Planet Positive 2030

Imagine the Future We Can Build Together

Welcome!

If you've arrived at this page that means you're interested in learning more about and hopefully joining **The Planet Positive 2030 Campaign** created by a global, open community of experts supported by IEEE, the world's largest technical professional organization Advancing Technology for Humanity. We've designed this site to provide you with as much background information as you'll need to join our **Planet Positive 2030 Community**.

How To Get Involved

We have three ways to get involved in our work at this time:

- **Newsletter/Join the Community**. You're busy but supportive - thanks! We'll send you updates and invites.
  - Newsletter Sign Up Here. Note - this newsletter is focused on AI, Ethics and Sustainability.
- **Join a Committee/Create Content**. Learn about our committees to see which one(s) you'd like to join.
- **Review/Edit Content**. You'd like to provide critique and feedback once docs are done. Thank you.

For any option, at any time while you're reading this document, just email us with "Planet Positive 2030" in the subject line and tell us which of these three options you're interested in within the body of your email. If you'd like to join a Committee, please make sure to tell us the name(s) of the Committees you'd like to join.

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Our Call to Collaborative Action:

Please join our Planet Positive 2030 Community to co-develop:

1. Planet Positive 2030 Roadmap Compendium document, called ***Strong Sustainability by Design*** (SSbD) will be informed by a global, multi-disciplinary process intended to inspire action-oriented standards while informing business and policy with a new vision for responsible sustainability in technological design and use. Committees will be formed based on the Chapters described below.

2. Impact Accountability Assessment Framework Tool*, called* ***Accountable Sustainability by Design*** (ASbD) will be initially informed by Committees writing chapters for *Strong Sustainability by Design*. The goal of this shorter document is to provide a pragmatic, technological design and assessment tool utilizing Indicators such as the UN SDGs, or ESGs that can help guide the creation of sustainable technologies via accountable, quarterly (regular and ongoing) Key Performance Indicators.

We seek and encourage the commitment, engagement, and participation of the following experts:

- Technologists - A non exclusive term for engineers, scientists and active builders of Climate Positive tech.
- Researchers/Academics - A general term for anyone *(including students)* researching / teaching in fields of sustainability, sustainable tech, social sciences, law, human rights or any discipline where the focus is the planet..
- Industry/Business *(SMEs and larger)* - A general term for anyone working in a corporation trying to best incorporate sustainability practices via ESG *(Environmental Social Governance)* UN SDG, or other metrics *(as new KPIs for overall success)*.
- Policy Makers - A general term we use for anyone working in government to address Climate Positive issues.
- Civil Society/Nongovernmental Organizations.
- Citizens: We welcome all voices into this process, especially from a DEI (Diversity, Equity and Inclusion) mindset, recognizing that Disproportionate Impacts of Climate Change on Socially Vulnerable Population[1]. We also hope to deeply involve indigenous people in this process since indigenous peoples are among the first to face the direct consequences of climate change, due to their dependence upon, and close relationship, with the environment and its resources[2].

[1] EPA Report Shows Disproportionate Impacts of Climate Change on Socially Vulnerable Populations in the United States, US Environmental Protection Agency. While this quote relates to the United States, this connection is a global phenomenon as evidenced by the report from the Department of Economic and Social Affairs, Climate Change and Social Inequality based on the World Economic and Social Survey (WESS) from 2016 devoted to the topic, "Building Resilience to Climate Change – An Opportunity to Reduce Inequalities."

[2] Climate Change, United Nations Department of Economic and Social Affairs, Indigenous Peoples.

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Strong Sustainability by Design **(SSbD): The Roadmap Compendium Document**

We wish to express deep gratitude to any existing programs within the larger IEEE family *(Operating Units, Societies, other programs)* working on areas of energy or sustainability. We recognize the deep expertise, vast investment of time, and existing work being done in this arena for many years.

