Joint Committee on Semiconductor

Semiconductor Competitiveness Task Force Overview

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*Build a strategy to win/attract Oregon's due share of the **$280 billion*** national semiconductor investment boom.*

*Boston Consulting Group

An ecosystem to envy

FIG. 7: Rank of top 15 semiconductor workforces by state

Rank	State	Semiconductor employment	Share of U.S. semiconductor employment	Rank	State	Semiconductor employment	Share of U.S. semiconductor employment
1	California	63,300	23%	9	North Carolina	7,900	3%
2	Texas	43,800	16%	10	Washington	5,000	2%
3	Oregon	40,300	15%	11	Virginia	4,100	1%
4	Arizona	28,900	10%	12	Ohio	4,000	1%
5	Florida	12,900	5%				
6	Idaho	12,300	4%				
7	Massachusetts	12,200	4%				
8	New York	10,200	4%				

SIA SEMICONDUCTOR INDUSTRY ASSOCIATION | OXFORD ECONOMICS

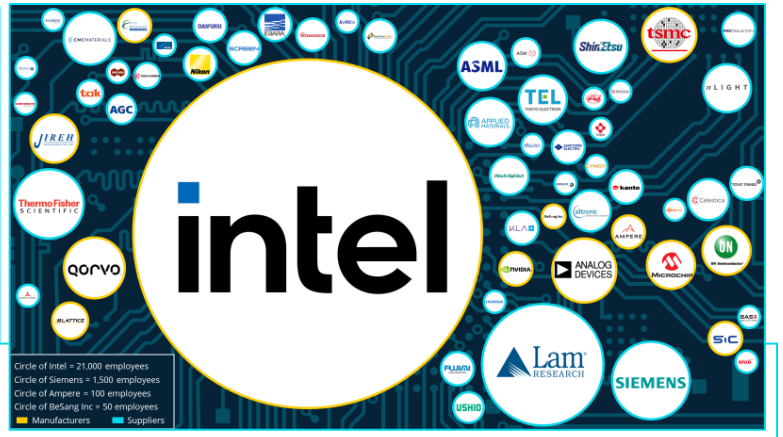
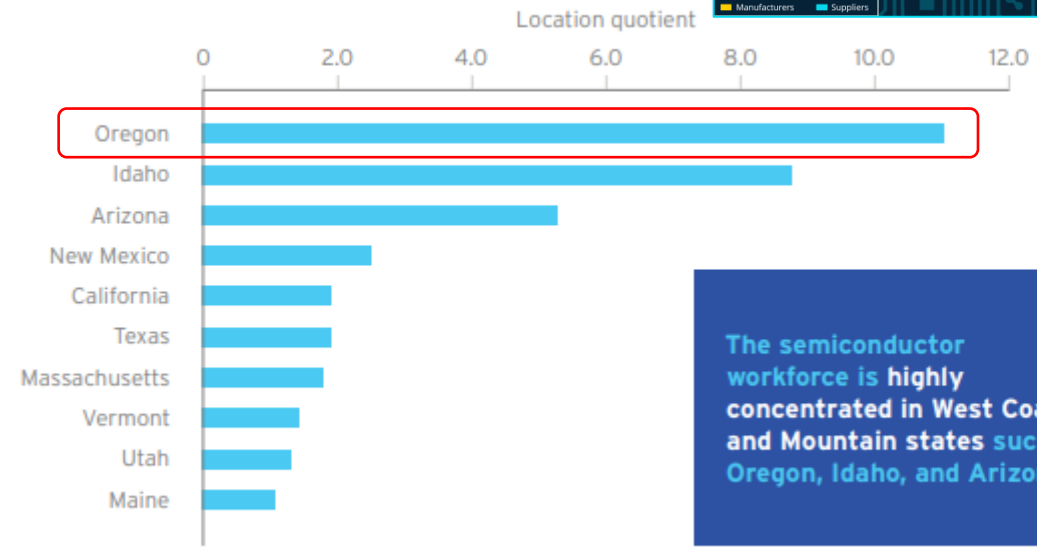
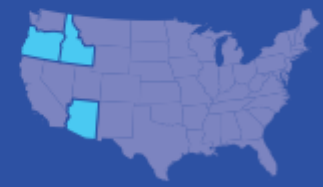


