



A low-angle, close-up shot of the Space Shuttle Columbia on the launch pad. The shuttle is white with black and grey segments, and the text "Fuel Cost" is overlaid in white.

Fuel Cost

A silhouette of the Space Shuttle Columbia in flight against a dramatic, cloudy sky at sunset or sunrise. The text "CO<sub>2</sub> Emissions" is overlaid in white.

CO<sub>2</sub>  
Emissions

A wide shot of the Space Shuttle Columbia launching from the launch pad. A large plume of white smoke and fire is visible at the base. The text "Reactive Gases" is overlaid in white.

Reactive  
Gases

A large, four-engine propeller aircraft, likely a military transport plane, is parked on a runway at night. The aircraft is illuminated by ground lights, and its four large propellers are visible. The background is dark, suggesting a night sky. The text is overlaid on the left side of the image.

**Global air travel  
accounted for over  
2% of total CO<sub>2</sub>  
emissions in 2019.**



The Falcon Heavy  
rocket emits 1200  
metric tonnes of  
CO<sub>2</sub> per launch.



| Projected to grow 10X



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POWERING THE WORLD WITH ELECTRICITY

# Making Aerospace Electric

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$$F_{\text{lift}} = F_{\text{drag}}$$

Mass of Plane

gravity

$$P = \frac{2 \times M_{\text{plane}}^2 \times g^2}{\rho_{\text{air}} \times L^2 \times V_{\text{flight}}}$$