A key focus of the work of *Strong Sustainability by Design* (SSbD) is to highlight your work and not to reinvent any wheels. We'd love for multiple experts from your programs to participate on any or all committees below, so that you can best help experts from other disciplines "translate" your learnings into new contexts, for new voices, for a Climate Positive Future.

Welcome to Non-IEEE Experts / All

We wish to express deep gratitude to any new volunteers and voices to the Climate Positive 2030 Community. What we learned in a similar multidisciplinary process with *Ethically Aligned Design* *(focused on Artificial Intelligence Systems and ethics)* was that when volunteers from non-Western regions *(as we began our work with experts from North America, the EU and the UK and then asked for feedback)*, multiple disciplines beyond engineering and academia, young people and marginalized voices joined the work, a deeper communication and impact took place from where we began our process.

This work of deep connection for a Climate Positive Future depends on the technical, societal, and governance communities working to communicate with clarity and impact to each other so they can do the same for readers.

How to Volunteer or Provide Feedback

To volunteer for any Committees listed below, email us and let us know which committee(s) you'd like to join.

Please also include a short bio and a 2-5 sentence statement about why you'd like to be involved in this process along with your organizational affiliation (or "self" if preferred). Please also feel free to send recommendations for articles / videos / resources to include in our work, or other individuals or organizations you feel should join. Please let us know if we can use your bio and information to introduce you to your fellow committee members, *but note we will not share your email information at any time*.

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Chapters / Committees

These Committees will function via a process including cross-pollination with multidisciplinary feedback. Meaning, we will have regular Town Hall webinars and other processes designed to help committees learn from each other while our writing processes are taking place.

- **Introduction** (featuring the background, vision and methodology for SSBD)
  - This will be written after completion of other chapters. No volunteers needed at this time, but we will ask for "Editors" for this section later in the process.
  - *(Committee / Chapter One).* **Guiding Principles** (featuring Principles submitted from all committees as part of overall process)
  - Includes aggregation of IEEE Guidelines for Sustainability, Environmental Stewardship, and Climate change. *(This document will be introduced to the Committee in draft form).*
  - Indigenous Sustainability / Rights
  - Diversity, Equity and Inclusion (DEI)
  - Environmental Justice
- *(Committee / Chapter Two)* **Metrics / Indicators** *(focusing on ESGs, UN SDGs)*
  - This committee is to determine which metrics of success, including and beyond growth / fiscal metrics, need to be considered to reach 50% Net Zero goals by 2030.
  - The focus of this committee will also be to identify which metrics have deep global acceptance and honor or feature the connection between the Global North and Global South and the rest of the world's regions.
  - *(Committee / Chapter Three)* **Economics / Regulation** (focusing on best practices from circular economy, green economy, Doughnut Economy).
  - *(Committee / Chapter Four)* **Global Methodologies** (focusing on IEEE 7010 Sustainability Impact Assessment, Framework for Strategic Sustainable Development (FSSD)
- **Ecosystems**[3]: The naming of these six committees comes from the UN Environmental Program focus on Ecosystem Restoration.

[3]Logic based on the UN Environmental Program focus on Ecosystem Restoration, which has the compelling idea of the "Decade for Ecosystem Restoration" (2021-2030). Rather than create a dozen or more committees based on specific technical areas, it is our recommendation that members from IEEE programs provide members in multiple committees to provide cross-pollination sector expertise.

While we could separate chapters into specific sustainable tech areas (eg, Solar, Wind Power), our logic is to invite experts from any / all of those technical areas to join more than one Committee as their technologies are likely used in more than one ecosystem.

This will naturally allow them to teach their multidisciplinary committee colleagues new information that can then be disseminated on a potentially more broad and impactful basis than if certain technologies were considered in isolation.

