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How To Save The World With Rigorous Carbon Accounting

Professor Karthik Ramanna, Professor of Business & Public Policy, Blavatnik School of Government

Wednesday, 02 November 2022

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A Word From Today's Chairman

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Today’s Agenda

- 15:00 – 15:05 Chairman’s Introduction
- 15:05 – 15:25 Keynote Presentation – Professor Karthik Ramanna
- 15:25 – 15:45 Question & Answer

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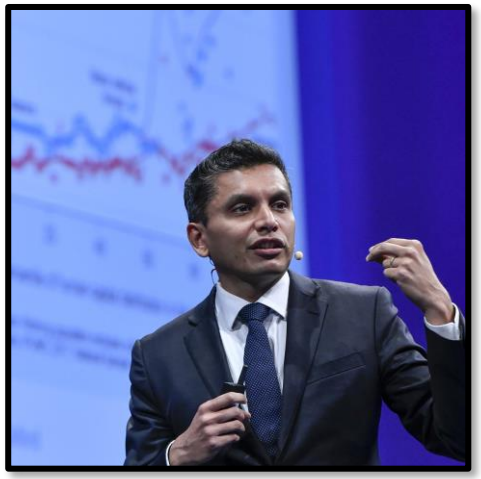
Today's Speaker

Professor Karthik Ramanna

Professor of Business & Public Policy

Blavatnik School of Government



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An invitation to pilot the the E-liability approach to rigorous GHG accounting

17 September 2022

Robert S. Kaplan and Karthik Ramanna

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What is the problem we need to solve?

Consider one of the most basic decisions in green energy: to build a wind turbine to replace a coal-fired power plant. While we know the ***total monetary cost*** of building a wind turbine, to date, we do not know the ***total GHG impact*** of building a wind turbine.

Calculating the total GHG impact of any product or service is not just an engineering problem:
it is a **GHG supply-chain accounting** problem.
Companies, consumers, investors, and governments need rigorous GHG supply-chain accounting to make sound decisions on managing climate change.

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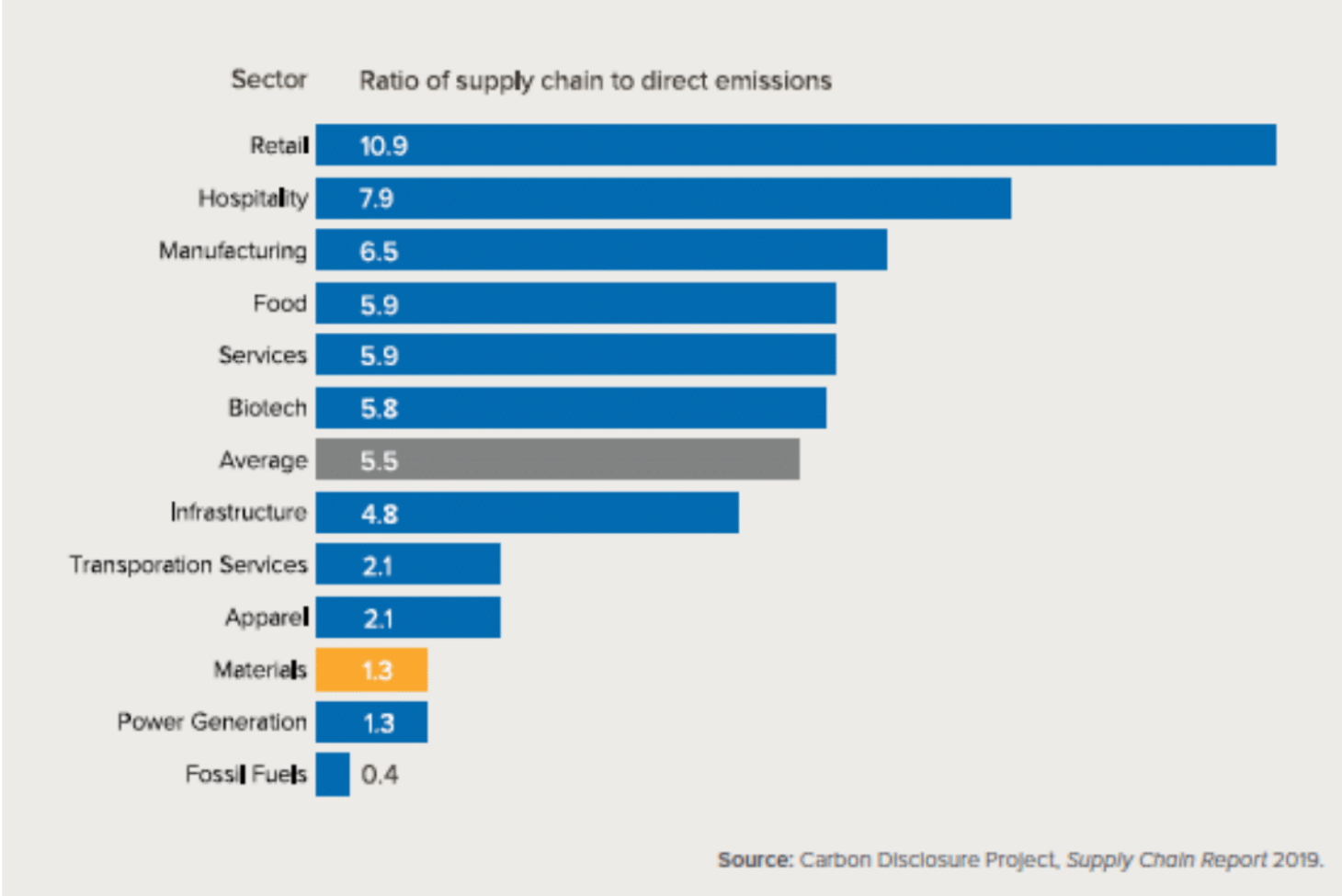
Controlling supply-chain emissions is critical to addressing climate change



