
A Blueprint to reinvigorate Australia's Economy

Steven Camilleri, co-founder of SPEE3D

Published-27th February 2025

Australia stands at a crossroads.

We have world-class talent, breakthrough ideas, and vast natural resources—but we hesitate when it's time to act. Instead of backing innovation, we fall back on short-term resource exports, while other nations build the industries of the future. We rely on short-term resource exports while other nations invest strategically in future-focused industries—building everything from global tech giants to advanced manufacturing hubs.

History has given us a warning—and we can't ignore it.

Metal Storm's revolutionary weapons system collapsed due to lack of support¹. UNSW's world-leading solar technology was sold offshore², fuelling another country's success. Tritium³ and EV Engineering⁴ floundered while nations with vision backed their innovators.

These are not isolated failures. They are symptoms of a system that prioritises short-term profits over long-term national strength. But we don't have to repeat this pattern.

Australia has everything it needs to lead the world in advanced industries.

We sit on vast mineral wealth, an abundance of low-cost energy, and a talent pool capable of driving global innovation. With the right strategy, we can stop being just an exporter of raw materials and start being a leader in high-tech manufacturing, AI, semiconductors, and next-generation industries.

This blueprint leads us from building foundations to climbing the value chain in high-tech sectors, and finally transforming into a nation that shapes global markets.

At its core this isn't just about policy or economics—it's about who we are. For too long, we've let a "good enough" mindset hold us back. We rationalise inaction, settle for mediocrity, and hesitate in the face of bold ideas. That must end.

The stakes could not be higher. The cost of inaction is already hitting Australians every day—rising costs, stagnant wages, and a nation that feels like it's losing its future.

But our legacy doesn't have to be one of missed opportunities. We can build a stronger, more ambitious Australia—a country that creates industries, drives global innovation, and gives the next generation a reason to stay, build, and thrive. ***Let's make suff here!***

This is our moment. The only question is: ***will we seize it?***

The Problem



Australia has a problem: we fear change.

We celebrate innovation in theory but reject it in practice.

Risk aversion stifles progress, and short-term political cycles undermine long-term success. We pride ourselves on solving problems, yet hesitate when bold decisions are needed.

Over my 25 years in industry, I've witnessed the same story play out time and time again: Australia produces world-class ideas but fails to back them. Take Metal Storm⁵, a revolutionary weapons system capable of firing over a million rounds per minute. It showcased cutting-edge potential, but without sustained support, it collapsed, leaving the world to harvest a technology born on Australian soil.

Pacific Solar⁶, emerging from UNSW with its world-leading PERC silicon cell technology, led the world in solar cell technology. Instead of realising its potential here, it was sold to Chinese interests and — now China profits from a technology we created. Hydrexia⁷, a hydrogen storage pioneer, was ahead of its time, with technology perfectly aligned to today's global push for clean energy. Yet it withered due to a lack of domestic backing, overtaken just as the hydrogen revolution began in earnest.

Australia had the chance to dominate EV charging infrastructure with Tritium⁸—but instead of backing it, we left it to struggle alone. It collapsed under financial strain, while other nations turned similar ventures into billion-dollar industries. And then there's EV Engineering,⁹ which dared to electrify the Holden Commodore. I was lucky enough to drive one of their prototypes, a car that proved Australia could compete in advanced manufacturing. But like our automotive manufacturing industry, it didn't survive.

We have every ability to make stuff here. But we don't.

These aren't just business failures—they're failures to believe in ourselves.

While other nations turn deliberate investments into thriving industries, we let hesitation and risk-aversion dictate our decisions. These examples aren't isolated; they're symptoms of a system that doesn't just miss opportunities—it actively pushes them away.

Australia has extraordinary natural wealth, but we've built an economy that bets on short-term gains. We dig it up, ship it out, and hope for the best. Other nations, with fewer resources and more obstacles, have turned their assets into diversified, high-value economies. They've built global tech giants, advanced manufacturing industries, and solutions to the world's biggest problems.

The economic pressures Australians feel today are not isolated events—they're the inevitable result of decades of underinvestment in innovation and diversification. Rising housing prices,¹⁰ stagnant wages,¹¹ inflation¹² eating away at every pay check—these issues are symptoms of a deeper problem.

By relying so heavily on resource exports, we've made ourselves vulnerable to global market fluctuations and failed to develop industries that provide stability, resilience, and prosperity.