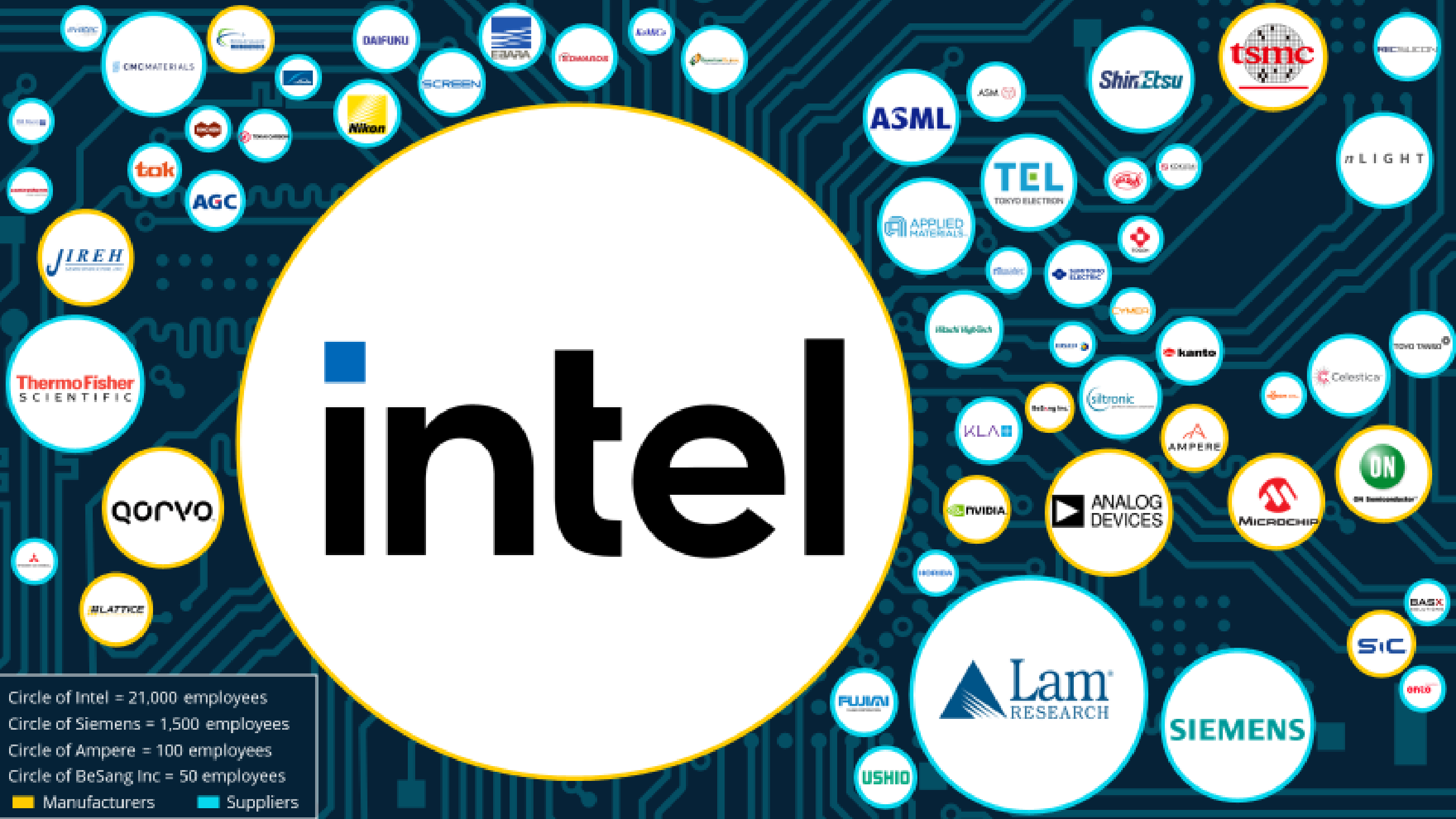
FIG. 8: Top states by workforce location quotients (LQ)



Source: Oxford Economics

The semiconductor workforce is **highly concentrated in West Coast and Mountain states** such as Oregon, Idaho, and Arizona.



