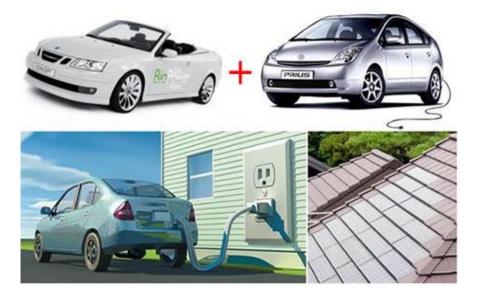






Amy Myers Jaffe David M. Rubenstein Senior Fellow for Energy and The Environment Council On Foreign Relations

Presentation to Aspen Institute Summer Clean Tech Forum July 13, 2018

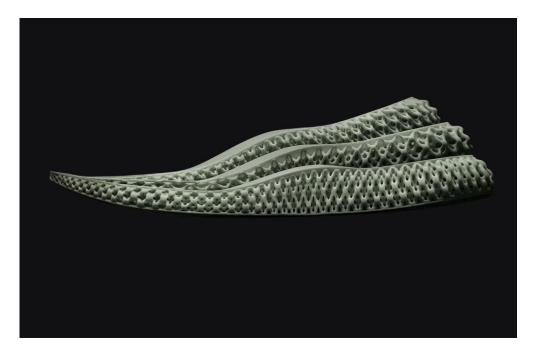




Technology Revolution is ushering in exponential gains in productivity, via transportational logistics, automation, big data, material science and biotech, artificial intelligence, 3-D printing.

This revolution dramatically change the way we produce, sell and use energy.

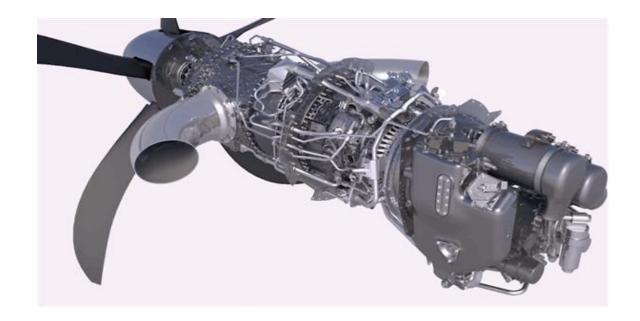


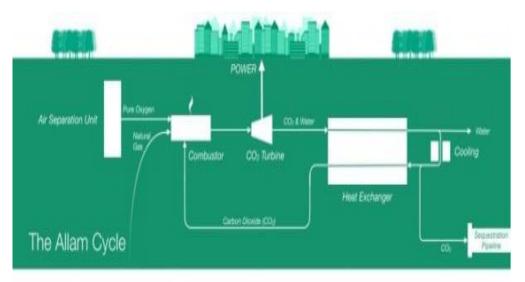




3 D printing will disrupt manufacturing as well as supply chains in ways that are not well understood. The Denali engine has 12 parts vs its predecessor with 855 parts.

Adidas plans to launch sneakers made via 3 D printing which means they won't be produced in southeast Asia and shipped by truck, boat and rail but made and delivered right here in the U.S., maybe some day soon by drone.







Utility of the Future : Balancing authority or integrator

Today's utility is focused on protecting its potentially stranded assets but PG & E is a warning that much of this infrastructure and distribution system is already obsolete.

