responsible for identifying and managing potential or actual COI of their officers, employees and agents in accordance with their policies.

32 When a Member proposes a project to the Institute, the Member will be required to certify that neither the Member nor any Member employee involved in the design, conduct or reporting of research in connection with the project has a personal or financial interest that has the potential to compromise, or would appear to compromise, the objectivity of the research results. The Institute will not review any proposal that is not accompanied by this certification.

33 The Institute will establish a COI Committee which will provide oversight, analysis, and recommendations to the Executive Director regarding COI issues associated with Institute activities to ensure that the activities further the objectives of the Institute, and not the individual Member/s or other parties, and that no organization or individual is unfairly rewarded. The responsibilities of the COI Committee will be to:

- Evaluate major Institute actions, including, but not limited to:
 - (1) Hiring of key staff;
 - (2) Contracting/procurement of equipment or services;
 - (3) Project selection;
 - (4) Manufacturing technology investments;
 - (5) Equipment acquisition and placement;
 - (6) Establishing technical goals; and
 - (7) Allocation of facility assets and lab access.
 (This is not intended to be an exhaustive list, but serves to highlight the types of situations the Committee is expected to examine.)
- Make recommendations to the Executive Director for processes to avoid, mitigate, neutralize, or manage any COI issues it identifies;
- Assist in the examination of any COI issues that are raised internally or externally;
- Assist the Executive Director in working with DOE to address any significant COI issues that arise in the operation of the Institute; and
- Monitor the COI practices and procedures of the Institute and make recommendations for amendments to this Conflict of Interest Management policy and to operational practices needed to ensure best practices.

Upon review of each Institute action, the Committee will report its findings to the Executive Director and make recommendations for actions to be taken to avoid, mitigate, or otherwise manage any perceived or actual conflict that is identified. The process for review by the COI Committee and subsequent actions is shown in Figure 1 below.



• **Figure 1. COI Committee**

It will be the responsibility of the Executive Director to act on the recommendations of the COI Committee.

34 The committee will be composed of the Director of Compliance, two Full Members, and a designated NC State official (and potentially a DOE representative). Any committee member who has a conflict in a particular situation will recuse him/herself from that particular evaluation. If the Executive Director has a conflict in a particular situation, then his/her authority will be delegated up to the NC State COI Compliance Officer. Recognizing that each situation must be examined individually (one size does not fit all), common sense, good judgment, and discretion is required in determining if a perceived or an actual conflict exists and prescribing the appropriate remedy. Both real and perceived/apparent conflicts will be managed.

35 Prior to receiving applications or other related information pertaining to the merit review process, all reviewers of project proposals will be required to acknowledge COI and nondisclosure requirements by filing the “Conflict of Interest and Nondisclosure Acknowledgement” form attached as Appendix A. Any individual with a COI may not participate in the merit review process, unless the COI Committee and Executive Director have decided that there is acceptable management of the identified conflict.

4. Resolution/Strategies for Managing Conflicts

When an individual or organizational COI is identified, specific actions will be taken to address the conflict. The COI Committee will review each occurrence individually and determine whether there is a real or apparent conflict and make an assessment of the severity of the conflict and measures that would be effective in avoiding or managing it.

Avoid – When reasonable alternatives to the identified COI are available, this is the preferred method for handling. Some alternatives are recusal, exclusion of sources, modification of requirements, or assignment of a task to a different individual or entity.

Manage – Acknowledge that a potential or actual conflict exists and that it is not possible or in the best interest of the Institute to avoid it altogether. In that case, the COI Committee will assist the Member to develop a COI management plan that is specific to the individual circumstances and that will minimize the risk to the reputation of the individual, the Member, and the Institute. Examples of management tools/options include:

- Recusal of an individual from a specific selection or evaluation process
- Monitoring the process by independent external reviewers
- Modification of the research plan or project scope
- Disqualification from participation in all or a portion of a project
- Assigning a Co-PI to a research project
- Divestiture of significant financial interests
- Resignation from outside organizations
- Severance of relationships that create actual or potential conflict.

The COI management plan must be updated on an annual basis for as long as the COI exists with respect to an Institute activity.

5. No Funds to be Disbursed without Management of COI

When a personal or financial interest would appear to compromise or would compromise the performance of research or any other activity undertaken by the Institute or its Members, no funds for the research or activity will be disbursed until a management plan has been approved by the COI Committee and the Executive Director of the Institute.