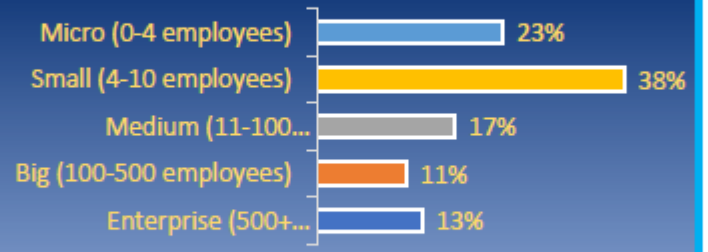

intel
Circle of Intel = 21,000 employees
Circle of Siemens = 1,500 employees
Circle of Ampere = 100 employees
Circle of BeSang Inc = 50 employees
Manufacturers
Suppliers

Oregon Supplier Ecosystem

$2.8 Billion

In 2021, we spent $2.8 billion with Oregon based companies. Our top purchases included factory equipment, spare parts, construction services, trade labor, and factory consumables.

Supporting small businesses in Oregon

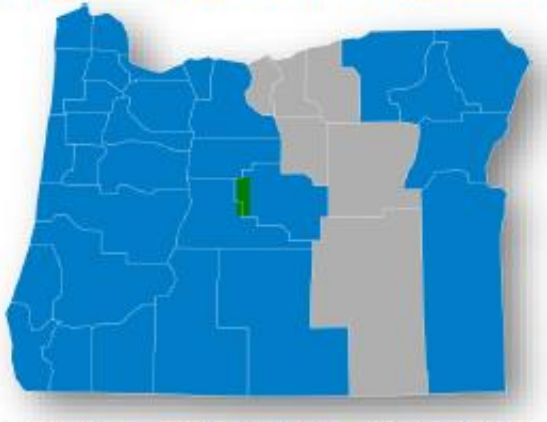


We support the growth and development of small businesses and **more than 50%** of the suppliers in state are **micro or small business.**

500+ Suppliers

We partner with over 500 Oregon based suppliers supporting a diverse range of businesses and industries across the state in 15 counties.

Driving Economic Growth throughout Oregon



This map shows Intel's investments in local suppliers and subcontractors of Hoffman Construction, who have been working with Intel for the past 10 years.

Our Opportunity

Investment

$40 billion invested here, 15% of a $280 billion national investment surge

Jobs

Creating **~10,000** direct industry jobs + **~60,000** jobs total (across construction, supply chain)

Tax Revenues

Per $1 billion in cap-ex

- 7,000 jobs (mostly construction-related)
- **$44 million in one-time state + local tax revenues**

