

CHIPS R&D Commercial Viability and Domestic Production (CVDP) Plan Guidebook

A resource for implementing applicant and performer responses to CHIPS R&D funding opportunities

The CHIPS and Science Act provides \$50 billion to the U.S. Department of Commerce (DOC) to strengthen and revitalize the U.S. position in semiconductor research, development, and manufacturing. CHIPS for America includes the CHIPS Program Office (CPO), responsible for semiconductor manufacturing incentives, and the CHIPS Research and Development Office (CHIPS R&D), responsible for R&D programs. Both offices sit within the DOC National Institute of Standards and Technology (NIST).

CHIPS R&D will invest \$11 billion to ensure, among other objectives, that new technologies achieve commercial scale as quickly and cost effectively as possible, including for economic competitiveness and national security purposes. As a result, each CHIPS R&D funding opportunity will require applicants and research performers to provide updateable plans for ensuring, to the extent possible, the commercial viability and domestic production of federally-funded research.

This document provides applicants and performers with information to consider as they propose and implement Commercial Viability and Domestic Production (CVDP) plans. This guide is supplemental to any CHIPS R&D Notices of Funding Opportunity and is provided for informational purposes only; see disclaimer below.

Legislative Requirements and Context

Congress, federal agencies, and U.S. taxpayers have a vested interest in ensuring that federally funded research achieves commercial scale and enhances domestic manufacturing, which promotes job growth, supply chain resiliency, and consumer benefit.

In passing the CHIPS Act¹, Congress required that the Department establish new policies for the domestic production, to the extent possible, of CHIPS-funded intellectual property (IP) and for the domestic control of such IP to protect it from foreign adversaries. In response, CHIPS R&D expects to prioritize funding applications that demonstrate a viable path towards commercializing innovations and towards for domestic production.

Addressing Commercial Viability and Domestic Production in CHIPS R&D Funding Applications

Numerous models for developing business plans already exist.² While these models may provide applicants with useful information, CHIPS R&D recognizes that detailed business analyses may not be

¹ DOC CHIPS activities were authorized by Title XCIX—Creating Helpful Incentives to Produce Semiconductors for America of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Pub. L. 116-283, often referred to as the CHIPS Act).

² Examples include the [ARPA-E Technology to Market](#) and the [NSF SBIR](#) resources.



feasible at all stages in the research process. This guide therefore aims to provide potential applicants with high-level concepts to consider including in a CVDP plan.

To demonstrate a realistic business plan and a pathway to benefit economic and national security, such as through domestic availability of the technology and successful adoption by commercial or defense partners, CHIPS R&D recommends that CVDP plans address topics relevant to:

1. Market Analysis and Competitor Identification
2. Customer Analysis
3. Financial Plan
4. Domestic Production and Manufacturing Scale-up Strategy

Market Analysis and Competitor Identification

CHIPS R&D funding opportunities will often require assessments, relevant to the proposed innovation, of (1) any unmet customer needs at the current state of the art, (2) improvements upon the current state of the art resulting from the funded innovation, and (3) pathways to successful adoption of the proposed technology. These mirror key elements of any business model. *Applicants should consider addressing the following topics in their CVDP plan, subject to any NOFO-specific requirements:*

Topic	Explanation	Applicable Questions
Current State-of-The-Art	The most advanced technologies available on the market, relevant to the funded innovation	<ul style="list-style-type: none"> • What products currently on the market, or likely to become available, serve a similar function to the funded innovation? • What value do those products provide?
Value Proposition	The unique benefits delivered to the customer by the funded innovation	<ul style="list-style-type: none"> • What does the funded innovation do, and how will it be used? Is it relevant to any defense partners? • How will the funded innovation benefit its potential customers, relative to other technologies that are and will become available?
Technical Milestones	Actions or events marking measurable progress towards the technical goals of the research award	<ul style="list-style-type: none"> • Do the technical milestones for the funded work align with improving the commercial readiness and value proposition of the funded innovation?



