

**APPENDIX TABLE 5A-2.** Quantitative data used in the pilot year demonstrations. The various quantitative data used by NNCTA projects are organized by type and critical technology. Arrow direction corresponds to data used for strategic planning (right facing) vs. impact assessment (left facing). Numbers in the arrows correspond to the notes below, detailing the data source and, when relevant, collection process.

	Semiconductors	Artificial intelligence	Energy storage and critical materials	Biopharmaceuticals
Patents (e.g., USPTO)	1	2		
Publications (e.g., Dimensions/Open Alex, Web of Science, SCOPUS, Dimensions)	3	4		
Technology roadmaps (e.g., IRDD)	5			
Government census data (e.g., ABS, ACS, APS)		6	7	
Government labor data (e.g., BLS, state-level labor and education data)	8	9		
Online job and skill data (e.g., O*NET)			10	11
Job postings (e.g., Burning Glass)		12		
Private firm data	13	14	15	16

- 1 US patent specifications from Harvard USPTO Patent Dataset (HUPD)
- 2 7.6 million patents granted by the US Patent & Trademark Office (1960–2019) and Open Syllabus dataset
- 3 All titles and abstracts of articles published in the *IEEE Journal of Solid State Circuits* since 2012
- 4 87.6 million publications from the Microsoft Academic Graph (1960–2019), spanning 19 disciplines and 292 fields
- 5 IRDS 2022 CMOS technology maps
- 6 Nationally representative survey, the 2018 Annual Business Survey (ABS), which since 2017 has data on firm-level adoption of advanced technologies, including AI, for more than 850,000 private sector firms matched to the US Census Bureau’s Longitudinal Business Database (LBD) to obtain data on firm employment, revenue, and founder characteristics
- 7 US Current Population Survey, American Community Survey, and Occupational Employment and Wage Survey data
- 8 Sector-level productivity data from US Bureau of Labor Statistics
- 9 LBD data on firm employment and revenue
- 10 Labor and skill demand for battery-related manufacturing characterized using the O\*NET survey instrument from BLS
- 11 Labor and skill demand for advanced pharmaceuticals-related manufacturing characterized using the O\*NET survey instrument from BLS
- 12 Detailed job posting data from Lightcast (formerly known as EMSI Burning Glass), a high-quality data source with comprehensive coverage of over 40,000 online job portals since 2010
- 13 Firm and organizational data on CPU and GPU characteristics (desktop, mobile, and server and high-performance computing)
- 14 Firm-level size, geographic data, job postings, and production statistics
- 15 Firm-level historical data on critical material demand, prices, mining production, and mining costs
- 16 Private firm data relating to advanced pharmaceutical techniques, supply chains, and investment activities