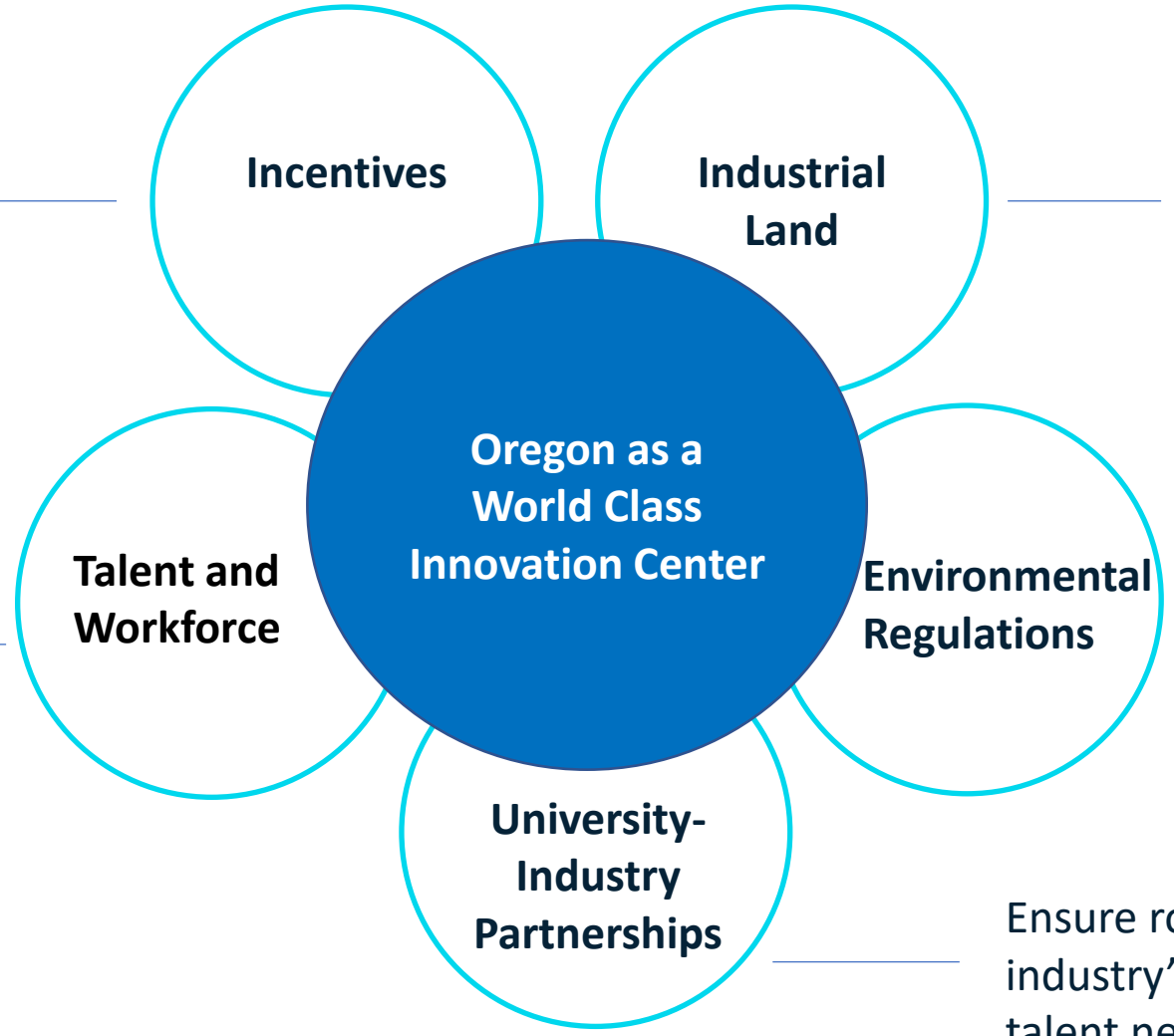
Per 2,000 permanent jobs

- An additional 4,000 jobs in related industries
- **$56 million in *annual* state and local tax revenues from incomes**

Our Vision: secure Oregon's position as a global capital of semiconductor R&D + design

- Enable development of a minimum of 1 more major R&D fabs *(e.g. Intel's activity at Ronler Acres)*
- Develop a cluster of leading-edge fabless chip designers *(e.g. Ampere and Lattice Semiconductor)*
- Encourage expansions of all incumbent device manufacturers and suppliers, while encouraging more R&D & product development to occur in Oregon (e.g. Analog Devices, Lam Research)

How we'll win: by building a world-class innovation ecosystem



Improve cost-competitiveness with other states

Ensure a strategic & responsive supply of sites that meet industry needs

Provide world class talent across the continuum that tightly matches industry needs

Meet environmental goals while providing certainty and speed in clean air permitting (accomplished administratively)

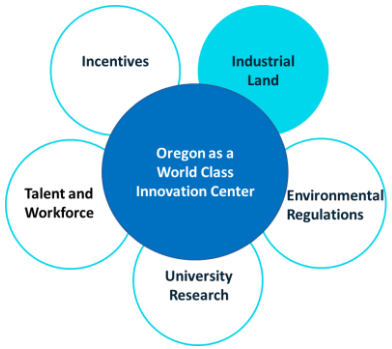
Ensure robust collaboration to meet industry's research and advanced talent needs