When we allow great ideas to flounder and industries to collapse, we don't just lose opportunities for growth—we sow the seeds of today's struggles. The cost-of-living crisis, unaffordable housing, and widening inequality are the direct outcomes of prioritising short-term profits and neglecting strategic long-term investments in the nation's future.

This connection is clear, but it hasn't been made visible enough in the public eye. The challenges Australians face aren't inevitable—they're choices. Choices to prioritise only extraction over creation, to settle for "good enough" rather than push for greatness. We're all paying the price for what we've chosen.

But this isn't just a call to recognise the problem—it's a call to act. Innovation, diversification, and bold decision-making aren't luxuries; they're the only way forward. The cost of inaction is staggering, and the cracks are already visible. If we want a future where Australians can thrive—not just survive—we need to demand better. We must stop seeing ourselves as a nation limited by geography or tradition and start believing in our ability to lead.

Choosing not to act is itself a choice—one with devastating costs. But choosing to lead, to back bold ideas and invest in our potential, is how we reclaim our future. The economic struggles Australians feel today are the result of decisions made yesterday. This blueprint is a call to ensure tomorrow is different.

Australia can—and must—choose to believe in itself again.

The Idea



Australia has always been capable of greatness.

This country was built on bold decisions, resourcefulness, and innovation. From polymer banknotes that transformed global currency security to pioneering mining automation, we've shown the world what happens when Australians back themselves.

But we've allowed ourselves to settle. For decades, we've leaned on our natural resources as a crutch, failing to realise they could be the foundation for so much more. The truth is, our real power lies in the ingenuity of our people. When supported with clear vision and opportunity, we don't just innovate—we lead. This is the reputation we have overseas, one we rarely acknowledge at home.

Right now, there is a lot of concern about energy. Let's talk about it. We love to have long and complex political debates about this, but let me give you the facts. Firstly, Australia has more energy generation per capita than any country in the global top 10 high-tech exporters (see Figure 1. below), including nations like Germany and the USA. (Australia places about 30th in that list.) Our real challenge isn't about how much energy we can produce—it's about moving it around. Australia is a vast country with abundant, low-cost energy resources, but significant challenges in transmitting power to high-demand areas.

Some regions experience some of the world's lowest wholesale electricity prices due to availability of solar and wind, but this is volatile. Meanwhile, cities and high-demand regions face some of the highest electricity prices due to aging coal plants, expensive gas-based generation, and network limitations.^{13 14} As we develop new energy intensive industries, we can locate them close to low-cost generation, to shortcut this problem entirely.

Energy isn't holding us back. We have the resources, low-cost generation, and expertise to build industries where energy is an advantage, not a limitation.

*This is a real recipe for success. We can upgrade our economy, if we can accept some
bold choices.*



Let's take a look at how we're missing opportunity with our industry as it is now. Every export product we send out has a value density—a measure of the value it delivers per kilogram. Think of value density as the price per kilogram of what we export. The more value we add to a product, the higher its value density, and the more profitable and competitive it becomes.

Why not make the higher-value stuff here?

Top 10 Exporters vs Installed Generation Capacity (2023 Data)

Country	Tech export value [USD]*	installed generation capacity GW infrastructure not consumption**	Population [millions]***	Generation per capita metric [kW/person]	Tech exports per capita [USD/person]
China/HK/SAR	\$1,194,208,935,849	2921	1430.12	2.0	835
Germany	\$255,687,490,788	264	84.08	3.1	3,041
Korea, Rep.	\$209,651,189,631	151	51.74	2.9	4,052
United States	\$208,514,376,770	1222	343.48	3.6	607
Singapore	\$197,387,649,519	13	5.64	2.3	34,998
Vietnam	\$135,907,434,790	83	101.57	0.8	1,338
Malaysia	\$127,032,168,259	40	33.85	1.2	3,753
France	\$115,256,032,667	150	67.94	2.2	1,696
Netherlands	\$110,952,318,467	60	17.53	3.4	6,329
Japan	\$102,601,446,852	370	124.37	3.0	825
Ireland	\$91,363,721,988	12	5.44	2.2	16,795
Switzerland	\$84,443,768,583	26	8.8	3.0	9,596
Australia	\$7,767,880,136	106	26.39	4.0	294

*Source: worldostats 2023 data
**Source: IRENA 2023 data
***Source: IMF/UN 2023 data

Fig.01

Take Australian wool, for example. Raw fleece sells for \$4–6 per kilogram. Clean and grade it, and it doubles in value. Spin it into yarn, and it's worth \$25–50 per kilogram. Weave it into fine fabric, and the price jumps to \$50–150. Craft that fabric into a luxury wool suit, and you're looking at \$500–1,000 per kilogram or more. Yet most of the time, we stop at the first step, exporting the raw fleece and leaving the higher-value work—and profits—to others.