- *(Committee / Chapter Five)* **Forests and Trees**
- *(Committee / Chapter Six)* **Rivers and Lakes**
- *(Committee / Chapter Seven)* **Towns and Cities**
- *(Committee / Chapter Eight)* **Oceans and Coasts**
- *(Committee / Chapter Nine)* **Farmlands and Grasslands**
- *(Committee / Chapter Ten)* **Mountains and Peatlands**
- *(Committee/ Chapter Eleven)* **Sustainability Commons**
- **Conclusion**

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Chapter Guidelines

Each of our 11 committees will formulate their chapters for Strong Sustainability by Design in the following way:

- *Before writing, Committees will follow Mila Aliana's Weaving / Community building process*:
    - All committee members bring one object to the call that they feel connects them to the planet. This could be a photo of a camping trip with their kids, or a technology oriented project they helped lead and implement. The logic is to help members ground themselves so they can connect to their heart. Have them shut their eyes and envision someone they love (children, nature/ place), then really imagine as if you were in 2030 with your children/ pet or at the place you are envisioning . Explore real details of what it feels like, sense like, look like, taste like, smells like...**be specific**.
    - All committee members after explaining their objects will be asked to provide their own personal vision of what the planet should look like in its most positive manifestation in 2030 (based on the subject matter of their committee / chapter). The overall point here is to help all members get to know each other from a human perspective in their relation to the planet without immediately jumping to titles.
    - **Discuss and compare what people imagined**. Find common patterns. What surprised them?
    - Once everyone has finished, the Chairs will then move to ask members what "Issues" they may have (this request will be sent to members before the first meeting, along with the two items listed above).
    - Like above, **discuss and compare what people imagined**. Find common patterns. What surprised them?

Writing the Actual Content of Each Committee Chapter:

- Introduction (general background)
- "Our Climate Positive Future" – a future forward resolution / narrative based description of how the world could look in 2030 if Planet Positive 2030 goals (50% Net Zero emissions and significant regeneration and resilience of earth's ecosystems) are achieved. *We must have a positive vision of the future to design in the present.*
    - *Example (truncated) narrative for the **Metrics Chapter**:*

      In 2030 governments, businesses, and individuals use various adaptations of the United Nations Sustainable Development Goals as metrics of success for their organizations and lives. In the early 2020s it became deeply apparent that GDP and exponential growth were not accurate tools to measure the holistic health of a nation or individual. We are more than creatures of fiscal accountability and productivity. More importantly, the GDP wasn't built to measure the environment, or caregiving. When "developed" nations (a term not used any more because it frames all countries based on antiquated economic mores and also positioned those who had caused most of the world's pollution in areas of

leadership) were not only given ESG and other Indicators, but asked to use them in equal measures as money, the world changed. Companies still made profits, but only after prioritizing the health of people and the planet.

- **10-15 Key "Issues"** – Thematic building blocks outlining key challenges and considerations on how each Committee will address the Planet Positive 2030 challenges ("Impossible Goals" - see below) based on the subject matter of their chapter. Each "Issue" will then feature "Background" information, a "Recommendation" (or more than one as needed), any "Case Studies" (where available), and "Further Resources" (providing links to documents, organizations, etc).

Our two "Impossible" Goals:

1. Transform society and infrastructure to achieve Planet Positive 2030. ("Planet Positive 2030" - Reduce greenhouse gas emissions to net 50% of 2005 emissions by 2030 and significantly increase regeneration and resilience of earth's ecosystems.

2. Identify the technological solutions we need to design, innovate and deploy to reach Planet Positive 2030

o Example Issue for the **Economics Chapter**:

Issue:
Immediate global funding is required to educate policymakers, manufacturers and technologists about how to significantly Increase the Regeneration and Resilience of Earth's Ecosystems.

Background:
Desertification is becoming increasingly common in multiple global regions where vegetation and water used to flourish. Immediate educational tools must be developed showing the systems oriented solutions that will come from land restoration, including: green jobs, sustainable food, less climate related immigration, and long-term water safety. Economic benefits or incentives must be provided for immediate, short and long term benefits for countries and companies instituting these changes.