APPENDIX A

Conflict of Interest and Nondisclosure Acknowledgement

This acknowledgement must be completed by individuals prior to receiving applications or other related information pertaining to, and participation in, the PowerAmerica (“Institute”) project review process. The acknowledgement provides for each reviewer to understand conflict of interest and nondisclosure requirements associated with their participation in the project proposal review. Individuals with a conflict of interest may not participate in the review process unless the Institute Conflict of Interest Committee and the Executive Director have agreed that there is acceptable mitigation of the identified conflict. In no event may individuals involved in the review process appropriate for their own use or disclose information obtained during the review process.

In anticipation of my participating as a reviewer for _____
I, _____ (Print Name), acknowledge the following:

- (a) I understand that during the course of performing review services, I may obtain access to confidential or proprietary business, technical, or financial information belonging to the Institute, the Government or other entities, including information relating to the submission of applications and other information in connection with funding opportunities.
- (b) To the best of my knowledge and belief, no conflict of interest exists that may either:
 - (1) Result in my participation on a particular matter involving a funding opportunity that will have a direct and predictable effect upon my financial interest;
 - (2) Diminish my capacity to impartially assist in the review of applications in response to the funding opportunities; or
 - (3) Result in a biased opinion or unfair advantage.
- (c) In making the above statement, I have considered all the following factors that might place me in a position of conflict, real or apparent, regarding funding opportunity information:
 - (1) All my stocks, bonds, other outstanding financial interests or commitments;
 - (2) All my employment arrangements (past, present, and under consideration); and
 - (3) All financial interests and employment arrangements of my spouse, minor children, and other members of my immediate household as well as my general partners, or any organization in which I serve as an officer, director, or trustee, or with whom I am negotiating for employment.
 - (4) Any examples of relationships that might create an appearance of a conflict regarding this particular funding opportunity that have been provided to me.
- (d) I have a continuing obligation to disclose any circumstance that may create an actual or apparent conflict of interest. If any person, firm, or organization with which, to my knowledge, I (including my spouse, minor children, and other members of my immediate family) have a financial interest, or with which I have (or had) an employment arrangement,

submits an application or otherwise becomes involved in, or is discovered to be involved in, the subject funding opportunity.

- (e) If I learn of any such conflict, I will report it immediately to the Institute Executive Director, and I will perform no more duties related to the funding opportunity until I receive instructions on the matter.
- (f) I will notify the Institute Executive Director, and thereafter, until advised to the contrary, I will not participate further in any way (by rendering advice, making recommendations, voting, or otherwise) in the evaluation process.
- (g) I agree that unless authorized by the Executive Director, I will not contact the originator of the application concerning any aspect of its contents.
- (h) I agree to treat this information as proprietary and confidential and comply with the PowerAmerica Confidential/Proprietary Information Plan for the protection of such information (including electronic information) and use my best efforts to safeguard such information. I will not disclose the contents of, nor release, any such information to anyone either during or after the review process other than:
 - (1) To individuals within the review process that are directly concerned with the performance of this effort and who have executed this Conflict of Interest and Nondisclosure Acknowledgement;
 - (2) To other individuals designated by the Executive Director; or
 - (3) Pursuant to an order from a court of competent jurisdiction.
- (i) Whenever the Institute or any individual furnishes any funding information to me for the purpose of the proposal review process, I, the recipient, agree to use such information only for the purpose of conducting the review and to treat the information obtained in confidence. Further, I will not use such information for my own private gain or the private gain of others. This requirement for confidential treatment applies to information obtained from any source, including the submitter, without restriction. Upon completion of my duties, I will return all copies to the Executive Director or designee or to the office that initially furnished such information or I will destroy the files (paper and electronic) and certify to the Executive Director that I have done so; provided, however, that I may retain one copy for my company's recordkeeping purposes in accordance with its record retention policies. I shall have no obligation to destroy or delete any such information that may be stored on any backup tapes or similar media of my company that are used for historical or recovery purposes, as long as such backup tapes or similar media are maintained in accordance with the requirements of this Acknowledgement and deleted or destroyed in accordance with the company's record retention policies.

Signature/Date: _____

Name/Title: _____

Phone number: _____

Email address: _____

3 EXAMPLES OF POSSIBLE REAL OR APPARENT CONFLICTS

1. AFFILIATION WITH AN APPLICANT INSTITUTION

(In this document, “Institution” will be used to mean the inclusive set of all types of institutions, organization, companies, or other entities.)