Industrial Land

- Need land to facilitate another 1990's-like semiconductor boom – 2,000 acres then:
  - Two (2) sites of 500+ acres for advanced R&D or production fab operations
  - Four (4) sites of 50-100 acres for device manufacturers or equipment mfgs
  - Eight (8) sites of 15-35 acres for key suppliers to the ecosystem
- Found we don't have any 500-acre sites that meet public- and private-sector siting criteria within current UGBs
- Found that we have very few development-ready 50-100 acre and 15-35 acre sites prime for semiconductor uses

Industrial Land – bottom line

- Oregon's land constraints have pushed it off-the-radar for major site selectors (we know major firms have looked in past two years with nothing to show)
- Even if we have everything else in place, without available land that meets industry requirements, those jobs have no choice but to go elsewhere.

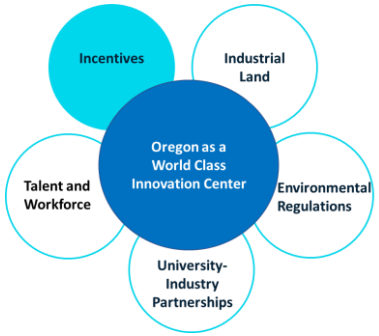


Overhauling State Incentive Package

We must address two challenges

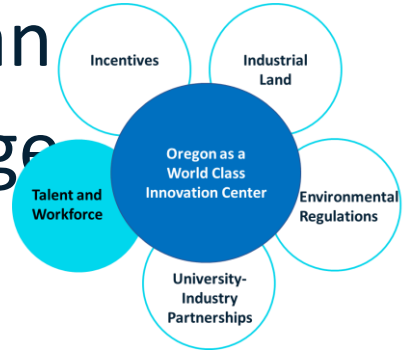
- While Oregon offers many advantages, it is more expensive to build here.
- Other state have updated their incentive tools to better match industry needs, including upfront cash and R&D tax credits.

Modernizing our incentives can provide a broad array of high-paying jobs *and* generate substantial new public revenue.



Workforce, Talent and Research

- ‘Going where the talent is’ is the number one locational factor for many semiconductor companies
- This is a place of competitive advantage for Oregon… we have one of the deepest pools of trained talent in the U.S.
- Even so, chip makers and their suppliers are facing acute workers shortages, in Oregon and across the U.S.
- The state that builds the best talent pipeline will have an enormously valuable and durable competitive advantage