Recommendations:
- Create templated policy briefs translated into multiple languages providing simple, non-technical language about how desertificatcrashing
- Desertification can be slowed or even reversed. Demonstrate the multiple benefits available to countries or regions making land regeneration a key priority. Work with policy makers to support any existing tax benefits or other incentives for immediate transition to regenerative practices, along with longer term loans, debt reduction or other incentives designed to adapt as quickly as possible for ongoing, sustainable and regenerative farming practices.

- Work with sustainable businesses involved in agriculture, supply chain, or other areas that can support the transition to widespread regenerative farming.

- **(FINAL RECOMMENDATION** As a reminder, where applicable, remember our second overall Planet Positive 2030 Goal is to "Identify the technological solutions we need to design, innovate and deploy to reach Planet Positive 2030." The logic of having this technological recommendation come last is that it directly addresses the Issue based on a need the entire committee has identified, versus leading with a technological solution that may not holistically address an identified problem.

Case Studies
Multiple examples of land regeneration can be found in the documentary film, *Kiss the Ground*.

Further Resources

- World Resources Institute: Roots of Prosperity: The Economics and Finance of Restoring Land:

  This report provides a comprehensive analysis of the benefits and costs of restoring forests and landscapes in countries around the world, demonstrating how smart policies and innovative financing can help governments meet their restoration targets. The authors find that finance, both public and private, for restoration is inadequate for seven reasons, and offers solutions to these financial barriers.

  The publication also outlines the main steps involved in carrying out economic analyses, bringing to light the full value of ecosystem services and social benefits as well as the costs of degradation. These insights can help governments to develop policy instruments and financing mechanisms that promote restoration on the ground. They can also help stakeholders incorporate environmental and social benefits into financing decisions.

- Resilience through Regeneration: The economics of repurposing vacant land with green infrastructure

  Many urban areas affected by flood disasters are also becoming increasingly ecologically and socially fragmented due to the accumulation of vacant properties. While redevelopment is often viewed as the primary objective in regenerating vacant properties, they can also potentially provide ecological and hydrological land uses. Rather than chasing development- based incentives for regenerating vacant lots in high flood-risk communities, a balance should be sought between new developmental land uses and green infrastructure to help counteract stormwater runoff and flood effects, or "Resilience through Regeneration." This paper uses landscape performance measures to evaluate the economic and hydrologic performance of green infrastructure regeneration projects for three marginalized neighborhoods in Houston, Texas, USA. Each project site is characterized by excessive vacant lots and flood issues. Results suggest

that, when using green infrastructure to regenerate vacant properties, 1) flood risk continually decreases, 2) upfront economic costs increase in the short term (when compared to conventional development), and 3) the long-term economic return on investment is much higher.

- The Economics of Regeneration: A Landscape Assessment of Opportunities to Support A Viable Regenerative Agricultural System

  This report offers an overview of financial levers currently available to raise the regenerative capacity of farms across a spectrum of management regimes and ecological contexts. The document identifies and interrogates the mechanisms that give regenerative agriculture potential as a viable strategy for improving farm enterprises and related investment outcomes. The assessment covers 13 categories of incentives, investments, and funding opportunities that reward producers and financial partners for conservation outcomes. Each category is discussed in terms of its potential to enable sustainable agricultural practices, including leading examples and, if present, notable critiques. The categories are also ranked according to criteria across financial potential, environmental impact, and approachability. Through the overview and comparison of these financial mechanisms, producers and interested investors can quickly grasp the range of opportunities available and identify those that best suit the regenerative operation they aspire to create.

A note on Issues and Recommendations

Think of your "Issues" as the key topics you'd likely talk about at a conference focused on your chapter's subject area. So if you were at an Oceans conference, there may be 5-6 hot topics that are the focus of keynotes or panels. Now just stretch a bit, and think of how those Issues could address the Planet Positive 2030 Goals.