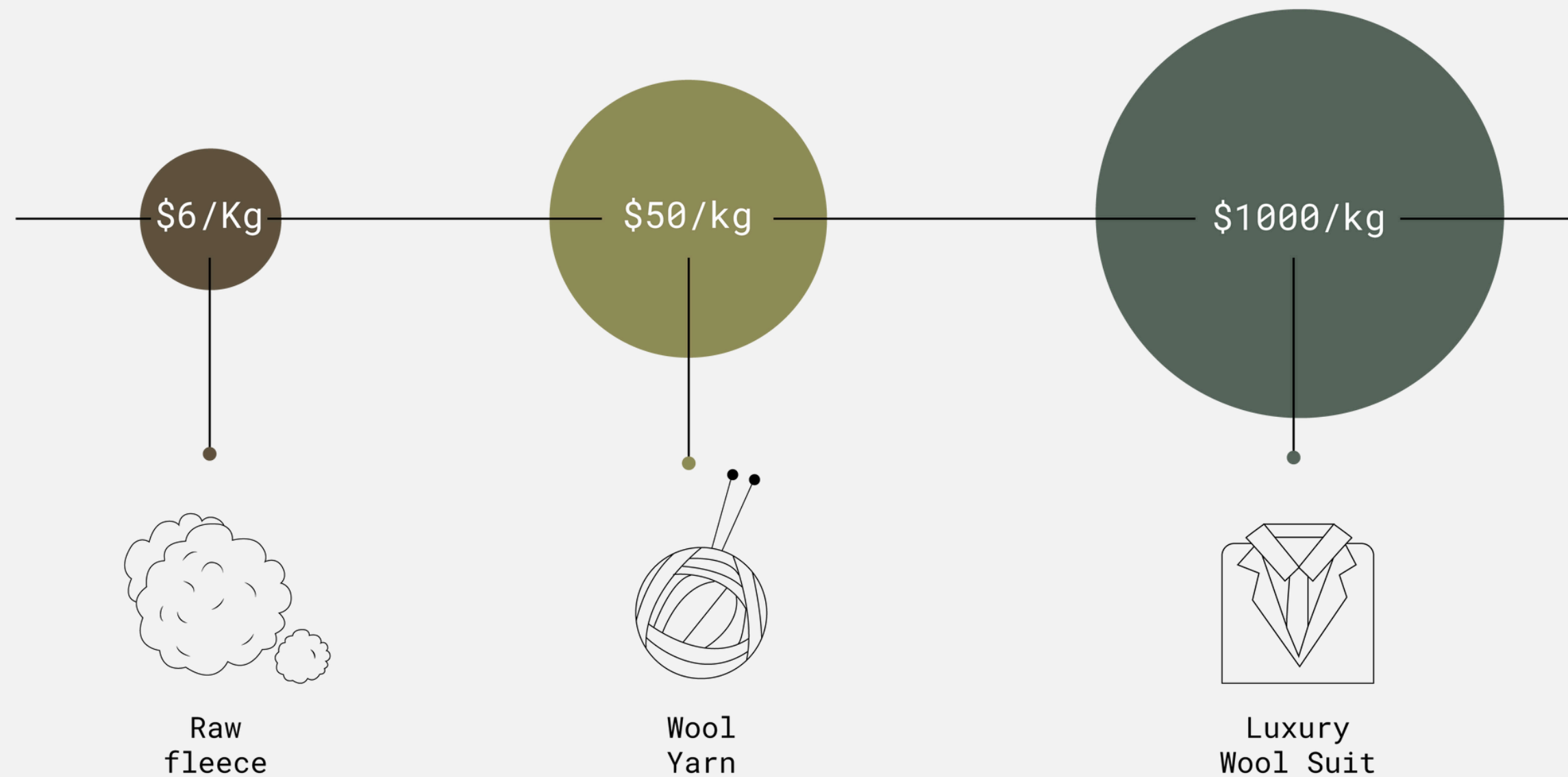


Fig.02 - Climbing the Value Chain through Innovation: Wool

The same is true for many of Australia’s top exports, like thermal coal (18c per kilogram), iron ore (15c per kilogram), and natural gas (85c per kilogram). These are some of the lowest value-density products in the global economy. The problem isn’t just that these exports are low value—it’s that they’re costly to transport relative to the profit they generate, especially for a nation as far from global markets as Australia.

