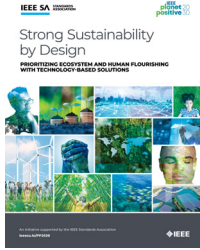# Backcasting Your Way Forward

Using the IEEE Planet Positive 2030 Design Methodology
to *Imagine the Future We Can Build Together*

You Can't Build What You Can't Design

We are living in the Anthropocene Era, where human activity has started to have a significant impact on the Planet's Climate and Ecosystems. Planetary change is happening so quickly that methods of forecasting may not provide the insights or solutions needed to achieve a healthy and flourishing future for all people, ecosystems and species by 2030.

The IEEE Planet Positive 2030 Initiative utilized a design methodology known as "backcasting" to create the chapters of their landmark compendium document, *Strong Sustainability by Design*. We've developed this Worksheet so you can create your own **Backcasting Sustainability Scenarios for technology products, services or policy** to help inspire and inform your innovation and planning processes to help "Imagine the Future We Can Build Together."

How Backcasting Works

Backcasting gives you a chance to look through the front windshield seeing clearly the road ahead, as well as the tools to imagine the best possible destination where you could arrive and thrive. It is about imagining a very clear future not constrained by the limits of your past experience. This creates a sense of freedom and unleashes new ideas, and new possibilities.
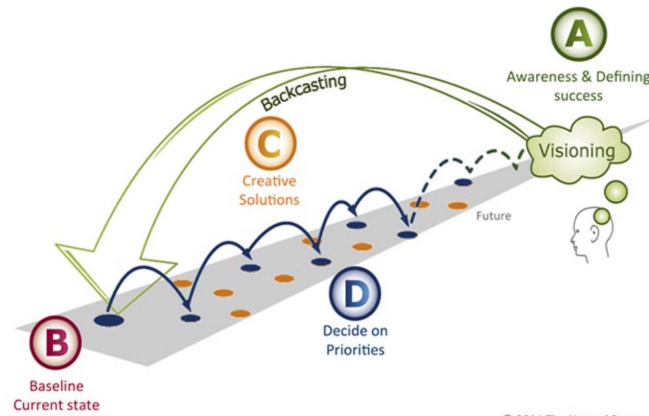
– Pong Leung, Natural Step

© 2011 The Natural Step

As noted in the paper, A methodological framework for futures studies: integrating normative backcasting approaches and descriptive case study design for strategic data-driven smart sustainable city planning, "Originally proposed as an alternative to traditional energy planning methodology in the 1970s, backcasting is increasingly applied in futures studies related to sustainability, as it is viewed as a natural step in operationalizing sustainable development."

This idea of Operationalizing is key where "Visioning" (using imagination as a design modality) is prioritized in the Backcasting process as it provides the opportunity to identify what economic, policy, or business systems might change in the future being envisioned that could support the end results one is wishing to achieve.

Otherwise, there may be a temptation with standard forecasting models to assume all economic, policy or business practices or policies will remain consistent in the future one is trying to predict. This allows for the potential to not offer recommendations in these areas that would align with the future one is trying to achieve.

Regenerative Sustainability as the Basis for "Planet Positivity"

Trajectory of Environmentally Responsible Design

© All rights reserved. Regenesis 2000–2014 – Contact Bill Reed, bill@regenesisgroup.com for permission to use

Regeneration in sustainability circles represents a design and philosophy of **giving back more than you take** from the planet. This is the same design ideology adopted by IEEE Planet Positive 2030.

This logic goes a step farther than current "do no harm" (eg, avoid emissions) definitions of "sustainability" that may not adopt a global view of how our planetary systems work together.

Circular Design methodologies encouraging the need to reduce, reuse and recycle provide a basis for Regenerative Sustainability. Where humans co-evolve the System working in symbiosis with the Planet, Regenerative Design can help all people and planet flourish.

This design imperative is part of the Backcasting process utilized for IEEE Planet Positive 2030 for *Strong Sustainability by Design*.

Backcasting Your Way Forward

Using the IEEE Planet Positive 2030 Design Methodology
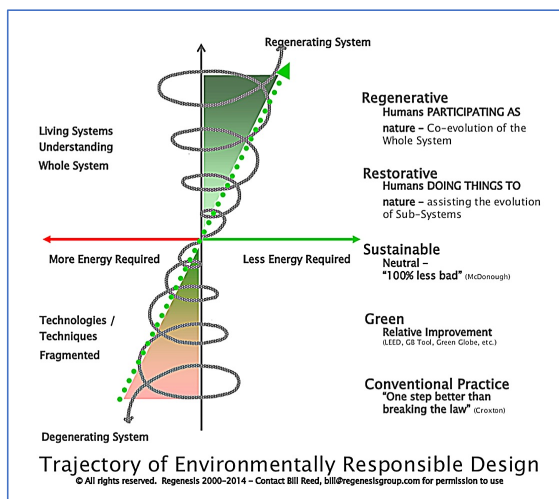to *Imagine the Future We Can Build Together*

Backcasting Worksheet

We have designed the following worksheet to be utilized with the Issues and Recommendations provided in the First Edition of *Strong Sustainability by Design*. Rather than offer prescribed or final recommendations for your business, policy, or design setting, our goal is to introduce you to the power of the Backcasting process to inform your work towards Regenerative Sustainability overall.