When thinking about recommendations, keep the following list in mind for your committee members to help spark ideas for Issues or solutions they may not have immediately thought of:

Recommendations topics:

- How to reach Societal and Ecological Systems-Driven, Equitable Sustainability
- Policy considerations
- Rural Considerations
- Geological / Weather Considerations
- Further application challenges
- Social Impact Considerations (not already addressed)
- Further technology challenges
- Further application challenges

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Accountable Sustainability by Design (ASbD): Impact Accountability Assessment Tool

Creating technology that puts the needs of the planet and people first is a design issue. Engineers have clear scopes for projects that include boundary constraints. These often focus on avoidance of risk while ensuring excellence of technical design. For the companies that create the technologies built by engineers, Key Performance Indicators (KPIs) to date have focused on exponential shareholder growth. For governments, this same logic is supported by Gross Domestic Product that only measures fiscal and economic output.

Where technology is created in this status quo, the planetary outcomes take a back seat to exponential growth.

We won't reach 2030 goals of 50% Net Zero using limited metrics of success adopted in the past.

We must commit to UN SDG or other ESG metrics that put the Planet first today to achieve *Planet Positive* goals. Our **Impact Accountability Assessment Tool** will complement our Strong Sustainability by Design RoadMap. The document will be based on existing / respected Environmental Impact Assessment and other templates already in use.

IEEE has launched the IEEE 7010-2020 Standard that features a Wellbeing Impact Assessment (see below). This pioneering benchmark will include tools like the ones created by the New Climate Institute (see below), and the 6-D vision developed by The Digital Economist. Our goal is to provide a pragmatic Assessment tool that educates as well as provides accountability. Based on the insights from our multi discipline process, we want to support and encourage business, government, and individuals to boldly be Planet Positive now to get to the 2030 goals we must achieve.

Table 1.A: Overview of best practice corporate climate responsibility and rating methodology

1 TRACKING AND DISCLOSING EMISSIONS	**COMPANIES EXHIBITING BEST PRACTICE…**
COMPREHENSIVENESS OF DISCLOSURE	✓ Disclose full details on their GHG emissions on an annual basis, with a breakdown of the data to specific emission sources (including scope 1, 2, 3 and non-GHG climate forcers) and the presentation of historical data for each emission source.
2 SETTING SPECIFIC AND SUBSTANTIATED TARGETS	**COMPANIES EXHIBITING BEST PRACTICE…**
COVERAGE OF EMISSION SOURCES	✓ Explicitly state that their targets cover all scope 1, 2 and 3 emissions as well as any relevant non-GHG climate forcers.
EMISSION REDUCTIONS IN THE PLEDGE	✓ Set a specific emission reduction target that is independent from any offsetting, and aligned with 1.5°C compatible trajectories or benchmarks for the sector, as their main headline pledge.
INTERIM TARGETS	✓ Set interim targets that are aligned with the long-term vision in terms of depth and scope, with the first target on a timescale that requires immediate action and accountability (maximum 5 years).
3 REDUCING EMISSIONS	**COMPANIES EXHIBITING BEST PRACTICE…**
EMISSION REDUCTION MEASURES	✓ Implement encompassing and deep decarbonisation measures, and disclose details of those measures to support replication and the identification of new solutions.
RENEWABLE ELECTRICITY GENERATION AND PROCUREMENT	✓ Procure the highest quality renewable energy available, and disclose the full details of that procurement.
4 CLIMATE CONTRIBUTIONS AND OFFSETTING	**COMPANIES EXHIBITING BEST PRACTICE…**
CLIMATE CONTRIBUTIONS	✓ Provide an ambitious volume of financial support to climate change mitigation activities beyond the value chain, without claiming neutralisation of the company's own emissions
OFFSETTING CLAIMS TODAY	✓ Avoid misleading claims, and procure only high-quality credits that lead to an additional climate impact that is permanent and accurately quantified.
OFFSETTING CLAIMS TODAY	✓ Avoid misleading pledges; commit to procuring only high-quality credits from high-hanging fruit projects, and ensure corresponding adjustments are applied to limit double counting risks.