The challenge isn’t just to export more; it’s to export smarter by climbing the value chain. If we can **increase the value density of our exports by even 5% a year**, we can systematically transform Australia from a resource exporter into a leader in advanced industries.

Consider this: in 2023/24, Australia exported 1,400 megatonnes of goods for a total value of \$387 billion. That averages out to just 27.6c per kilogram. A 5% improvement would bring us to 29c per kilogram next year. That’s a small step—but it adds up fast when applied across industries.

This isn’t just theory—it’s about finding the value-added industries we can ramp up now. So, what does climbing the value chain look like in practice? Let’s take a look, **one step at a time**.

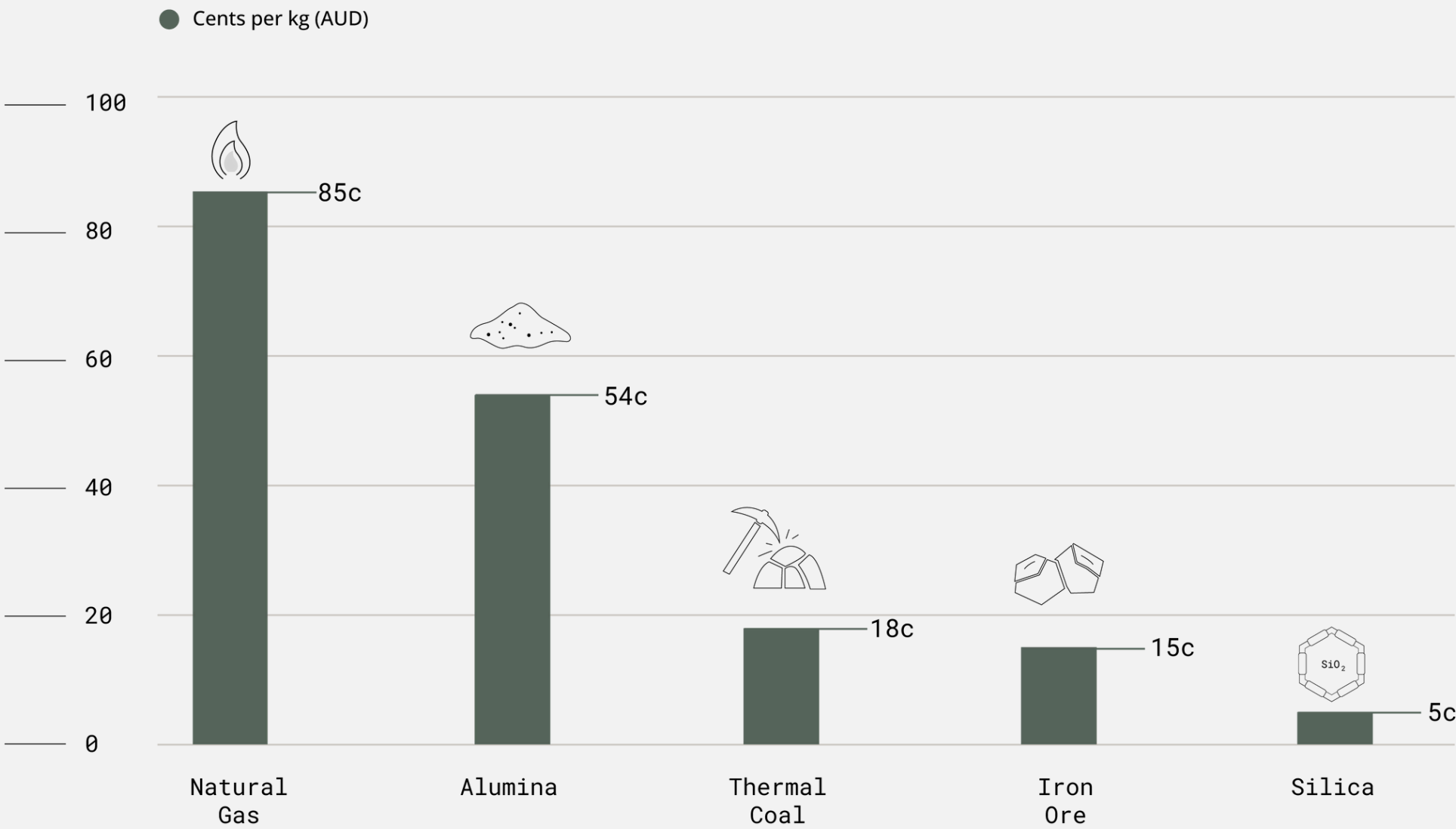


Fig.03 - The Cost Per Kilo of Australian Goods Exported



Step One: Build the Foundations Now

We start by taking the quick wins that let us turn our abundant resources into higher-value products. Rather than just exporting raw materials, start turning them into high-value products here at home. These changes are **immediately achievable** and **deliverable today**—and they form the backbone of a stronger, more resilient economy. For example ▼

✓ Metals Refining and Wrought Products

Instead of shipping iron ore and bauxite (aluminium ore) overseas, we refine them into niche high-value materials here at home first. Refined materials fetch higher prices and serve as the basis for advanced industries like aerospace, medical devices, and defence technologies. For example, where iron ore is worth 18c/kg, rebar (construction steel, the cheapest stuff) in high volume is 75c/kg. We don't want to make that – the value density is too low to justify how far we have to ship it to sell. Let's make high value niche products instead, like exotic steels for making tools, called maraging steels. These are worth \$50/kg or more.¹⁵



Fig.04 - Climbing the Value Chain through innovation: Aluminium

✔ Polycrystalline Silicon for Export

Australia has **some of the best silica reserves in the world**—yet we sell it for just **5c/kg**¹⁶. With minimal processing, we could transform it into **polycrystalline silicon**¹⁷, a key ingredient for solar cells and semiconductors, worth **\$25/kg or more**.



Fig.05 - Climbing the Value Chain through innovation: Silica

✔ Other countries are building entire industries on materials we sell for pennies.

It's time we did the same. Advanced Manufacturing Hubs - Build compact, efficient hubs for manufacturing precision-engineered goods like industrial equipment, robotics, and high-value infrastructure components. These hubs bring skilled jobs and global competitiveness. Where our alumina (aluminium rust) is worth 54c/kg, refining it into aluminium makes it worth \$3.56/kg, and if we make those into useful components for vehicles or industry then they are typically worth \$50-\$80/kg or more overseas.¹⁸ (See Figure 4)

