Use Case Study

1. How should Amazon develop environmentally friendly delivery services and increase awareness among customers for being carbon-neutral?

The one of the greatest services from amazon is the one-day delivery. If customers buy product today and they will be delivered within 24 hours. For the product, Amazon can label the product with an environmentally friendly carbon footprint and encourage customers to buy environmentally friendly products, such as customers buying environmentally friendly products, and the amount of carbon footprint can be added up to purchase carbon offsets. For delivery, Amazon can offer eco-friendly delivery options, but transit times. Delivery companies should consider using hybrid vehicles or avoiding routes through crowded cities. Also, for the packing, the packing box should use recyclable materials.

1. How should ATS leverage all the existing transportation methods to meet Amazon’s Climate Pledge objectives without compromising on speed and costs?

The easiest way is to improve delivery efficiency. Amazon should arrange delivery routes based on daily traffic conditions to avoid wasting time and energy. Such as the route should be adjusted to the shortest distance for multiple delivery destinations. In addition, Amazon could consider using electric vehicles to achieve carbon reduction projects.

1. How could we leverage technology to drive, measure and improve towards a net-zero carbon objective, across our transportation network?

According to PlugAndPlay there are 15 Startups Leveraging Technology to Achieve Carbon Neutrality. For example:

Hive Power

* Hive Power provides a Software as a Service solution for Smart Grid Analytics, which helps Energy retailers and grid operators to improve their operations, enable new revenue streams, and optimize asset management.

Sync Energy AI

* Sync Energy AI developed a no-code AI-based predictive software platform that streamlines planning and operations for electrical utilities, especially during emergencies like weather events.

Rebase Energy

* Rebase Energy is a startup that created a platform that helps utilities by enabling the creation of energy AI forecasts in just minutes.

Overstory

* Overstory uses carbon neutrality technology as a solution that analyzes all vegetation on Earth to prevent wildfires and power outages, enabling smarter infrastructure management and safer communities.

Kuva Systems

Kuva Systems is an industrial IoT solution that continuously monitors and quantifies the intensity of methane and VOC emissions.

Kanin Energy

* Kanin Energy is a startup that helps heavy industry monetize their waste heat and decarbonize their operations.

Ecolectro

* Ecolectro is a specialty chemicals company, using chemistry to decarbonize transportation, energy and industrial manufacturing. Its Alkaline Exchange Materials (AEMs) platform will replace perfluoro-sulfonic acid polymers (PFSAs), making electrochemical systems that make/store energy, chemicals and fuels less expensive.

Proof Energy

* Proof Energy commercializes Fuel Cells 2.0. Its breakthrough metal-supported Solid Oxide Fuel Cell (SOFC) technology increases performance, reduces cost and is carbon neutral. It provides a 95% reduction in battery pack size and cost for medium and heavy-duty EVs

Electro-Active Technologies

* Electro-Active Technologies is focused on transforming waste into renewable products. Their carbon neutrality technology utilizes an advanced microbial and electrochemical process to efficiently use organic waste and electricity to produce renewable hydrogen.

Planetary Hydrogen

* Planetary Hydrogen offers carbon-negative hydrogen production. Their patented Planetary Hydrogen Ocean Air Capture (OAC) technology uses renewable electricity to produce hydrogen via conventional electrolysis of water.

Energy Dome

* Energy Dome uses CO2 as a solution in order to solve climate change through ground-breaking long-duration energy storage. Their carbon neutrality technology is based on a thermodynamic process that uses CO2 to store electricity cost-effectively with unprecedented round trip efficiencies.

Veloce Energy

* Veloce Energy is another example of a startup offering advanced technology to achieve carbon neutrality. They create modular, scalable, distributed energy storage (VPort), overhead power and communications systems. They also offer intelligent project automation and site control products to enable the electrification of transportation.

DynamHex

* DynamHex offers a decarbonization enterprise software that helps cities and companies target climate action and measure results.

Ev.energy

* Ev.energy provides utilities with managed EV charging services in the home. Their software platform is hardware-agnostic and connects wirelessly to a range of hardware to maximize the total controllable load for utilities.

SineWatts

* SineWatts has designed a Universal OBC that replaces the existing integrated onboard charger (OBC). The Universal OBC enables unified and bidirectional Level 1, Level 2, and Level 3 fast charging.

References:

Forbes. (n.d.). *Amazon’s Eco-Friendly Shipping?* [online] Available at: https://www.forbes.com/2010/10/19/environment-internet-retail-technology-amazon.html?sh=3fe878806497 [Accessed 22 Jun. 2022].

Plug and Play Tech Center. (n.d.). *15 Startups Leveraging Technology to Achieve Carbon Neutrality*. [online] Available at: https://www.plugandplaytechcenter.com/resources/startups-leveraging-technology-to-achieve-carbon-neutrality/ [Accessed 22 Jun. 2022].