****

STEP ONE: Identify an Area of Interest based on the Ecosystem Chapters of Strong Sustainability by Design.

What is your area of Interest? *(Eg, Forests, Oceans, Farmlands / Agriculture)*

_____

STEP TWO: Identify 1-3 Issues from the Chapters of Your Choice Focused on your Area of Interest.

What are the "Issues" you'd like to focus on? *(Include Chapter name and page number / title for each "Issue").*

_____

STEP THREE: Identify 1-3 Related Issues from Other Chapters of *Strong Sustainability by Design.*

The goal of this step is to help inform your Backcasting process with societal areas of relevance that may need to evolve or change to achieve y/our goals by 2023.

What are the "Issues" you'd like to focus on?

_____

STEP FOUR: Review the Goals of The IEEE Planet Positive 2030 Initiative.

When envisioning a future in 2030, how will you make sure to achieve The IEEE Planet Positive 2030 goals, including "Issues" from ecosystem and non-ecosystem chapters?

_____

STEP FIVE : Identify Technological Solutions based on your Work

Now that you've honed in on specific Issues and areas to address, what are some of the initial technological solutions may help address your Goals?

_____

STEP SIX: Write a narrative version of your 2030 future as a first draft of your Design.

Using the chapters of *Strong Sustainability by Design* as a template, create a narrative of your 2030 vision as a final step in your Backcasting Process:

_____

STEP SEVEN: Share Your Vision with the Community!

We've love to post your Vision on our Blog and share it in our LinkedIn and other Social Networking channels. Please include information about your organization you'd like us to include in the post and send to: planetpositive2030@ieee.org

---

KEY for Filling out the Worksheet

- **The Ecosystem Chapters of *Strong Sustainability by Design* include:** Forests & Trees, Rivers & Lakes, Towns & Cities, Oceans & Coasts, Farmlands & Grasslands, and Mountains and Peatlands.

- **The non-ecosystem Chapters include:** Guiding Principles, Metrics/Indicators, Economics/Regulation, Global Methodologies, Human Wisdom & Culture, Sustainability Commons and The Arts)

- **The Goals of The IEEE Planet Positive 2030 Initiative.** Our logic is not only that a certain technology or solution will be used in a general way for "sustainability" but rather that your imaginative / backcasting design process will result in:

    - **50% reduction of GHG emissions by 2030** *(see below).* We chose 2030 to provide a sense of urgency in your design scenarios as it's impossible to offer technological solutions in isolation of economic and social realities. Meaning, wide-scale infrastructure, economic and policy changes need to be inform your brainstorming to provide aspirational, yet realistic visions of the future. For more specifics on this area, make sure to read The Sixth Assessment (Synthesis) Report of The IPCC (Intergovernmental Panel on Climate Change) from March, 2023.

    - **Significant increase of Earth's Ecosystems.** In December 2022, the Kunming-Montreal **Global Biodiversity Framework** was adopted by 196 governments. The vision of the Kunming-Montreal Global Biodiversity Framework is a world of living in harmony with nature where by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people. One key goal of this framework is The 30 x 30 Initiative urging governments to designate 30% of Earth's land and ocean area as protected areas by 2030.
    - Identify the current technological solutions that need to be deployed widely as well as technology gaps for which we need to design, innovate and deploy new technological solutions to reach Planet Positive 2030. As you'll note, we have sections featured in red after "recommendations" including in Strong Sustainability by Design. These are strategically placed to help you have a context for your Backcasting process. Our logic is not just to say, "how would you use technology to help our Oceans be more sustainable?" Rather, by providing a request for technological solutions within an identified need state, the technological solutions provided in your Backcasting work will much more pragmatic and productive than in figurative isolation.

- **The storytelling / imagination aspect of your Backcasting Process.** As noted by The American Public Health Association, "Stories make climate change relatable by drawing on common experience and core human values, like health. Compelling stories generate empathy and understanding. They take listeners on an emotional journey and offer a sense of hope that inspires positive change." As you'll note, chapters in *Strong Sustainability by Design* open with these narratives, as in this language from our Economics Chapter: "A Caring, Inclusive, Circular, Sustainable (CICS) Economy is establishing itself globally. We have moved from a growth-driven, competitive, extractive, and unsustainable economy to a caring, inclusive, circular, and sustainable economy where value comes from very different sources compared to the economic thought of just a decade ago." The logic of Backcasting with these narratives is to start your brainstorming, creative process with science based storytelling. Meaning, we're focused on what is called "hard science" fiction where existing facts are used for projection versus outright fantasy. Our process is designed so you can start to build that future with the Issues, Goals, and tools we're provided here.