We've had our confidence hurt many times when thinking about manufacturing, but new advanced manufacturing technology, which is accessible to us, lets us achieve this with a high degree of efficiency. For those worried about how we compete with low labour cost countries, this is the right answer. Today's **advanced manufacturing** rewards **low material costs** over **cheap labour**. This is Australia's competitive edge—if we choose to use it.

This is one way to start making stuff here, quickly and affordably.

✔ The impact of these changes goes beyond economics.

They mean **thousands of high-paying jobs**, a **stronger industrial base**, and an **economy that isn't just riding the global tide—but shaping it**. They also address our distance from markets, by letting us focus on what we can do well. These aren't distant possibilities; they are **immediate opportunities**. Australia can stop being just **an exporter of raw materials** and **start leading the industries of the future**—but only if we choose to **act now**.



Step Two: Climb the Value Chain

The next step is clear: turn raw potential into global dominance. With the right foundation in place, we can target industries that multiply value, combining energy, materials, and expertise to drive Australia's future wealth. For example ▼

✓ Electronics-Grade Silicon and Semiconductors

This industry will take more work to set up than the last one, But the leap from **polycrystalline silicon to electronics-grade silicon** isn't just an upgrade—it's a **10x value increase, from \$25/kg to \$250+/kg.**¹⁹ This requires **high-purity manufacturing facilities**, but the payoff is undeniable: semiconductors are **the backbone of the modern economy**. If Australia is serious about **owning the industries of the future**, this is where we must invest.

✓ AI and Data Centres

Build state-of-the-art high efficiency data infrastructure to support AI operations, quantum computing, and advanced analytics. By locating these where we have low cost energy resources, low cost land and expertise, Australia can become a hub for high-tech outputs like AI models and digital services. It's surprising how well this industry suits us, when you look carefully at the numbers. In the right hands, a good use for our low-cost energy. By investing in **AI training hubs, quantum computing infrastructure, and digital innovation centres**, we can transform **Australia into a global leader in next-generation technology**—instead of watching other nations seize the opportunity.