Source: Cannon et al., RMI

The current standard for GHG supply-chain accounting is called "Scope 3"

Scope 1:

Direct GHG emissions from sources that are owned or controlled by a company

Scope 2:

GHG emissions attributed to electricity and heat purchased and consumed by the company

Scope 3:

Indirect GHG emissions from upstream and downstream operations

Source: GHG Protocol, WRI/WBCSD

The Scope 3 standard has well-known weaknesses

Inaccurate: The standard's top-down approach means collecting "supplier-specific" Scope 3 data is impossible for any sizeable company in a modern value-chain. The standard then allows companies to supplement primary data with industry-average data, analogous to FASB/IASB allowing companies to use industry-average gross margins, instead of actual margins. The result is guesstimates and gaming of GHG accounts.

Multiple-counting: A product with "n" entities in its supply chain will have its emissions (and offsets) counted n times. This is analogous to FASB/IASB allowing a company to report in its own profits a share of the profits of all its suppliers and customers.

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How do we propose to solve the problem?

Until 2021, we had no practicable way of solving the GHG supply-chain accounting problem so as to have an accurate and auditable measure of the total GHG impact of any product or service transacted in the economy.

But in 2021, two professors from Harvard and Oxford proposed a simple solution based on well-understood inventory- and cost-accounting methods.
The idea – called ***E-liability accounting*** ("E" for environment) – has since won the HBR-McKinsey Prize for "groundbreaking management thinking."