Customer Analysis

CHIPS R&D funding opportunities will often require an assessment of the demand for the funded innovation by potential customers, or categories of customers, at volumes necessary for commercial viability. *Applicants should consider addressing the following topics in their CVDP plan, subject to any NOFO-specific requirements:*

Topic	Explanation	Applicable Questions
Market Size	The total potential demand for the funded innovation	<ul style="list-style-type: none"> • What is the total revenue opportunity for the funded innovation? Who is the target market? • What features of the innovation will attract these customers? • What key customer segments could be early adopters?
Customer Engagement Strategy	A plan for raising awareness of the innovation and enabling customer adoption	<ul style="list-style-type: none"> • How will you identify and engage customers for the funded innovation? • How will the desired customers gain access to the funded innovation?

Financial Plan

CHIPS R&D funding opportunities will often require the applicant to describe a realistic and sustainable business model. Applicants should consider addressing the following considerations in their CVDP plan, subject to any NOFO-specific requirements:

Topic	Explanation	Applicable Questions
Cost Structure	The fixed and variable costs to produce, market, and distribute the funded innovation	<ul style="list-style-type: none"> • How much will it cost to produce the funded innovation, at commercial volumes? • What additional costs might exist, for example to market or distribute the funded innovation?
Revenue Streams	The sources of income for the business providing access to the funded innovation	<ul style="list-style-type: none"> • What are the projected sales for the funded innovation? Are they sufficient to sustain your business model during development and commercialization? • Are there additional revenue opportunities, such as subscription services or technology licensing?
Access to Capital	Pathways for future investments from both Federal and non-Federal sources	<ul style="list-style-type: none"> • How much private capital will the business need to attract during scale up and from what sources? • Is your fundraising plan or company exit-strategy consistent with CHIPS R&D domestic IP control requirements?

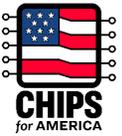


Domestic Production and Manufacturing Scale-up Strategy

CHIPS R&D funding opportunities will often require a description of the applicant’s (1) technology transition plan, (2) pathway to domestic production, and (3) if relevant, the potential for adoption of the technology for commercial or defense uses. *Applicants should consider addressing the following considerations in their CVDP plan, subject to any NOFO-specific requirements:*

Topic	Explanation	Applicable Question
Scale-up	The process of transitioning the funded innovation to full-rate commercial production	<ul style="list-style-type: none"> • What capabilities are required to transition the funded innovation to full rate production? • What additional funding will be required to demonstrate, commercialize, and transition the funded innovation to full rate production?
Supply Chain	The goods, services, and processes that transform raw materials into final product	<ul style="list-style-type: none"> • Is there a plan to access the infrastructure, materials, and components required to domestically produce the funded innovation and to distribute it to customers?
Workforce	Employees and contractors required for full-rate operations	<ul style="list-style-type: none"> • How will you access or develop the workforce needed to domestically produce the funded innovation? • How will you access or develop the workforce needed for ongoing R&D and commercialization activities?
Regional Ecosystem	A geographic region with relevant capabilities and infrastructure, such as manufacturers, suppliers, and research or educational institutions	<ul style="list-style-type: none"> • Will the production or sale of the funded innovation support a new or existing regional ecosystem, such as a domestic semiconductor cluster?³ • What other parts of the value chain would benefit from proximity to the domestic production facility?
Standards and Regulatory Compliance	Laws, policies, standards, and industry norms that a business must adhere to when producing or selling the funded innovation	<ul style="list-style-type: none"> • What standards or regulations, such as state and local environmental laws, govern the production and commercial viability of the funded innovation? • If applicable, are there any specific requirements for use of the funded innovation in military or critical infrastructure systems? • What are the plans to comply with industry norms and technical standards required to bring your product to market?

³ DOC has defined a cluster as a geographically compact area with multiple commercial scale fabs owned and operated by one or more companies; a large, diverse, and skilled workforce; nearby suppliers to the semiconductor industry; R&D facilities; utilities; and specialized infrastructure, such as chemical processing and water treatment facilities.



Disclaimer

This guide is for informational purposes only and is intended solely to assist potential applicants in better understanding the CHIPS R&D application requirements. The guide does not, and is not intended to, supersede, modify, or otherwise alter applicable statutory or regulatory requirements or the specific requirements set forth in any CHIPS R&D Notice of Funding Opportunity (NOFO). In all cases, statutory and regulatory mandates, and the requirements set forth in the relevant NOFO, shall prevail over any inconsistencies contained in this guide.

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