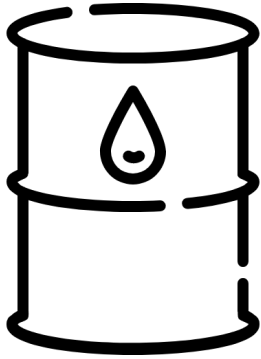
density of air

velocity

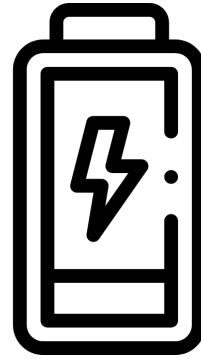
wing length



# Energy Density

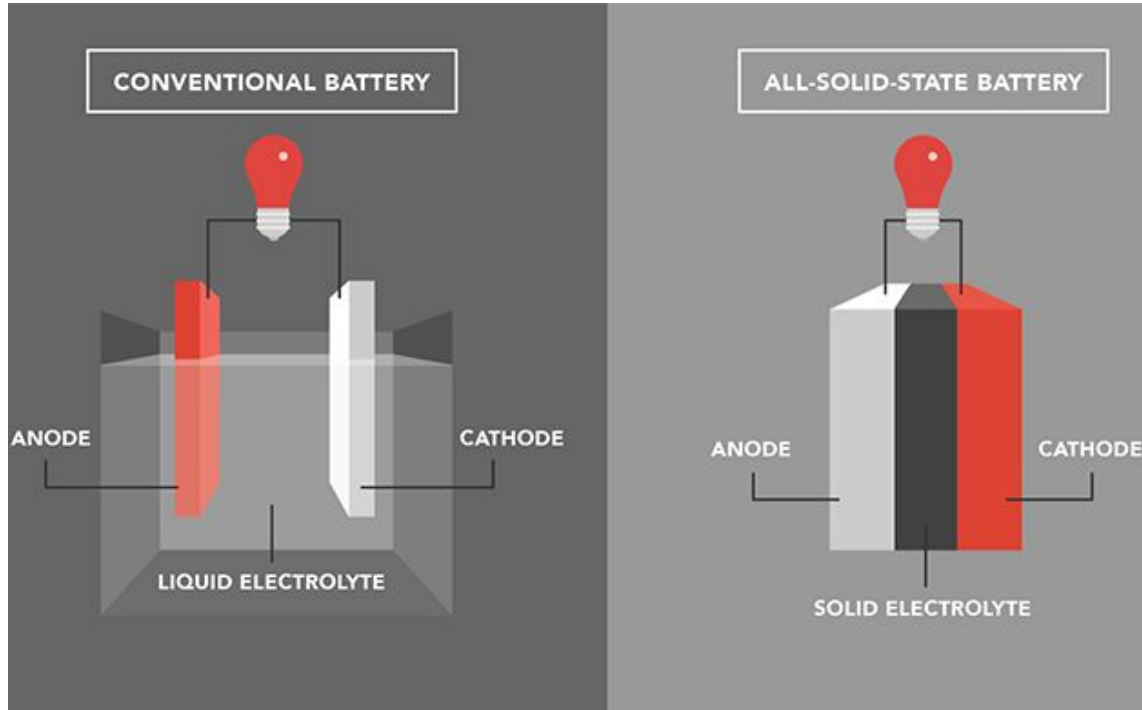


Kerosene  
43 MJ/kg  
Low Efficiency



Battery  
0.8 MJ/kg  
High Efficiency

# Phase 1



Safe

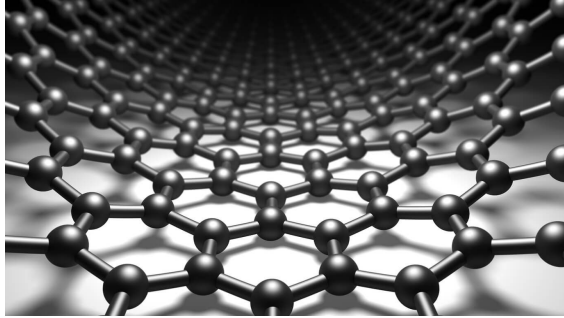
Smaller

Lighter

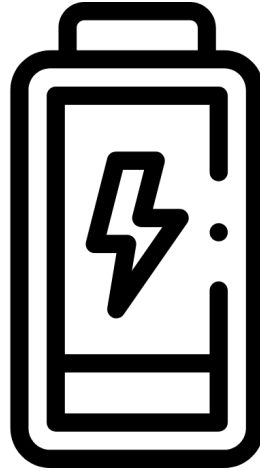
Higher energy  
density (2.5X)