You may have a conflict, subject to possible mitigation if agreed to by the Executive Director after notification and consideration, if you have/hold/are:

- Current employment at the institution in any capacity
- Other current employment with the institution as a consultant or advisor
- Previous employment with the institution within the last 12 months
- Being considered for employment at the institution
- Formal or informal reemployment arrangement with the institution
- Ownership of securities of companies involved in the application.
- Current membership on a visiting committee or similar body at the institution
- Any office, governing board membership, or relevant committee chairpersonship in the institution (Ordinary membership in a professional society or association is not considered an office.)
- Current enrollment as a student at that institution
- Received and retained an honorarium or award from the institution within the last 12 months
- Some other business or financial relationship

2. RELATIONSHIPS WITH AN INVESTIGATOR, PROJECT DIRECTOR, OR OTHER PERSON WHO HAS A PERSONAL INTEREST/ROLE IN THE APPLICATION

- Known family relationship as spouse, child, sibling, or parent
- Business or professional partnership
- Past or present association as thesis advisor or thesis student
- Recent collaboration on a project or on a book, article, report, paper, journal, compendium, or conference proceedings

3. OTHER AFFILIATIONS OR RELATIONSHIPS

- Interests of the following persons are to be treated as if they were yours: Any affiliation or relationship of your spouse, of your minor child, or a relative living in your immediate household or of anyone who is legally your partner.
- Other relationship (including but not limited to a close personal friendship, a person with whom the reviewer has a longstanding difference, a recent student or teacher, or a former employer) that you think might tend to affect your judgment or be seen as doing so by a reasonable person familiar with the relationship.

PowerAmerica™
Confidential/Proprietary Information Plan

1. Commitment to the Protection of Confidential/Proprietary Information

1.1 Recognizing that a critical element of PowerAmerica (or “Institute”) will be the operation of a shared R&D infrastructure, with collaborations among process design and product manufacturers, among educational institutions, other non-profit research organizations, and private industry with differing and sometimes competitive interests, Institute Members commit to working together, individually and collectively, to protect the confidential proprietary information of Institute and its individual Members. Activities of the Members shall be in accordance with the PowerAmerica Bylaws, which are incorporated herein by reference, in their entirety. To the extent there is any inconsistency between the PowerAmerica Bylaws and this Information Plan, the PowerAmerica Bylaws shall control.

1.2 Institute shall promptly appoint a committee (“Proprietary Information Committee”) to assist in implementing the policies and procedures set forth in the Institute Bylaws for identifying and managing the protection of confidential proprietary information, including that which may support statutory intellectual property protection (such as Patent, Copyright, or Mask Work protection), and that which may not, as in the case of manufacturing processes and/or designs that may require or be better suited to trade secret protection in order to provide competitive advantage to the U.S. semiconductor manufacturing industry.

1.3 Institute Members shall take the steps outlined below and set forth in the Institute Bylaws to ensure that confidential proprietary information is protected.

2. Committee Structure

2.1 Proprietary Information Committee. The Proprietary Information Committee will be composed of individuals with expertise in all of the relevant sectors to be represented (either through direct representation on the committee or as paid consultants) and at least one non-voting *ex officio* representative of DOE. Institute’s Chief Technology Officer will chair this Committee and be responsible for implementing and administering this Information Plan, and ensuring compliance with the Institute policies set forth in the Institute Bylaws to protect confidential proprietary information. The DOE committee members shall have no fiduciary duty to the Institute or its members.

2.2 Meetings. The Proprietary Information Committee shall meet at least quarterly or at the call of the Chairperson of the Proprietary Information Committee or delegate.

3. Compliance

3.1 Commitment to Compliance. Applied research activities at Institute involving production technology will likely require participating members to share with Institute highly sensitive and confidential proprietary information, some of which may be maintained as a trade

secret, as well as the generation of trade secret information. Such information may relate to a formula, pattern, device, or other compilation of information that is used for a considerable period of time in manufacturing or technical or scientific information such as technology specifications, technology characteristics, test data, technical drawings or sketches, engineering specifications, proprietary processes, formulas, software code, semiconductor IP cores, databases, etc. **Such information shall not be disclosed to any individual or entity, whether within or outside Institute, who has not executed an appropriate confidentiality agreement. Furthermore, only those individuals who have executed an appropriate confidentiality agreement and have been appropriately vetted shall be allowed to work on projects that are determined to generate trade secret information prior to commencement of those projects.** Because of the varying nature of information that will be shared and competing interests, there is no “one size fits all” confidentiality agreement that can be used. The Proprietary Information Committee shall, however, draft and/or identify various agreements that shall be used to protect confidential information under recurring circumstances, and shall draft and/or identify agreements to be utilized on an individualized basis as necessary. All agreements will, however, be consistent with Article VII of the Bylaws. (Confidentiality)

32 Obligations of Institute Members with Respect to Confidential, Proprietary or Trade Secret Protection. All Institute Members shall implement systems and procedures designed to protect the information assets from disclosure to any person or entity not authorized to have access to that information, which must be reviewed and pre-approved by the Proprietary Information Committee. At a minimum, each Member shall implement those requirements found in the Membership Agreement and Bylaws, Appendix 1 (4), Information Security Requirements.