✓ High-Performance Materials

Expand into advanced alloys, composites, and specialty alloys. **Advanced alloys and composites drive the world's most sophisticated industries—defence, aerospace, and high-performance manufacturing. With some of the best raw material access on Earth**, Australia should be a **global leader in specialty alloys**,²⁰ not just a supplier of basic resources. As a country that will always have good access to low-cost materials and energy, this is a natural fit for us, as long as we maintain high value density. If we were to specialise in an aluminium alloy for metal 3D printing for example, the input cost (material and energy) would be about \$5/kg, and the material could sell for \$25/kg or more.²¹ (See Figure 4).



Step Three: Take our position as a Global Leader

This is where Australia stops **following** and **starts leading**. We don't just export materials—we define industries. We build the technologies **that power the world**. For example ▼

This is where Australia stops following and starts leading. We don't just export materials—we define industries. We build the technologies that power the world. For example:

① Silicon to Semiconductors

Transition from producing high purity silicon logs to manufacturing complete semiconductors. The world runs on semiconductors—and Australia is barely in the game. Today, we pay \$10,000/kg or more for imported chips.²² That's not just a cost—it's a missed opportunity. By shifting from silicon refining to full-scale semiconductor manufacturing, we can capture one of the most lucrative markets on Earth.

② Aerospace and Advanced Vehicles

Use advanced alloys and expertise to create high-tech aerospace components, drones, underwater vehicles, and space exploration systems. The future of mobility is in **the air, the sea, and space**. From **drones and underwater vehicles to spacecraft**, Australia has the **expertise and materials** to lead.

The key? **High-tech structural components**—the **lightweight, ultra-strong “bodies”** that protect sensitive systems in extreme environments. These components already fetch **\$250/kg or more**²³—and global demand is soaring. This is an example of a valuable niche sector that we could send our advanced manufacturers after.

③ Exportable Infrastructure Solutions

Develop and export next-generation construction materials and modular infrastructure systems that transform global urban development. This could be clever flat-packed kits for simplifying the construction of high rise buildings, or top quality fixtures and fittings, or even city infrastructure for transportation, communication, power, or water. This might be an industry with a lot of volume, which could still hold up export value densities of \$20-\$30/kg.

Among these examples, we expect commodity prices to fluctuate and markets to move, but the **opportunities to Australia won't fade easily.**

This is Australia's moment. These industries will define the future—and we must own them. Every sector—individuals, businesses, institutions, and government—has a role to play in making this vision real. So – among all these ideas, what can you do to make a difference in our economic growth? Cultural change begins with individuals, businesses, institutions, and governments working together to embrace ambition and back bold ideas.

What can we do?

Individuals: Start conversations with your peers, invest in local innovation, and support Australian-made products that represent the future. Buy Australian-made innovations, invest in local talent, and demand bold action from decision-makers. If you can't find a locally made product, ask “*Why don't we make that here?*” **Not every risk will succeed—but standing still guarantees failure.**

Businesses: Innovate or be left behind. Invest in new technologies, and make Australia's workforce a global advantage. Evaluate innovative ways to improve, collaborate with research organisations, and champion local talent. The way Australians work together is a competitive advantage.