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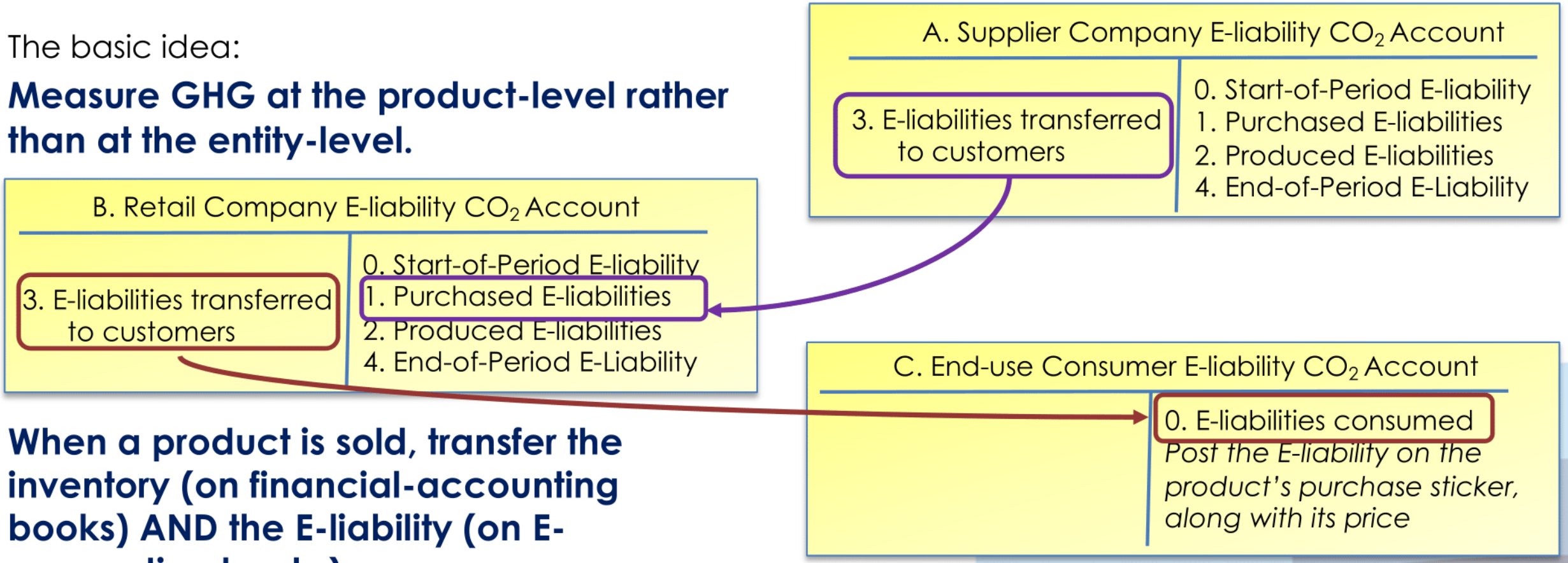
The E-liability solution to GHG supply-chain accounting

The basic idea:

Measure GHG at the product-level rather than at the entity-level.



When a product is sold, transfer the inventory (on financial-accounting books) AND the E-liability (on E-accounting books).

see Kaplan & Ramanna, "Accounting for Climate Change," HBR Nov/Dec 2021

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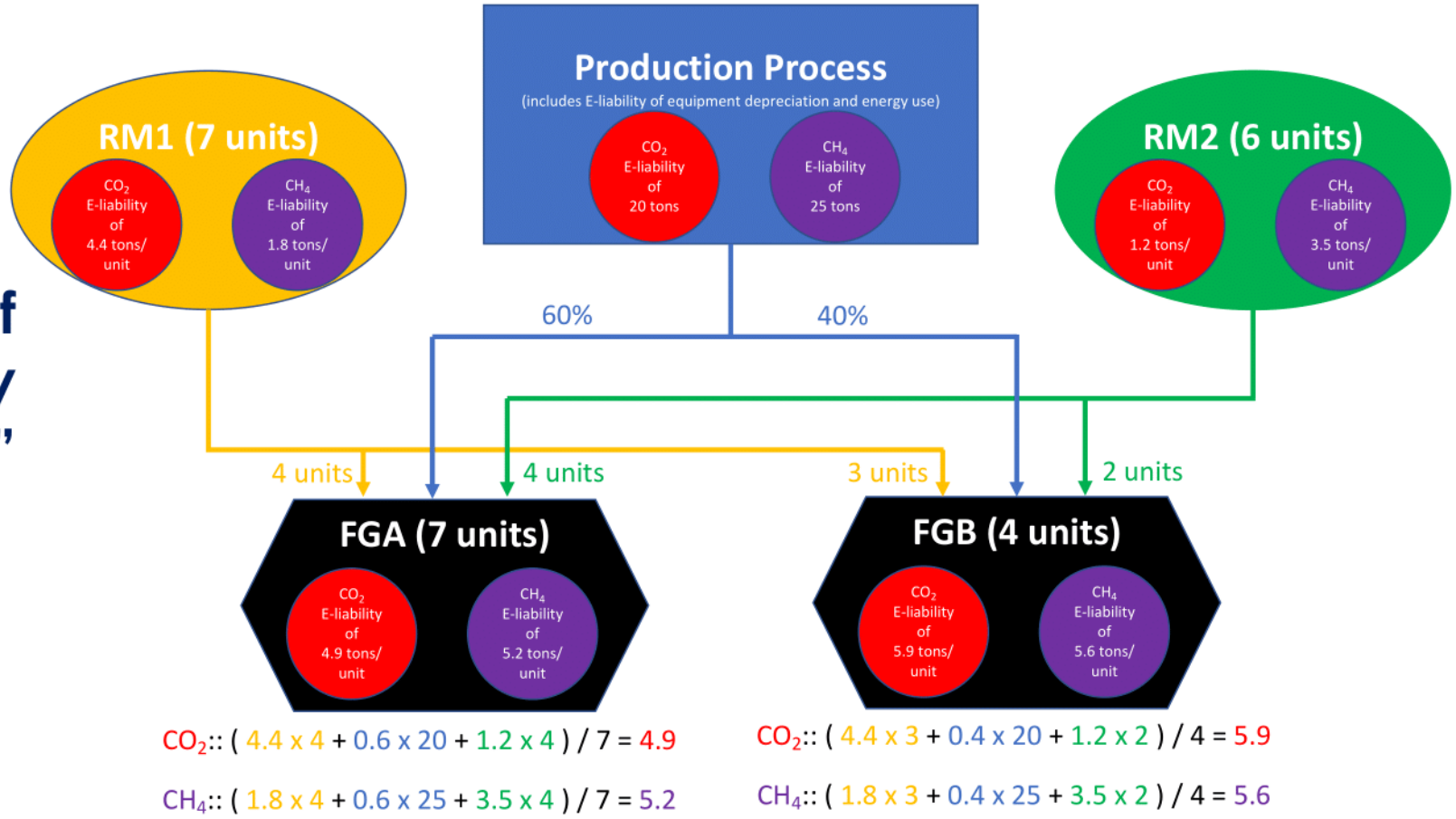
The E-liability solution to GHG supply-chain accounting

