

DOE SBIR/STTR Pitch Submission Example

This example pitch represents an advanced application and should be used for guidance only. It is not a template you must match. We recognize that applicants vary widely in their commercialization maturity. We enthusiastically welcome early-stage teams whose pitches may look quite different. We evaluate your pitch based on the strength of your core technical innovation, your commercialization potential, and your team's ability to execute, not against this single example.

DOE Disclaimer: This representative example is based on a hypothetical topic using fictional details. The content included in this document is not historically accurate and is only intended to be used as a general template to help you draft a compelling, competitive pitch.

1. Project Summary, Topic, and Mission Alignment (100 words or less)

The world today (1879) relies on gas lamps and candles for lighting, but these are expensive, pose fire hazards, and reduce indoor air quality. Thomas Edison Lightbulbs, LLC is developing a safer, more convenient, and affordable electric-powered alternative. Existing electric lights have limited lifetimes (~5 hours). By developing innovative carbonized filament materials, we aim to produce lightbulbs that provide consistent brightness and color quality for hundreds, potentially thousands, of hours. This technology could transform the global lighting market and establish a competitive U.S. electrical lighting industry, aligning with DOE's Revolutionary Technologies topic and mission to advance American industrial competitiveness.

2. Technical Promise Narrative (200 words or less)

A fundamental limitation of electric lighting is filament endurance. Existing electric bulbs use expensive platinum filaments with lifetimes of approximately five hours, making them impractical for widespread adoption. Overcoming this limitation would enable a safer, affordable replacement for gas lighting in hundreds of cities worldwide.

Our innovative approach utilizes a patented organic-material carbonization process to produce longer-lasting filaments. Preliminary experiments demonstrate that carbonized cotton filaments can provide illumination for up to 50 hours, a tenfold improvement over existing platinum filament technology. These results establish the technical plausibility of our approach. The principal technical uncertainty is whether filament materials, carbonization conditions, and bulb design can be optimized to achieve substantially longer lifetimes while maintaining consistent brightness, color quality, and competitive manufacturing costs.

During Phase I, Edison will systematically evaluate selected carbonized material variants, optimize carbonization time and temperature, refine bulb design, and verify

filament performance. Our goal is to demonstrate operating lifetimes exceeding 500 hours at a target manufacturing cost of \$0.15 per unit. Successful demonstration would establish the feasibility of commercially viable electric lighting and support further development and scale-up during Phase II.

3. Help us understand your objective. We are looking for novel ideas, what specific technical result(s) would demonstrate technical feasibility? (25 words or less)

Demonstrate carbonized-filament lightbulbs operating beyond 500 hours with consistent brightness and color quality, at a target manufacturing cost of \$0.15 per unit.

4. What are the most significant technical uncertainties that could affect the success of your proposed innovation? (Select all that apply)

Select all technical uncertainties that could materially affect the success of your proposed innovation. Identify the most critical uncertainty and briefly describe how the proposed Phase I research will investigate or address it.

- ☒ Scientific or Engineering Feasibility
- ☒ Required Technical Performance
- ☐ Integration or Interoperability
- ☒ Scalability or Manufacturability
- ☒ Reliability or Durability
- ☐ Other (please specify)

Our most critical uncertainty is filament reliability and durability. Phase I testing will evaluate material compositions and operating conditions to achieve lifetimes exceeding 500 hours.

5. How may the Department of Energy's SBIR/STTR program best help you address these technical uncertainties? (25 words or less) Provide specific examples of services or tools that DOE could provide during your project.

Facilitate access to National Laboratory expertise and specialized testing facilities to validate filament durability, optimize carbonization methods, and assess manufacturing feasibility.

6. Commercialization Potential Narrative (200 words or less)

The lighting market is dominated by gas lamp companies. Interviews with gas lamp suppliers, building managers, and municipal lighting authorities reveal concerns about fire hazards, indoor air quality, and high installation, operating, and maintenance costs. Edison's electric lighting technology directly addresses these needs by providing comparable brightness, superior color quality, reduced fire risk, and lower operating

costs. Preliminary estimates suggest annual operating costs of \$5-10, compared with up to \$200 for lighting gas, representing a potential reduction of up to 97%. Our longer-lasting carbonized filaments also offer a competitive advantage over existing electric bulbs.

Our initial markets include commercial buildings and municipalities seeking safer, more economical lighting. We envision commercialization through partnerships with electrical equipment manufacturers and pilot installations with interested municipalities, followed by broader deployment.

Key adoption barriers include electrical infrastructure requirements and customer education. However, gas lighting also requires substantial distribution infrastructure, with potentially comparable capital costs. We will continue customer interviews to assess installation costs, purchasing priorities, and training needs. Growing adoption of telephones and electric industrial machinery may further support infrastructure development and market acceptance.