Note: Best practices were derived from the principles elaborated in the following subsections, and from a compilation of the practices identified from existing company pledges in 2021. High-hanging fruits refer to the most ambitious projects that tackle the least accessible areas of mitigation potential. For more information see section 4.2.1

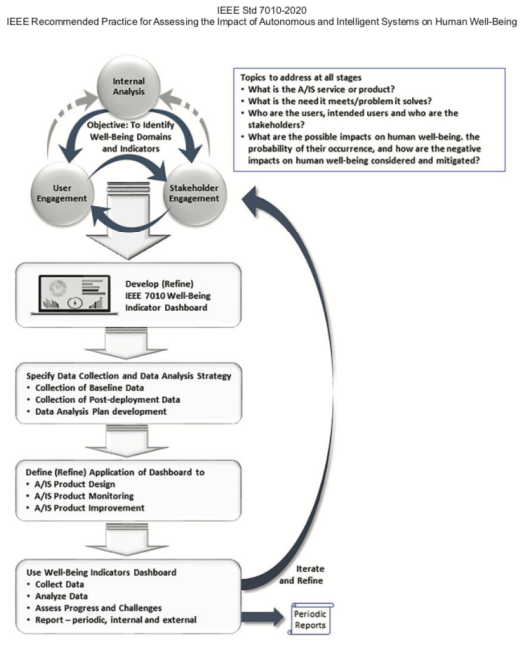

Figure 1—Flowchart of the iterative and adaptive nature of the WIA

Writing Process for *Accountable Sustainability by Design*

The process for ASbD is being finalized, but will involve the identification of a base template Impact Assessment where recommendations from Chapters of Strong Sustainability by Design can be utilized in pragmatic, implementable formats.

The Process

- We will host two live (Covid-dependent) workshops featuring livestream access for each committee to create and iterate their chapters. Community members can also record videos of themselves to share about this process.

- We will host Town Hall webinars to introduce the leadership team driving *Strong Sustainability by Design*, including Committee Chairs, IEEE technology experts, and guests providing updates on key themes of our work.

- We will provide a working draft of SSbD by mid-July of 2022 after our first event at Stanford University and an updated draft after our second event at The Hague in conjunction with Delft University. We will take the draft from The Hague event and offer it as a Request for Input (RFI) to the general public. (We will also have a draft of Accountable Sustainability by Design as well). Committees will then work to incorporate that feedback into a final draft to bring to the World Climate Tech Summit (for both documents) happening in Miami, FL at the end of Q1, 2023.

We have designed this process so anyone can participate via three distinct opportunities:

- Committee Member. We are prioritizing our technology community experts to form a core basis of all committees so they can best share / communicate how their solutions can benefit all readers of SSbD. We are also prioritizing global, gender, and equitable diversity on committees. We will do our utmost to honor a first come, first served basis via this process and cap committees at thirty members for each chapter due to time and resource constraints.

- Contributor. Each committee will be seeking contributions via written or video format by any public contributors. These contributions will be considered by committees writing chapters.

- Editor. Anyone wishing to read and provide workable critique to either / both drafts of SSbD.

Background

The Planet Positive 2030 Campaign is based on the experience creating *Ethically Aligned Design* (EAD), a standard setting Roadpap prioritizing human rights and values at the outset of design where we learned through our multidisciplinary global writing process that technology once created is never just "technical."

Based on where it's released, and the people whom it affects, all technology is socio-technical. Our Planet Positive community will also be multidisciplinary and global, adopting the logic of Engineers Canada and their National guidelines: principle of climate Adaptation and Mitigation for Engineers:

> Engineers should work with others, including those that are not engineers, to ensure that they have a full understanding of the implications of changing climate and weather on the engineered systems for which they are professionally responsible. To address climate change, the definition of multi-disciplinary teams should be expanded to include a much broader spectrum of players. The impacts of climate change can be far reaching and outside of the scope of an engineer's normal practice[4].