321 Physical Controls. Institute Members shall restrict access to paper and electronic records to prevent unauthorized access to information or records classified as confidential or proprietary or trade secrets; and limit access to only those employees who are duly approved, or cleared, to see them on a need-to-know basis. Institute Members shall implement protocols for proper labeling of records (e.g., with a stamp such as confidential or proprietary or trade secret) or using special colored folders (e.g., red or orange), and keep such marked records physically isolated or segregated in a secure area or in locked filing cabinets. In general, the labels should provide brief but clear direction to the user on how to handle the information. Proper access control through appropriate authorization and accountability and tracking system for employees provided access to confidential information is required. Other recommended physical controls may include (without limitation), defining where confidential proprietary information will be stored and avoiding moving such information from location to location; maintenance of access logs; and prohibiting cameras, phones with photographic capabilities, and/or other copying devices in the presence of such information.

322 Technical Controls. Institute Members shall maintain computer security by using technical safeguards that are adequate to protect the information contained in electronic or physical media files. For example, strong authentication protocols for system access, access control lists forcing limitation of access based on roles, and automated audit trails to enable system security personnel to trace any additions or changes back to whoever initiated them, and to indicate where and when the change was carried out. Other recommended technical controls can include (without limitation) disabling USB drives, printers, logging who accesses confidential

information, when it was accessed, what activities were performed; installing tracking software and/or mobile device management software; vetting third-parties for data security capabilities.

323. Administrative Controls. Institute Members shall create and enforce policies and procedures, and implement training and certification programs and requirements, related to their employees and/or independent contractors, which will be reviewed and authorized by the Proprietary Information Committee on an annual basis. Recommended administrative controls may include (without limitation): Onboarding checklists and exit interview policies and procedures that make joining and departing employees aware of their obligations to Institute related to confidentiality and trade secrets; vetting new employees to ensure that they are not bound by contractual obligations, such as non-competes and intellectual property agreements, with former employers that are in conflict with Institute objectives; work from home policies and procedures; social media and internet usage policies and procedures, cellular/smart phone usage policies; annual trade secret audits; employment and/or independent contractor agreements that include confidentiality, non-analysis, non-compete, and patent assignment clauses; mandatory training of all employees and independent contractors on the protection of confidential proprietary information and trade secrets; and penalties for non-compliance or disclosure by employees and/or independent contractors.

324. Authorization and Enforcement. The Proprietary Information Committee shall have the final authority to approve Institute Member's proposed controls, to require that additional and/or alternative controls be implemented, to amend or revise existing controls, and to create any policies, procedures, agreements, training programs, or the like, that are mandated by the Proprietary Information Committee to ensure consistency among Institute Members. Institute Members shall provide annual certifications of compliance with the protections, policies, and procedures set forth herein (as authorized or amended by the Proprietary Information Committee), and of full participation by employees and independent contractors in training programs. The Proprietary Information Committee shall have the authority to impose sanctions for non-compliance, including suspension or removal from Membership without recourse to fee refund and indemnity of NC State, the Institute, DOE, the federal government, or another Member due to a Member's non-compliance.

PowerAmerica™

Export Control Procedures

1. Export Control Compliance Commitment.

1.1 Exports from the United States are regulated by the International Traffic In Arms Regulations (“ITAR”) or the Export Administration Regulations (“EAR”). The ITAR, which is administered by the Directorate of Defense Trade Controls (“DDTC”) of the Department of State, regulates the export of defense related articles and technical data. The EAR, which is administered by the Bureau of Industry and Security (“BIS”) of the Department of Commerce, regulates the export of non-defense articles and technology.

1.2 With limited exception, the ITAR requires persons to obtain the approval of the DDTC before exporting any defense article or technical data. Regulating a wider range of articles and technology than the ITAR does, the EAR regulatory scheme is more complex. The EAR may, or may not, require persons to obtain the approval of the BIS before exporting non-defense articles or technology depending on the country of destination and the particular article or technology to be exported. Generally, the less friendly the country of destination is to United States’ interests and the more sophisticated the article or technology, the more likely it is that the EAR requires the approval of BIS before exporting.¹

1.3 Significant civil and/or criminal fines and prison sentences can be imposed on persons violating the ITAR or EAR. Members of PowerAmerica understand that materials and information used in and/or resulting from the performance of work in the PowerAmerica program may be subject to export control laws (ITAR and EAR) and that each Member is responsible for its own compliance with such laws, the Export Control Procedures set forth in this document, and the EERE/NC State Cooperative Agreement (EE00006521). Failure to obtain an export control license or other authority required by law from the U.S. Government may result in civil and/or criminal liability under applicable laws and regulations, forfeiture of subcontract funds received under the Cooperative Agreement, expulsion from the Institute, and indemnification of NC State, the Institute, DOE, the federal government, and other Members for any monetary damages caused by non-compliance.