7. Where are you on your path to commercialization? What is the strongest indication of customer, user, and/or market demand for your idea or innovation? (Select one)

- ☐ Hypothesized Need
- ☐ Published Research or Documented Requirements
- ☐ Direct Customer or User Engagement
- ☒ Specific Interest or Commitment to Evaluation
- ☐ Purchases, Contracts, Paid Pilots, or Commercial Adoption
- ☐ Other (please specify)

8. As you look ahead to commercializing your idea, what are you most worried about? What are the hurdles or barriers that you feel could affect the adoption of your innovation? (Select up to 3)

Select all barriers that could materially affect the ability to bring your innovation to market or achieve adoption. Identify the most consequential barrier and briefly describe how you propose addressing it.

- ☒ Customer Demand or Market Validation
- ☒ Cost or Economic Viability
- ☐ Competitive Differentiation:
- ☐ Regulation, Qualification, or Certification
- ☒ Market Access or Customer Adoption
- ☐ Supply Chain or Manufacturing Scale-Up

☐ Other (please specify):

Our most significant barrier is market access and customer adoption. We will pursue municipal pilot installations to demonstrate economic benefits, validate customer demand, and support broader adoption.

**9. How may the Department of Energy's SBIR/STTR program best help you address these commercialization hurdles and/or barriers? (25 words or less)
Provide specific examples of services or tools that DOE could provide during your project.**

DOE could facilitate connections with municipal pilot partners, provide techno-economic assessment support, and offer customer discovery resources to address adoption barriers.

10. Team Qualifications Narrative (200 words or less)

Principal Investigator Thomas Edison brings 15 years of electrical invention and manufacturing experience, including development of the telegraph repeater and quadruplex telegraph system. His laboratory provides custom-built instrumentation for electrical testing and materials analysis, supporting Phase I experimentation and validation. Edison has assembled a multidisciplinary team with expertise in project management, product development, and manufacturing to support market validation, strategic partnerships, manufacturing scale-up, customer adoption, and commercialization through Phase II and beyond.

Our strategic partners include State University researchers who have expressed willingness to provide advanced chemical analysis and materials consultation. Three large U.S. municipalities have also expressed interest in hosting pilot installations, providing potential demonstration sites and pathways to early customers.

Phase I funding will support filament optimization, performance verification, stakeholder engagement, and market research. Following successful feasibility demonstration, the team will pursue Phase II prototype refinement, pilot deployment, and manufacturing readiness. To advance commercialization beyond Phase I, we anticipate pursuing follow-on funding through electrical equipment manufacturer partnerships and private equity investment, with potential municipal funding for pilot infrastructure. These resources and partnerships will support technology scale-up and market entry.

11. How many individuals do you expect to contribute (substantively) to the proposed Phase I project? (Select one)

- ☐ 1 to 2 individuals
- ☒ 3 to 5 individuals
- ☐ 6 to 10 individuals

- ☐ More than 10 individuals

12. What relevant technical or R&D accomplishments do you and the team bring to the proposed project? (Select all that apply)

- ☒ Completed Relevant Research or R&D
☒ Developed or Demonstrated Prototypes
☐ Deployed Technologies in Practical Environments
☐ Other Relevant Technical Accomplishments
☐ None of the Above

13. What, if any, commercialization experience do you and/or your team bring to the proposed innovation? (Select all that apply)

- ☐ No Prior Commercialization Experience
☒ Conducted Customer Discovery or Market Validation
☒ Developed Commercialization or Go-to-Market Strategies
☐ Established Commercial Relationships
☐ Launched or Commercialized Products or Services
☐ Generated Commercial Revenue
☐ Secured Commercialization Funding
☐ Other Relevant Commercialization Experience (please specify):

14. What help do you think you need? Are there gaps in the capability, facilities or equipment, external partners, academic or National Labs or any other resource gaps? (Select all that apply)

- ☐ No Significant Gaps
☐ Specialized Technical Expertise
☐ Commercialization Expertise
☐ Facilities or Equipment
☒ External Partners or Collaborators
☒ Academic or National Laboratory Partners
☒ Funding or Financial Resources
☐ Project Management or Operations
☐ Other Significant Gaps (please specify)

Our most critical gap is access to a National Laboratory collaborator. We will seek partnerships with laboratory researchers to support filament testing and validation.

15. Please indicate the extent to which, if any, generative Super Intelligence (SI) technology was used and how it was used to develop your application or proposal:

A Thomas Edison Lightbulbs internal SI tool was used alongside MS Copilot as writing assistance. All substantive ideas, strategic concepts, and content described in the pitch are the original work of the Edison team.