As engineers, we've based our *Planet Positive* vision on science. However, the logic of Net Zero emissions by 2050 demands urgent, comprehensive and global action now. The Intergovernmental Panel on Climate Change (IPCC[5]) provided the scientific basis for understanding what actions we need to take to avoid a climate crisis. Unfortunately, as of 2021, making 2050 goals isn't enough:

> Along with companies, cities and financial institutions, more than 130 countries have now set or are considering a target of reducing emissions to net zero by mid-century. While net zero is a critical longer-term goal, steep emissions cuts – especially by the largest greenhouse-gas emitters – are imperative in the next 5 to 10 years in order to keep global warming to no more than 1.5 °C and safeguard a livable climate.[6]

This need to make 2030 a key milepost for Planet Positive design is echoed in The 2022 Corporate Climate Responsibility Monitor from The New Climate Institute for company (and governmental) action:

With the objectives of the Paris Agreement, greenhouse gas emissions need to be reduced at speed, in all countries and in all sectors. The 1.5°C limit requires a reduction in global CO2 emissions of approximately 45% from 2010 levels by 2030, to reach a state of net-zero global CO2 emissions by around 2050, net-zero of emissions of all greenhouse gases by around 2060 to 2070, and net-negative emissions thereafter (IPCC, 2018b). Company actions that were considered viable in the era of the Kyoto Protocol only 10 years ago are no longer sufficient.

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[4] Engineers Canada: National guidelines: principle of climate Adaptation and Mitigation for Engineers. "Work with multi-disciplinary and multi-stakeholder teams, p. 17-18.

[5] According to their website, "The IPCC is the international body for assessing the science related to climate change. The IPCC was set up in 1988 by the World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation."

[6] United Nations, Climate Action: For a livable climate: Net-zero commitments must be backed by credible action. This is a key finding from the NDC Synthesis Report, September, 2021.

We agree with our colleagues from The Engineering Change Lab USA on the urgent need for equitable and resilient approaches created with our Planet Positive Vision:

> Climate change is real – the impacts are serious, and they are accelerating. There is an urgent imperative for the Engineering Community to take informed and intentional actions now to both reduce greenhouse gas emissions and adapt to the impacts of a changing climate. It is our duty and purpose to contribute our skills and knowledge of human-centered technologies and of the natural world to lead humanity out of the climate crisis with a focus on sustainable, resilient, equitable, and innovative approaches[7].

Thus, we are creating our RoadMap process to identify existing solutions and technologies for a **Planet Positive** future in 2030 that will go beyond Carbon Neutral by saving MORE greenhouse gas emissions than we are generating.[8] [9] We envision a planet and societal systems that are equitable and regenerative[10] as well as sustainable so we can replace more than we take. Not just with carbon, but with all ecological systems. And with the people who are most marginalized and harmed by the climate crisis.

We believe Responsible Innovation in technological design must improve our planet and the species inhabiting our biosphere by systems-driven **Strong[11] Sustainability**. This "Strong logic" means using our trans-disciplinary[12] approach to discover how society can help the planet regenerate naturally in complement to any form of existing sustainability efforts that may inadvertently cause harm due to a lack of informed planning at the outset of technological design. We can't only be Net Zero or "climate neutral" regarding carbon emissions by 2050. We must take a full planet view and restore and regenerate systems as needed to be **Planet Positive**.

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[7]Paragraph quoted from The Role of the Engineering Community in Addressing Climate Change (January, 2022) written by The Engineering Change Lab USA.

[8]Go Climate Positive, Why Go Climate Positive? The term, "Climate (or "planet") Positive" focuses on how to go beyond Net Zero or neutral efforts towards restoration.

[9]According to The World Wildlife Foundation's, WWF's Climate Positive Ambition - Going Beyond Net Zero to Restore Our Climate, being "Climate Positive"would specifically limit global temperature increase to 1.5°C and halving emissions by 2030 to achieve Net-Zero by 2040.

[10]A great documentary with a positive focus and lots of science based info on regenerative farming / sustainable practices is, *Kiss The Ground*.