Easier and faster  
to manufacture

# Phase 2



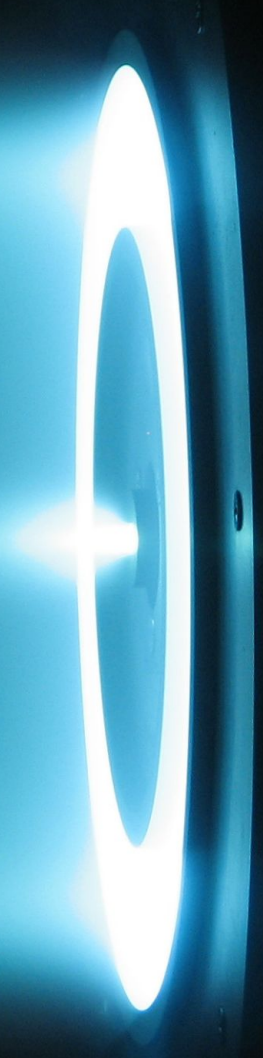
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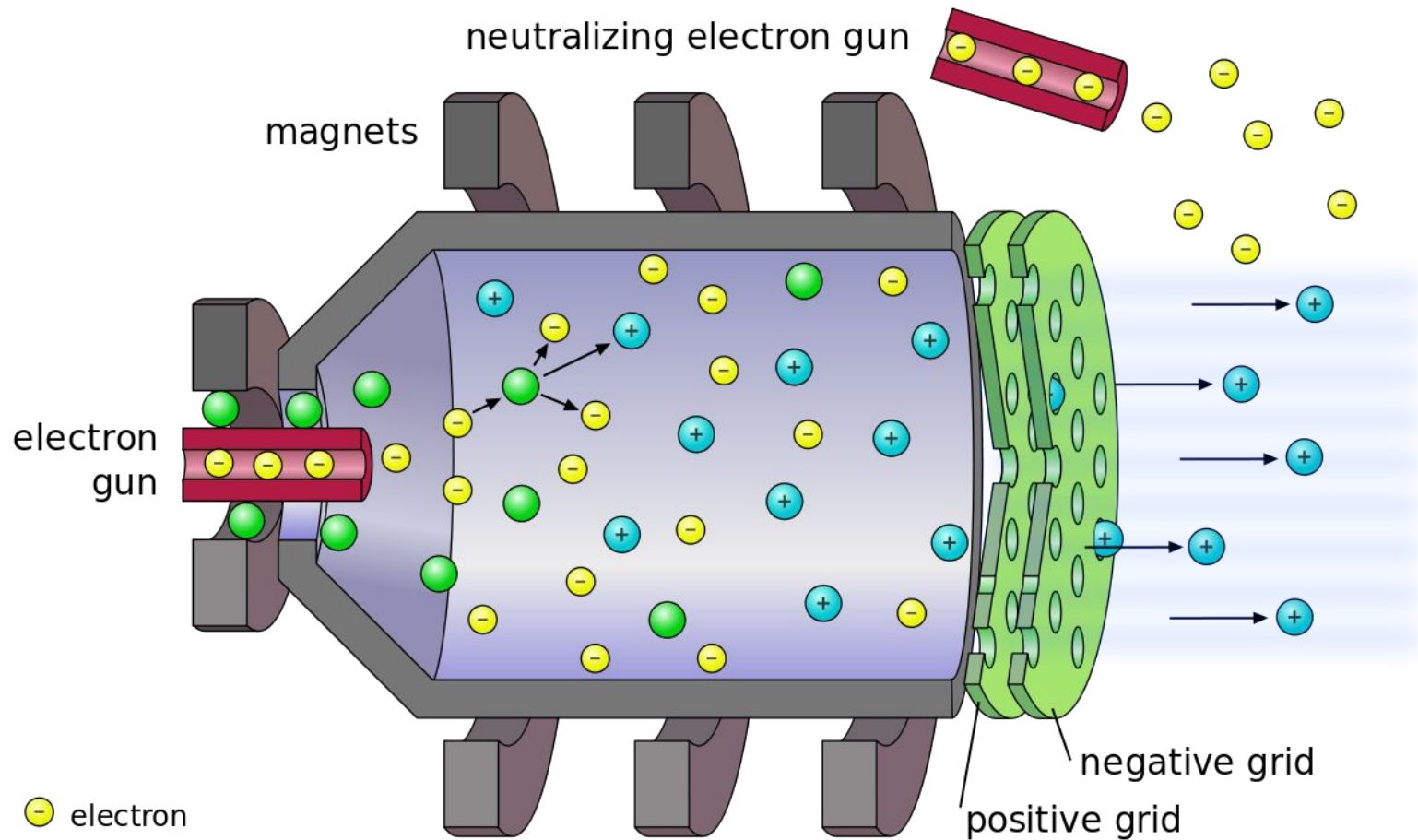


Phase 3









⊖ electron

● neutral propellant atom

⊕ positive ion

# Our Values

Many companies have a list of traits they value but are often unclear and not enforced. At Alva, we look to find people that best fit our mold and make sure that these people are rewarded. Here are some specific behaviors and skills we care about most. The more these values sound like you, and describe people you want to work with, the better you will fit in at Alva.



## NEVER STOP ASKING QUESTIONS

Curiosity is one of the main characteristics that we look for in an employee. It makes an employee eternally valuable as they are constantly looking for opportunities to learn and add to the team.



## VALUING HIGH QUALITY FEEDBACK

Feedback is one of the best ways for a person to improve. Without the ability to be straight forward and give high quality feedback, we believe that Alva will be unable to grow the way we need it to.



## HIGH STANDARDS FOR WORK

Developing high standards for your peers and yourself is vital to building a high quality work environment. Readjusting your standards and enforcing them in the form of high quality feedback or presentations is what we look for.



## HAVING OWNERSHIP MENTALITY

One of the main features of joining a startup is being able to make a difference and having the feeling of being valued. At Alva, we strive to create an environment where everyone has the potential to make a difference and feel valued.




## VALUE GOOD IDEAS OVER HIERARCHY

Good ideas is what has driven Alva to where it is right today and is how we hope it drives growth into the future. At Alva, all of our employees are partners in our company and all good ideas will be treated with respect and valued.



## BIAS TOWARDS ACTION

We respect calculated risk taking. We respect people making decisions and acting on a plan. In a fast paced business environment, we have to move faster than everyone else by taking action and innovating faster than competition.



Join the crew, help  
us spark the electric  
revolution.



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