¹ The term “export” means any “Item” that is sent from the U.S. to a foreign destination including
(a) to anyone outside the U.S. including U.S. citizens or
(b) to foreign entities, individuals, embassies or affiliates at any location, including the U.S.
(deemed export).

The term “Item” includes, but is not limited to, commodities, software or technology, and technical information.

2. ITAR and EAR Overview.

21 ITAR Overview.

The ITAR identifies the articles subject to regulation (i.e. Defense Articles) on the United States Munitions List (“USML”). The USML is comprised of 21 categories of articles. (22 C.F.R. §121.1.) The ITAR defines “Technical Data” broadly to include “[i]nformation... required for the design, development, production, manufacture, assembly, operation, repair, testing, maintenance, or modification of defense articles.” (22 C.F.R. §121.1.) With limited exception, the ITAR requires persons to obtain the approval of the DDTC before exporting any defense article of technical data.

The ITAR imposes added requirements on the export of “significant military equipment” and technical data related thereto. Articles of significant military equipment are identified by an asterisk on the USML.

22 EAR Overview.

The EAR does not contain an equivalent of the USML. Rather, the EAR regulates the export of all articles and technology which are not regulated by the ITAR (or, to a limited extent the Department of Energy with respect to nuclear related articles). The EAR defines “technology” broadly to include “[s]pecific information necessary for the development, production or use of a product.” (15 C.F.R. §772.1.)

The EAR may, or may not, require persons to obtain the approval of the BIS before exporting non-defense articles or technology depending on the country of destination and the particular article or technology to be exported. The Export Control Classification Number (“ECCN”) is the key to determining whether or not approval to export is required. The EAR includes a Commerce Control List consisting of 10 separate categories of articles. Each category contains a number of sub-categories, ECCNs, specifically identifying the articles or technology falling under each. The ECCN will identify if export of the articles or technology identified in the ECCN are subject to control, and if so the reasons for the control. (15 C.F.R. §774.)

Knowing the reason(s) for controlling the export of the article or technology, the Commerce Country Chart identifies if the approval of the BIS is required before exporting the article or technology. (15 C.F.R. §738.4.)

If an article or piece of technology cannot be identified under a specific ECCN, it is categorized, by default, under EAR 99. Articles and technology falling under EAR 99 can be exported to most countries without the need of approval from the BIS.

23 Deemed Exports of Technical Data or Technology.

Both the ITAR and the EAR define “export” to include disclosing technical data or technology to persons who are not citizens or permanent residents of the United States (or protected refugees). (22 C.F.R. §120.16(a)(4.)) (15 C.F.R. §730.5(c).) Thus, with limited exceptions, one must obtain the approval of the DDTC before disclosing defense related

technical data to persons who are not citizens or permanent residents of the United States (or protected refugees). One may, or may not, be required to obtain the approval of the BIS before disclosing non-defense related technology to persons who are not citizens or permanent residents of the United States (or protected refugees) depending on the nationality of the person to whom the technology is to be disclosed and the sophistication of the technology.

Deemed exports include disclosures made in the United States to persons who are not citizens or permanent residents of the United States (or protected refugees).

Disclosure can be made in a variety of ways, *e.g.* via disclosure of written material, verbal communications, presentations, observance of export controlled articles, etc.

Especially because of the likely participation by foreign scientists and students in the PowerAmerica program, PowerAmerica Members must ensure that they have a system in place to prevent the possibility of deemed exports.

2.4. Public Domain Or University Related Exceptions.

The ITAR and the EAR contain exceptions allowing the disclosure of technical data or technology that is in the public domain or is commonly taught in universities without the approval of the DDTC or BIS. (22 C.F.R. §120.10(a)(5).) (15 C.F.R. §734.3(b)(3), 7, 8 and 9.) When University Members' research is "fundamental research" as defined by 15 C.F.R. Part 734.8, it is excluded from the applicability of export control laws.

