

June 19, 2019

## Introducing the Digital Future: Digital Companies Transforming Energy and Building New Climate Solutions

### I. Introduction

- Many of the advances across the 21<sup>st</sup> century U.S. energy landscape have emerged as a result of *both* innovations in energy technologies *and* commercial breakthroughs in information and communication governance, analytics, and data control. Together, these breakthroughs are enabling a new era of energy digitalization. This new era will be dominated by crosscutting digital solutions, analytical tools, and platform ecosystems — including artificial intelligence, blockchain, the Internet of Things (IoT), data sensor technology, and big data analytics. Each has myriad of potentially transformative applications for optimizing our energy system.

[Link or Sidebar to [EC-MAP “Digital 101”](#)]

- Innovations in computing and machine learning are enabling automation and advanced functionality to be embedded within energy production sites, delivery systems and distribution networks. Many of the functions of electric grid operators are improved by, and have the potential to be optimized by, automation. Distribution network automation can greatly improve the speed, cost and accuracy of key functions required by smart grids and underpin new energy market business models. In the oil, gas, and mining sectors, technologies such as artificial intelligence and drones are helping companies better understand subsurface conditions and improve operations and maintenance, improve safety, and reduce environmental impacts.

[Links to [EC-MAP foundational white papers focused on power, transportation, and industrials](#)]

- However, this market-driven, decentralized, digital energy future is not assured. It requires us to rethink the role of government and update policies and practices to deliver value to consumers and accelerate policy action on climate change, economic competitiveness, and national security.

## II. Reimagining the Role of Government for a Digital Future

- Many policymakers have made “innovation” a major theme in their climate change discussions. However, too often the conversation is focused on technologies that are single purpose, capital intensive, and requiring decades of R&D before it is ready to scale. Meanwhile, policymakers often miss the digital technologies already being deployed today that could yield significant benefits simply through accelerating their adoption.

[Potential call-out quotes from policymakers and other [stakeholders calling for government/climate policy](#) to be [reimagined for the digital era](#)]

- The climate benefits of digital technologies are still emerging but potentially significant, such as:
  - Using AI for environmental applications has the potential to boost global GDP by 3.1 – 4.4% while also reducing global greenhouse gas emissions by around 1.5 – 4.0% by 2030 relative to Business as Usual (BAU) (PWC 2019)
  - The global e-Sustainability Initiative found that an IoT-enabled world could be cleaner, smarter, and more prosperous. They estimated that IoT could bring about a 20 percent reduction in global carbon dioxide emissions by 2030 through the application of Internet-enabled solutions. This would also reduce costs by US\$4.9 trillion by 2030, with US\$1.2 trillion in reduced electricity expenditures, and US\$1.1 trillion in reduced fuel expenses. Source: (GESI 2015)
  - Additional data and sources to be added

[Potential graphic or example/case study of impact of digital technology on emissions reduction and/or climate resilience]

- The best way to understand digital technologies poised to transform the energy and environment sectors is to see them in action. The companies below are poised to lead in this transformation if policymakers and regulators move to reimagine and [update their approaches](#), existing energy and environment statutes, and [measurement, reporting and verification \(MRV\) protocols](#).



### III. The Digital Companies Transforming Energy and Building New Climate Solutions

- The digital future is already beginning to emerge, and these are the companies leading it. However, key policy barriers are creating hurdles and slowing progress. Here are the most critical and compelling stories for policymakers.