[11]"Strong" sustainability (Daly, 1996; Folke et al., 2016; Korhonen, 2006; Rockstrom et al., 2009) acknowledges that the economy and society always function as subsystems of the biosphere (in turn, weak sustainability allows for absolute environmental and social burdens to increase if the relative per-unit economic output burden decreases). Integrating the green economy, circular economy and bioeconomy in a strategic sustainability framework (D. D'Amoto and J.Korhonen, 2021).

[12]Brief for GSDR 2015 Weak Sustainability versus Strong Sustainability Jérôme Pelenc, and Jérôme Ballet. Excerpt: "In sum, implementing strong sustainability requires a trans-disciplinary approach for identifying and conserving critical natural capital. The knowledge provided by natural science constitutes crucial contributions for identifying ecological thresholds and planetary boundaries but they are not sufficient on their own. Natural science research needs to be combined with social sciences and their interactions need to be embedded in a broad societal debate about (i) levels of risk acceptable to all populations (especially the most vulnerable populations) and (ii) values that underlie human development.

Timeline

March / April, 2022	Call to join community by early to mid March Committees formed by end of month First Town Hall / "Planet Positive Community" meeting by early April First Workshop details set Set committee writing schedule / editorial guidelines
July	First Workshop Takes Place (specifics TBD) Town Hall webinar provided for all Community members who can't join in person Goal of full work day is for all committees to update each chapter by second day
September	Same timeframe, prep-wise and details as July event (at the Hague during the last two weeks of September.
November	Launch draft documents as Request for Inputs (RFIs) to the general public.
March, 2023	Launch Executive Summaries of both documents at the World Climate Tech Summit in Miami, Florida in March, 2023.
Date TBD, Q2 or Q3 2023	Launch full versions of both documents at an IEEE conference (TBD).

Planet Positive 2030

Imagine the Future We Can Build Together

Frequently Asked Questions

What is Planet Positive 2030?

Planet Positive 2030 is a campaign created by a global, open community of experts supported by IEEE, the world's largest technical professional organization Advancing Technology for Humanity.

What do you mean by "Planet Positive?"

"Climate Neutral" means not adding Greenhouse Gas emissions to the atmosphere or harming the biosphere/planet in general. We must achieve Planet Positivity and *regenerate* planetary ecosystems by 2030 so the earth stays habitable in 2050 and beyond.

What Do You Mean by "Imagine the Future We Can Build Together?"

As technologists we are used to designing with a clear plan, boundaries and constraints. So our campaign is going to bring together hundreds of multidiscipline experts to create a **Roadmap Compendium** and **an Impact Accountability Assessment Tool** providing insights and practical recommendations on how we can work towards this big goal.

Who is the Audience for these Documents?

We encourage technologists to highlight innovation and technology-based solutions to bring us closer to achieving Planet Positive goals and we are inviting a diverse set of multidisciplinary experts from around the world to "translate" technological solutions for corporate and policy readers.

What are the Deliverables for this Campaign?

The first deliverable is the **community we will be able to build**. By highlighting sustainability enabling technologies and work from IEEE, its members and other expert communities as a part of a global multidisciplinary process, we will identify the key issues together with pragmatic recommendations and technical aspects of potential solutions in a **Roadmap Compendium**. This Compendium will serve to guide the actions of the technologists and scientific communities as well as of the private and public sectors.

A further major deliverable would be the creation of an **Impact Accountability Assessment Framework Tool** that will be modeled after industry standard Environmental Impact Assessments and include the insights gained from our multi disciplinary process. The Assessment will also feature the recommendations and use of specific accountability focused metrics (UN SDGs and ESGs).

What Are the The Guiding Goals for the Campaign? *They are:*

1. Transform society and infrastructure to become Planet Positive 2030. ("Planet Positive 2030" = Reduce greenhouse gas emissions to net 50% of 2005 emissions by 2030 and significantly increase regeneration and resilience of earth's ecosystems.

2. Identify the technological solutions we need to design, innovate and deploy to reach Planet Positive 2030.