An example of E-liability "cost accounting"



see Kaplan & Ramanna, "Accounting for Climate Change," HBR Nov/Dec 2021

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The E-liability solution to GHG supply-chain accounting

An example of E-liability "enterprise reporting"

E-liability flows	Tons of CO_2
Opening E-liabilities	**3,600**
Add E-liabilities acquired from suppliers	39,800
Electricity	*5,600*
Sheet steel	*10,600*
Glass	*5,400*
Fabric and plastic	*1,200*
Other supplies/components	*4,800*
Capital equipment	*12,200*
Add E-liabilities directly produced through operations	2,600
Subtract E-liabilities offset through purchases and operations	(4,000)
Subtract E-liabilities transferred to customers	(32,600)
Closing E-liabilities	**9,400**
Change in E-liabilities during period	*5,800*

see Kaplan & Ramanna, "Accounting for Climate Change," HBR Nov/Dec 2021

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The E-liability solution to GHG supply-chain accounting

The E-liability approach allows "true and fair" audits

1. When a company produces (Scope 1) direct emissions, these are recorded in a blockchain along with third-party assurance. The blockchain enables atomisation and verifiable transmission of emissions across supply chains.

2. The blockchain facilitates assurance of entity- and product-level E-liability accounts. Each company's periodic E-liability statement can be audited analogously to "accounts payable."

see Kaplan & Ramanna, "Accounting for Climate Change," HBR Nov/Dec 2021

The E-liability solution to GHG supply-chain accounting

Advantages of the E-liability method

- ✓ Avoids multiple-counting and guesstimates
- ✓ Allows companies to verifiably compete on emissions reductions
- ✓ Incorporates GHG contra-emissions (offsets)
- ✓ Cost-effective to prepare and analyse
- ✓ Addresses the materiality and fungibility concerns with ESG
- ✓ Provides a basis for carbon taxation, if needed

see Kaplan & Ramanna, "Accounting for Climate Change," HBR Nov/Dec 2021

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What needs to happen to make E-liabilities the global standard?

1.
Ambitious companies seeking a competitive advantage lead on E-liability in their supply chains.

2.
Auditors and ERP providers develop E-liability products.

3.
SEC, ISSB, EFRAG jointly embrace a three-year phase-out of industry-average data.

4.
E-liability approach provides the blueprint for robust S-reporting on modern slavery, worksite harms, etc.

see Kaplan & Ramanna, "We Need Better Carbon Accounting. Here's How to Get There," HBR Apr 2022

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Which companies make good pilots of E-liability accounting?

1.
Those with significant upstream and direct emissions for a given product.

2.
Those with a potential competitive-advantage in GHG emissions from their own production and/or supply-chain.

3.
Those with GHG-sensitive customers and investors.

Current and planned pilots include global market-leaders in cement, glass, steel, and tires.

see Kaplan & Ramanna, "We Need Better Carbon Accounting. Here's How to Get There," HBR Apr 2022

What does it mean to be an E-liability pilot?