[Links to the four company sectors; in an online version, the descriptions and/or company logos can appear when a user hovers over a sector]:

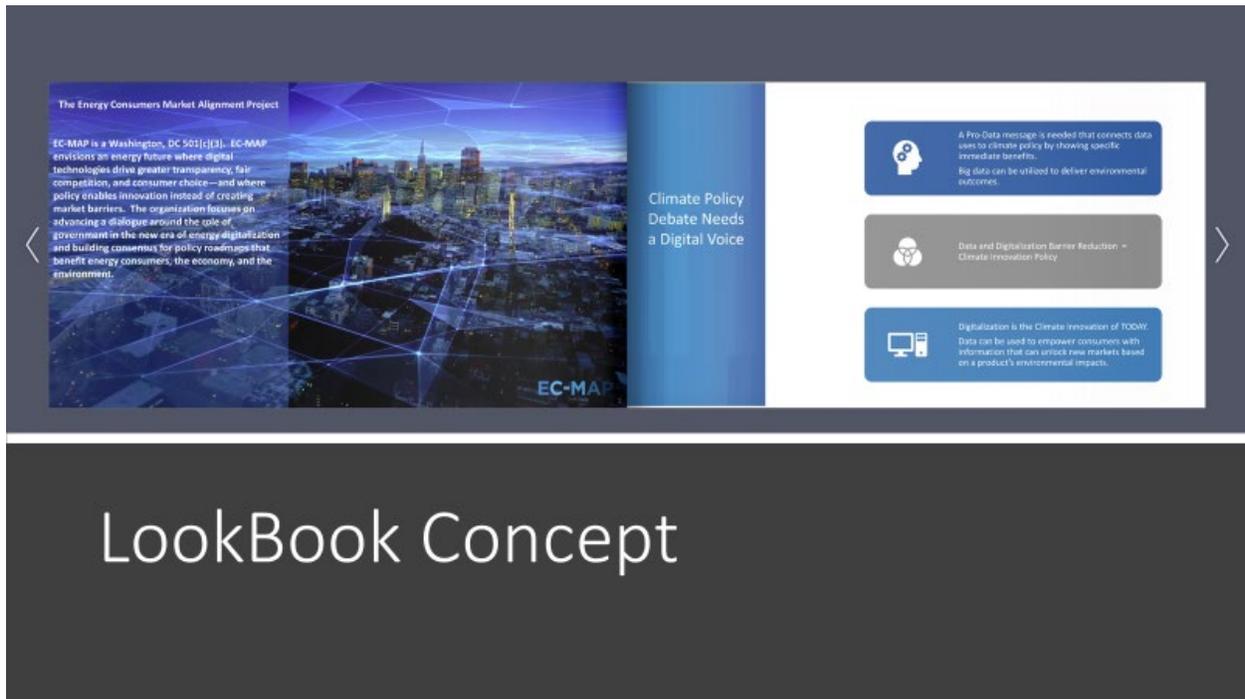
- Power: generation, transmission, distribution, storage, and the intersection with electric vehicles
- Transportation: vehicles (including the intersection of electric vehicles and the grid), fuels, infrastructure, and mobility solutions
- Industrials: oil and gas and chemicals production and delivery, mining, manufacturing efficiency and supply chains
- Biodiversity and Ecosystems: agriculture, forestry, water, conservation, and the intersection with energy production

Each company profile will include the following information, designed into a visually compelling snapshot (not a table)

<b>Company</b>	(Company Name/Logo)
<b>Primary Sector</b>	Power, Transportation, Industrials, Biodiversity and Ecosystems
<b>Technology product or service</b>	(Description of what the company does)
<b>Customer(s)</b>	(B2B or B2C + more specific description)
<b>Current Project(s)</b>	(Description of pilot projects, outcomes to date)
<b>Future Impact</b>	(How they will scale/commercialize, potential impact)
<b>Intersection with Climate Policy</b>	(What they need from government or how they can help government – policy barriers in their way; ideas for creating incentives/smooth pathway for adoption; how their data or tools can help government do its job more efficiently or effectively)



#### IV. The LookBook Concept:



Additional Features may include:

- Map visual with company HQ and/or pilot projects with dots color-coded by sector
- Other related examples/project snapshots
- Key legislation critical to this group of companies
- Pull quotes/testimonials
- Other compelling graphics and links that add content and value for the reader/user
- Other features suggested by you!

