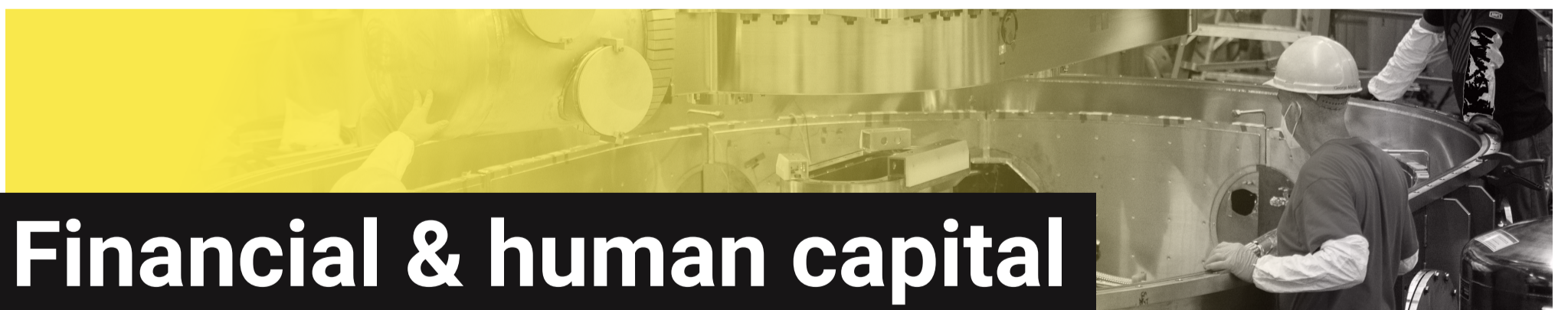
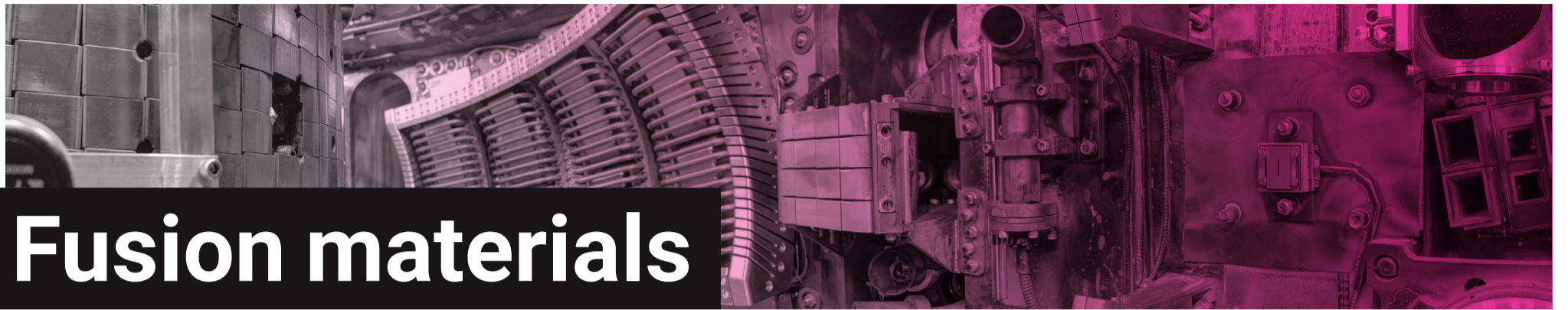


# Commercial Opportunities for the Fusion Energy Ecosystem

How **entrepreneurs**, **investors**, and **researchers** can **build** key products and services for tomorrow's fusion industry





# Commercial Opportunities for the Fusion Energy Ecosystem

How **entrepreneurs**, **investors**, and **researchers** can **build** key products and services for tomorrow's fusion industry.

## Fusion materials

### Plasma-facing materials

Engineer materials that can withstand a fusion environment on commercial timescales.

### Structural materials

Provide advanced structural materials needed to construct vacuum vessels, molten salt blankets, and piping.

### Superconducting materials

Develop electromagnets that maintain their performance under irradiation.

### Tritium permeation barriers

Improve the industry's safety and productivity by preventing leakage of tritium across components.

## Components & consumables

### Enriched lithium supply

Provide lithium for fusion blankets with a higher concentration of lithium-6.

### Radiation-hard sensors and electronics

Deliver sensors and maintenance systems that can withstand irradiation to enable plasma monitoring and control.

### Vacuum pumps

Provide durable and tritium-compatible vacuum pumps for plasma exhaust.

### Isotope and element selectivity

Commercialize new technologies to separate hydrogen isotopes and other species in pumping particle streams.

### Tritium marketplace

Manage the production, storage, transportation, and trading of tritium across national boundaries.

### Molten salt supply

Supply and manage challenging molten salts like FLiBe for fusion blankets.

### Solid-state plasma heating components

Deliver next-generation transistor chips for plasma heating.

## Subsystems

### Tritium fuel cycle

Provide a fuel cycle subsystem that achieves tritium self-sufficiency and minimizes tritium inventories.

### Integrated plasma heating and current drive actuators

Make more cost-effective, high-power, high duty cycle, high-efficiency plasma heating and current drive actuators.

### Cryogenics

Modernize cryogenic cooling systems to complement the efficiency of new high-temperature superconducting fusion magnets.

### Heat exchangers

Design heat exchange subsystems capable of withstanding the effects of radiation and high temperatures.

### Thermal storage

Enable fusion plants to work seamlessly within a grid populated by other power sources by developing integrated thermal energy storage systems.

## Financial & human capital

### Third-party standards & ratings for fusion milestones

Improve confidence of capital markets and lend credibility to private fusion companies by providing standardization and rating services.

### Workforce training and recruiting

Solve the challenge of human capital with fusion industry training and recruitment tools.

### Legal services for fusion developers

Streamline legal and administrative processes for fusion companies.

### Community engagement and communications

Tell the story of fusion power and shape public perception through savvy engagement and communications strategies.

## Software, services & facilities

### Materials testing

Provide access to facilities that approximate a fusion environment to enable testing and qualification of candidate materials.

### Commercial-grade plant design software

Create integrated, easy-to-use software to dramatically simplify the task of commercial teams developing new fusion plants.

### Robotic maintenance

Develop robust robotic tools to replace plasma-facing components and perform system maintenance.

### Liquid waste technologies

Improve fusion's sustainability with liquid waste management and disposal systems capable of removing tritium.

### Component qualification and integrity testing

Taking cues from the existing aerospace and nuclear fission industries, create a robust market for rapid compound stressor component qualification and testing.

### High-precision engineering and component manufacturing

Exploit the production potential of additive manufacturing to construct intricate components out of metal alloys.