Being a pilot does not involve calculating the entire supply-chain GHG emissions on all products and services all at once.

Instead, we suggest each company pick just one high-salience, high "Scope 1" product; then work with its top-three suppliers (by their Scope 1) to develop a first-iteration report.

A first-time pilot should take 6-9 months, and over each subsequent iteration, the E-liability reports will become more comprehensive and accurate.

First movers in an industry can reap value from pilots even after the first iteration given the lack of competition.

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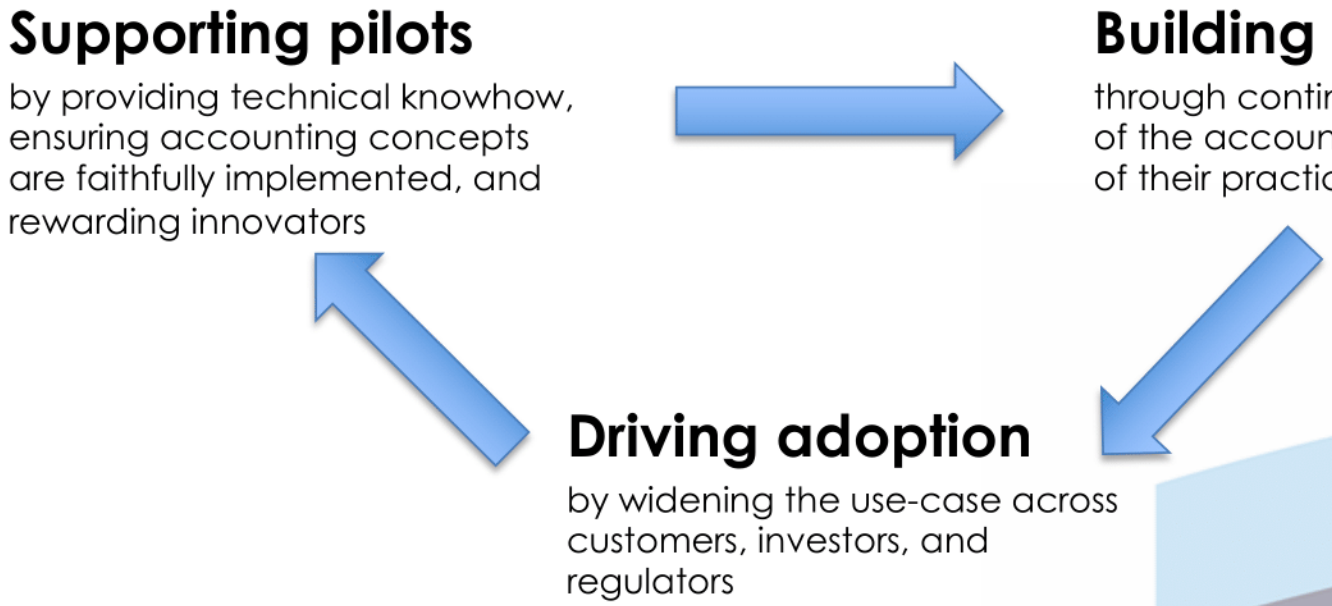
The catalysing role of the E-liability Institute

We will create a small, high-powered not-for-profit "secretariat" to work with key players in business and government to drive E-liability into practice and acclimate people to its use.



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Interested in piloting E-liabilities?

Email Professor Ramanna: ramanna@alum.mit.edu

Our upcoming projects focus on:

- **rigorous accounting for GHG offsets**
- **rigorous reporting of "downstream" GHG impact**

Further reading:

1. https://hbr.org/2021/11/accounting-for-climate-change.
2. https://hbr.org/2022/04/we-need-better-carbon-accounting-heres-how-to-get-there.
3. https://www.mckinsey.com/about-us/new-at-mckinsey-blog/hbr-mckinsey-award-winners-a-cleaner-smarter-way-to-measure-ghg-emissions.

Comments, Questions & Answers

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- Tue, 08 Nov (12:00-12:45) The EU AI Act: State Of Play
- Wed, 09 Nov (16:00-16:45) Stablecoins: Crypto's Killer App? Or Killer Of Crypto's Investors?
- Mon, 14 Nov (16:00-16:45) Chile Issues The Worlds First Sustainability-Linked Policy Performance Bond

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