3. Compliance Manager.

The North Carolina State University ("NC State") shall select, hire and appoint a person to the position of Director of Compliance whose responsibilities shall include, but not be limited to, developing and implementing an export law compliance program for PowerAmerica. The Compliance Manager is specifically responsible for, among other things: (i) developing a training module (*See* Art. 4.1.), (ii) maintaining a library of proposed and approved project submissions including export control analysis (*See* Art. 4.2.), (iii) coordinating with the U.S. Department of Energy (DOE), (iv) maintaining a library of PowerAmerica program document summaries (*See* Art. 4.3.), (v) maintaining a record of voluntary disclosures by PowerAmerica Members (*See* Art. 4.6.), (vi) maintaining a list of PowerAmerica Members registered with the DDTC (*See* Art. 4.7.), (vii) maintaining a library of PowerAmerica Members' certifications (*See* Art. 4.8.), and (viii) periodically reviewing PowerAmerica Members compliance with the ITAR, the EAR and this Article 3.

4. Required Compliance Measures.

4.1. Training.

Members' employees participating in any Power America research shall attend an on-line training program to be provided by the Director of Compliance prior to, or within one month after, starting work on the PowerAmerica program and annually thereafter. Members'

employees will certify attendance in the manner provided by the Director of Compliance with a certification substantially as follows:

[Member Employee] hereby certifies that he/she is knowledgeable of, agrees to abide by, and is in compliance with the requirements of the International Traffic In Arms Regulations and the Export Administration Regulations in the performance of efforts under this PowerAmerica program.

4.2. Submission Of Planned Projects.

Prior to commencing any project, PowerAmerica Members shall advise the Director of Compliance of: (i) the name of the project, (ii) the description of the project, (iii) the identification of the USML category(ies) under which the project or technical data falls and whether such constitutes significant military equipment (if the project is defense related), (iv) the identification of the ECCN(s) under which the project or technology related falls (if the project is non-defense related), (v) whether the approval of the DDTC or the BIS is required to export the project or technical data or technology related thereto, (vi) any exceptions which would allow the Members to export the project or technical data or technology related thereto without the otherwise required approval of the DDTC or the BIS, and (vii) in what format technical data or technology will be maintained (e.g. identify the name of any specifications).

The Director of Compliance will notify the Members in writing of any concern with the Members' analysis of the required export control, but it will be the obligation of the Members to ensure compliance with export control laws in the performance of the project.

4.3. Advance Notification To The Director of Compliance.

Insofar as a Member engages in activities involving the use of export controlled information, items or technology, or conducts research involving the use of export-restricted technology, as determined by applicable United States law, such Member shall inform the Director of Compliance one week in advance of exporting any PowerAmerica program related Item, or engaging any person who is not a citizen or permanent resident of the United States (or a protected refugee) in any PowerAmerica program. Such Member shall advise the Director of Compliance of: (i) the Item to be exported or to be disclosed to persons not citizens or permanent residents of the United States (or a protected refugee), (ii) the country of destination or the name(s) and nationalities of persons to whom the Item will be disclosed, (iii) whether or not the approval of the DDTC or the BIS is required before exporting the Item to persons not citizens or permanent residents of the United States (or a protected refugee), and (iv) if the Member believes that approvals are not required, the reason(s) for their belief.

The Director of Compliance will notify the Member in writing of any concern with the proposed export or disclosure, but it will be the obligation of the Member to ensure compliance to include, if necessary, obtaining a Classification Request determination from the Department of Commerce.

4.4. Documenting Project Information.

PowerAmerica Members shall document technical data or technology developed under projects under the PowerAmerica program in writing. That writing shall identify: (i) the title of the document (the name should be descriptive of the information contained in the document), (ii) the USML category(ies) and/or ECCN(s) applicable to any data included in the document, (iii) the name(s) of the principal author(s) of the document, and (iv) contact information for persons to whom questions regarding the document should be directed.

PowerAmerica Members shall advise the Director of Compliance of the immediately above referenced information within 10 days of the date of creation of the document.

PowerAmerica Members shall mark all documents containing technical data or technology related to the PowerAmerica program with one of the following legends (whichever is applicable) or some similar legend:

This document contains information the export of which is regulated by the International Traffic in Arms Regulations. Exports of this document or disclosure of its contents to any person who is not a citizen or permanent resident of the United States (or a protected refugee) without the prior approval of the Directorate of Defense Trade Controls is prohibited.

This document contains information the export of which is regulated by the Export Administration Regulations. Exports of this document or disclosure of its contents to any person who is not a citizen or permanent resident of the United States (or a protected refugee) without the prior approval of the Bureau of Industry and Security may be prohibited.

This document does not contain information which requires the approval of the Directorate of Defense Trade Controls or the Bureau of Industry and Security prior to export or disclosure to a person who is not a citizen or permanent resident of the United States (or protected refugee).