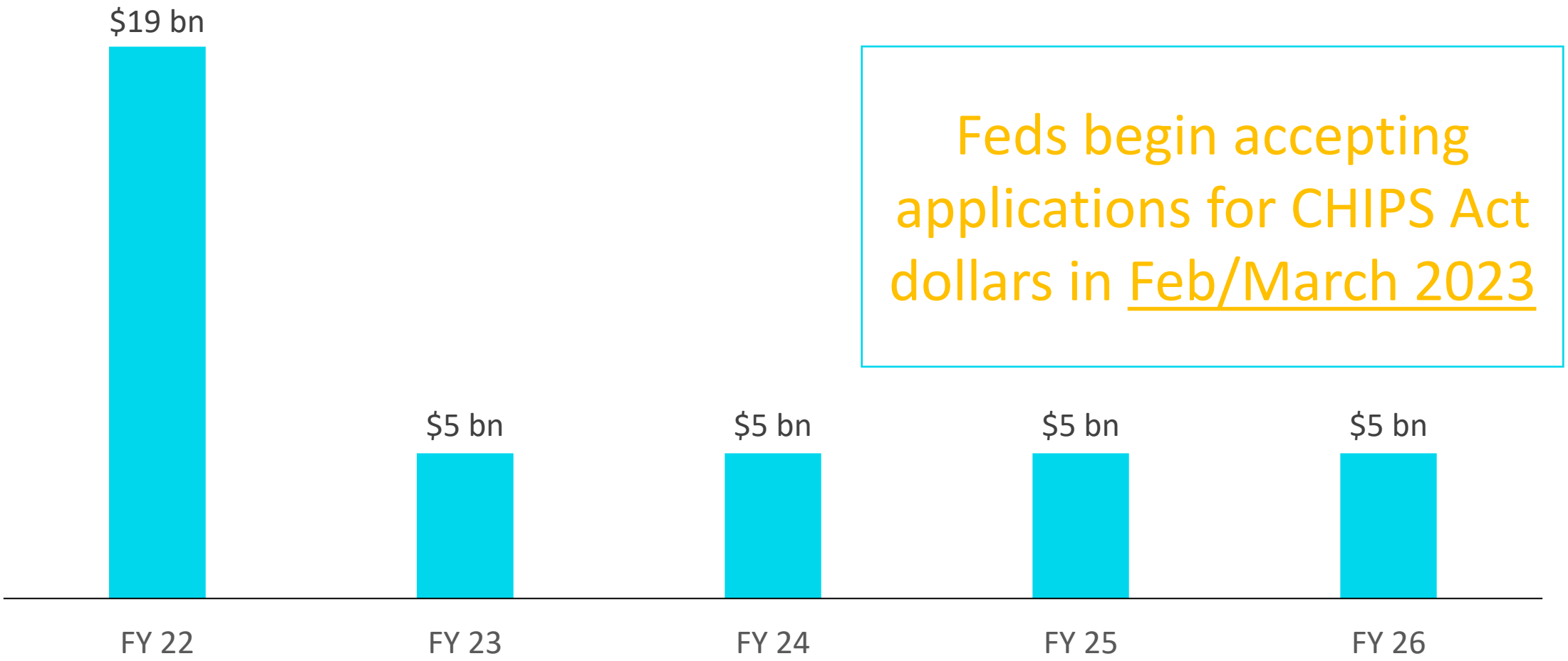


Agenda

- **Expand Supply of Suitable Industrial Lands**
  - Capitalize Business Oregon site readiness programs
  - Placeholder for any potential policy needed to expedite efforts to increase supply of land for critical semiconductor projects
- **Preserve, Strengthen and Add Key Incentives**
  - ADD: R&D tax credit, Investment tax credit.
  - ADD: Capitalize mechanism to provide forgivable loans to offset upfront expenditures
  - MAINTAIN: Gain Share provision related to SIP, Enterprise Zones
- **Create a Comprehensive Semiconductor Talent-Investment Plan**
  - Establish Semiconductor Talent Investment Council, overseeing Semiconductor Talent Investment Fund, investing in:
    - Programs to draw more people into semiconductor career pathways
    - Community college semiconductor workforce programs
    - Semiconductor-related university degree programs and research
- **Bolster the Research Ecosystem Provided by Key Public Universities**

A time-limited opportunity

Federal incentives distributed over 5yrs, heavily frontloaded



Feds begin accepting applications for CHIPS Act dollars in Feb/March 2023

Our Recommendations Align Well with Commerce Department Criteria

- Entities must be offered “covered incentives” by state/local government. Examples provided:
  - **Workforce-related incentives** to ensure broad talent pipelines
  - Concessions with respect to real property, including **long-term tax credits** to ensure that firms continually invest in upgrading and expanding facilities
  - **Funding for R&D**
  - Investments in **industrial infrastructure** supporting the proposed project but that also could support broader development of a supplier ecosystem such as a shared utility, logistics, and production capacity.
- DoC prioritizing **equity** in applications, particularly demonstrated through partnerships with and btw workforce and education providers to place economically disadvantaged individuals in these good jobs
- DoC will prioritize projects that can **“move quickly”** with reduced project risk, ample local support and/or regional cooperation and providing broad-based benefits. States and localities expected to demonstrate this.

https://www.nist.gov/system/files/documents/2022/09/13/CHIPS-for-America-Strategy%20%28Sept%206%2C%202022%29.pdf