The Director of Compliance shall maintain a library of the information set forth in the first paragraph of this Article 4.4. The U.S. Department of Energy shall, upon request, be given access to such library.

4.5. Records Retention.

PowerAmerica Members shall maintain for a period of 5 years following completion of the PowerAmerica program, records of: (i) any documents created pursuant to Article 4.4 and (ii) any export approvals received from the DDTC or the BIS.

4.6. Voluntary Disclosures.

PowerAmerica Members shall inform in writing the Director of Compliance within 5 days of making voluntary disclosures of violations or possible violations of the ITAR or EAR related to Members' performance of Institute research generally describing the nature of reported violations or possible violations and any corrective actions taken. Unless the disclosing Members

otherwise agree, the Director of Compliance shall not further disclose such information to any party except the U.S. Department of Energy (and then only with the U.S. Department of Energy's agreement not to further disclose such information except as required by law).

4.7. ITAR Registration.

PowerAmerica Members who are involved in the export or manufacture of defense related articles or technical data shall register with the DDTC. (22 C.F.R. §122.1(a).) Such PowerAmerica Members shall advise the Director of Compliance of their registration.

4.8. Compliance Director Reviews.

Members will certify annually that they are in compliance with all applicable export control laws, regulations, and with these Procedures. PowerAmerica Members shall cooperate fully in any review by the Director of Compliance and/or DOE of the Members' compliance with the ITAR, the EAR. The Members shall remain responsible for the acts and omissions of their officers, directors, employees, and agents.

4.9 Notification of Significant Export Control Issues

The Director of Compliance will notify DOE of any significant Export Control issues within three business days after receiving information of such issues.

PowerAmerica™

Information Security Requirements

1. Approach

1.1 PowerAmerica Members will use all reasonable, appropriate, practical and effective security measures to protect Institute important processes and assets in order to achieve our security objective

1.2 Members will protect and manage our information assets, including those entrusted to us by other Members, to enable us to meet our contractual, legislative, privacy and ethical responsibilities.

2. Practices

2.1 Access Control (AC): Members must limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems) and to the types of transactions and functions that authorized users are permitted to exercise.

2.2 Awareness and Training (AT): Members must: (i) ensure that managers and users of organizational information systems are made aware of the security risks associated with their activities and of the applicable laws, policies, standards, instructions, regulations, or procedures related to the security of organizational information systems; and (ii) ensure that organizational personnel are adequately trained to carry out their assigned information security-related duties and responsibilities.

2.3 Audit and Accountability (AU): Members must: (i) create, protect, and retain information system audit records to the extent needed to enable the monitoring, analysis, investigation, and reporting of unlawful, unauthorized, or inappropriate information system activity; and (ii) ensure that the actions of individual information system users can be uniquely traced to those users so they can be held accountable for their actions.

2.4 Certification, Accreditation, and Security Assessments (CA): Members must: (i) periodically assess the security controls in organizational information systems to determine if the controls are effective in their application; (ii) develop and implement plans of action designed to correct deficiencies and reduce or eliminate vulnerabilities in organizational information systems; (iii) authorize the operation of organizational information systems and any associated information system connections; (iv) monitor information system security controls on an ongoing basis to ensure the continued effectiveness of the controls and (v) certify annually to the PowerAmerica Compliance Manager and NC State Security & Compliance that they meet the standards for security described below.

2.5 Configuration Management (CM): Members must: (i) establish and maintain baseline configurations and inventories of organizational information systems (including hardware, software, firmware, and documentation) throughout the respective system development

life cycles; and (ii) establish and enforce security configuration settings for information technology products employed in organizational information systems.

2.6 Contingency Planning (CP): Members must establish, maintain, and effectively implement plans for emergency response, backup operations, and post-disaster recovery for organizational information systems to ensure the availability of critical information resources and continuity of operations in emergency situations.

2.7 Data Classification (DC): Members must establish, maintain, and effectively implement policies and procedures to assess and classify the different kinds of data which the Member will (i) receive from its clients or other third-parties; (ii) develop on its own while providing services to clients; and (iii) receive directly from data subjects.

2.8 Identification and Authentication (IA): Members must identify information system users, processes acting on behalf of users, or devices and authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.

2.9 Incident Response (IR): Members must: (i) establish an operational incident handling capability for organizational information systems that includes adequate preparation, detection, analysis, containment, recovery, and user response activities; and (ii) track, document, and report incidents to appropriate organizational officials and/or authorities.

2.10 Maintenance (MA): Members must: (i) perform periodic and timely maintenance on organizational information systems; and (ii) provide effective controls on the tools, techniques, mechanisms, and personnel used to conduct information system maintenance.

2.11 Media Protection (MP): Members must: (i) protect information system media, both paper and digital; (ii) limit access to information on information system media to authorized users; and (iii) sanitize or destroy information system media before disposal or release for reuse. Physical and Environmental Protection (PE): Members must: (i) limit physical access to information systems, equipment, and the respective operating environments to authorized individuals; (ii) protect the physical plant and support infrastructure for information systems; (iii) provide supporting utilities for information systems; (iv) protect information systems against environmental hazards; and (v) provide appropriate environmental controls in facilities containing information systems.

2.12 Planning (PL): Members must develop, document, periodically update, and implement security plans for organizational information systems that describe the security controls in place or planned for the information systems and the rules of behavior for individuals accessing the information systems.

2.13 Personnel Security (PS): Members must: (i) ensure that individuals occupying positions of responsibility within organizations (including third-party service providers) are trustworthy and meet established security criteria for those positions; (ii) ensure that organizational information and information systems are protected during and after personnel

actions such as terminations and transfers; and (iii) employ formal sanctions for personnel failing to comply with organizational security policies and procedures.

2.14 Risk Assessment (RA): Members must periodically assess the risk to organizational operations (including mission, functions, image, or reputation), organizational assets, and individuals, resulting from the operation of organizational information systems and the associated processing, storage, or transmission of organizational information.

2.15 System and Services Acquisition (SA): Members must: (i) allocate sufficient resources to adequately protect organizational information systems; (ii) employ system development life cycle processes that incorporate information security considerations; (iii) employ software usage and installation restrictions; and (iv) ensure that third-party providers employ adequate security measures to protect information, applications, and/or services outsourced from the organization.

2.16 System and Communications Protection (SC): Members must: (i) monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems; and (ii) employ architectural designs, software development techniques, and systems engineering principles that promote effective information security within organizational information systems.

2.17 System and Information Integrity (SI): Members must: (i) identify, report, and correct information and information system flaws in a timely manner; (ii) provide protection from malicious code at appropriate locations within organizational information systems; and (iii) monitor information system security alerts and advisories and take appropriate actions in response.

3. Security Control Selection

3.1 NC State University Security and Compliance unit will develop and coordinate an information security program that ensures the Institute information systems and data are protected according to the NIST Special Publication 800-53, *Recommended Security Controls for Federal Information Systems*. All Members or subcontractors who participate in sharing sensitive data during the course of their participation in Institute activities will be required to certify that they meet the NC State Security & Compliance unit's information security standards through an annual verification process.

3.2 The Institute must engage in a multifaceted, risk-based activity involving management and operational personnel to categorize the security of Institute information and information systems, as described by FIPS Publication 199.

3.3 Subsequent to the security categorization process, the Institute must select an appropriate set of security controls for its information systems that satisfies the minimum security requirements set forth in the Institute's Information Security Requirements. The selected set of security controls must include one of three, appropriately tailored security control baselines from NIST Special Publication 800-53 that are associated with the designated impact

levels of the organizational information systems as determined during the security categorization process.

3.3.1 For low-impact information systems, the Institute must, at a minimum, employ appropriately tailored security controls from the low baseline of security controls defined in NIST Special Publication 800-53 and must ensure that the minimum assurance requirements associated with the low baseline are satisfied.

3.3.2 For moderate-impact information systems, the Institute must, at a minimum, employ appropriately tailored security controls from the moderate baseline of security controls defined in NIST Special Publication 800-53 and must ensure that the minimum assurance requirements associated with the moderate baseline are satisfied.

3.3.3 For high-impact information systems, the Institute must, at a minimum, employ appropriately tailored security controls from the high baseline of security controls defined in NIST Special Publication 800-53 and must ensure that the minimum assurance requirements associated with the high baseline are satisfied.

3.3.4 The Institute must employ all security controls in the respective security control baselines unless specific exceptions are allowed based on the tailoring guidance provided in NIST Special Publication 800-53.

4. Enforcement

4.1 Members, subcontractors or others with access to sensitive information during the course of their activities with the Institute must meet the minimum security requirements established by the NC State University Security and Compliance unit. Failure to comply with the Institute's Information Security Requirements could harm the ability of the Institute to achieve its aims and security objectives and could damage the professional reputation of the Institute. Failure to comply will constitute a breach of the Membership Agreement and result in loss of membership without refund of membership fees. Further, the responsible Member must indemnify NC State, the Institute, DOE, the federal government, or other Members for any monetary damages caused by the non-compliance.