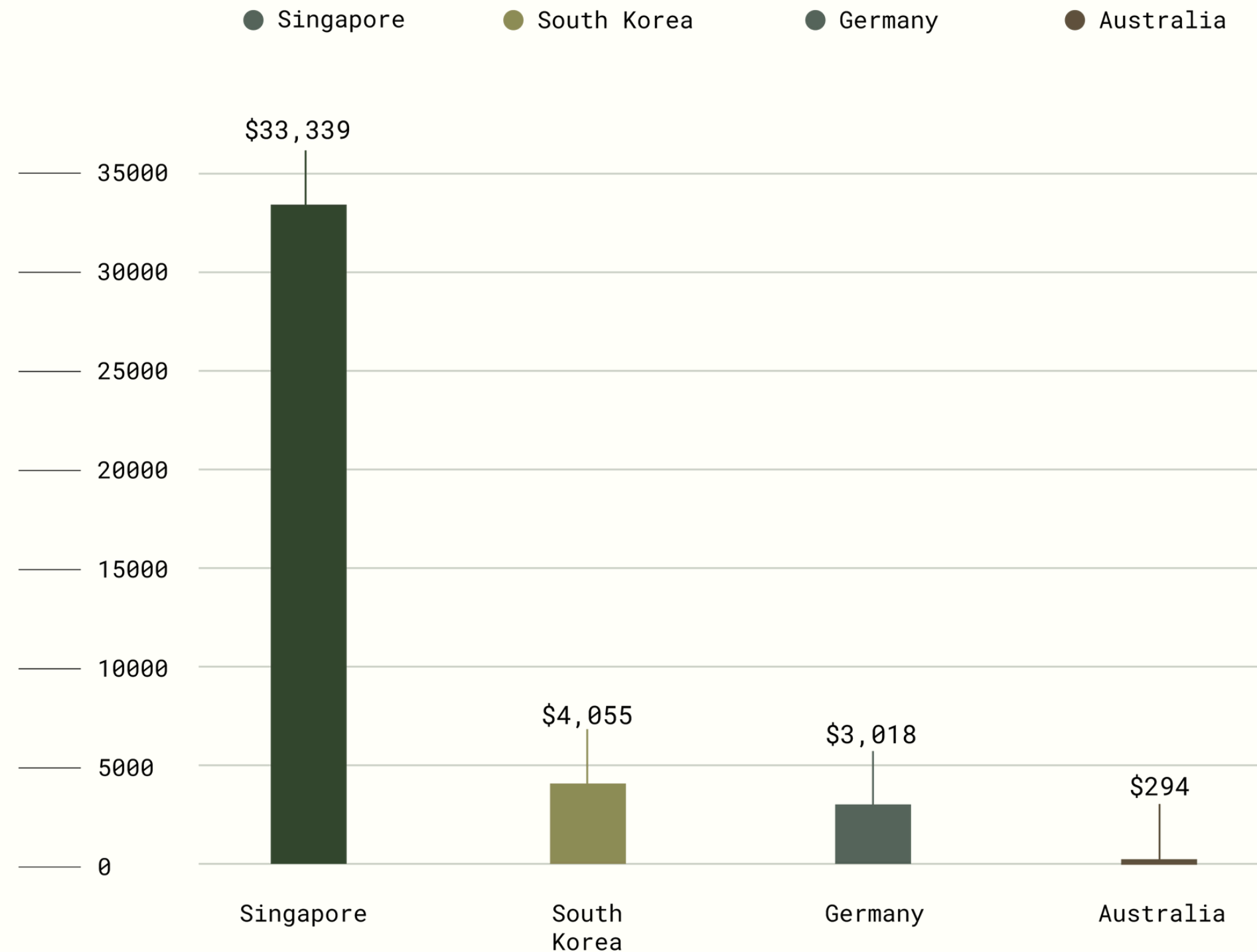
Institutions: Use Australia's wealth to seed innovation by investing in venture capital, startups, and sovereign innovation funds. Align investments with the nation's long-term vision.

Government: Lead boldly. Set clear targets, back industrial transformation, and fund R&D and innovation hubs. The next global giants should be Australian. Create measurable pathways for businesses to scale, champion domestic procurement, and establish innovation hubs that transform Australia's capabilities. Back the essential building blocks that deliver the outcomes described – industrial transformation, research and development, focusing more on smaller, more innovative organisations.

The idea is simple: we can make higher-value stuff here, if we must back ourselves. Every step we take up the value chain secures Australia's future prosperity. This isn't just about creating wealth—it's about shaping our identity as a nation that leads in innovation, resilience, and opportunity. Together, we can rewrite the story of Australia, moving from a resource economy to a leader in the industries of the future.

No more excuses. No more wasted opportunities. Australia has **the talent, the resources, and the ambition** to lead the world. The only question left is—**will we choose to?**

The numbers don't lie—Australia is falling behind. Decades of underinvestment in research and development (R&D) have left us trailing global leaders. For a country with abundant resources and world-class talent, we're punching far below our weight—and the consequences are already hitting our economy.



In 2023, Australia exported \$7.77 billion worth of high-tech goods— an embarrassingly low \$294 per capita. Compare this to Singapore at \$33,339 per capita, South Korea at \$4,055, or Germany at \$3,018 (See Figure 6).

These nations have leveraged deliberate, strategic investments in R&D to build high-value industries that dominate global markets. Their success proves a simple truth: bold investment in innovation pays off.

Fig.06 - High-tech Goods Exports 2023 (\$AUD per capita)

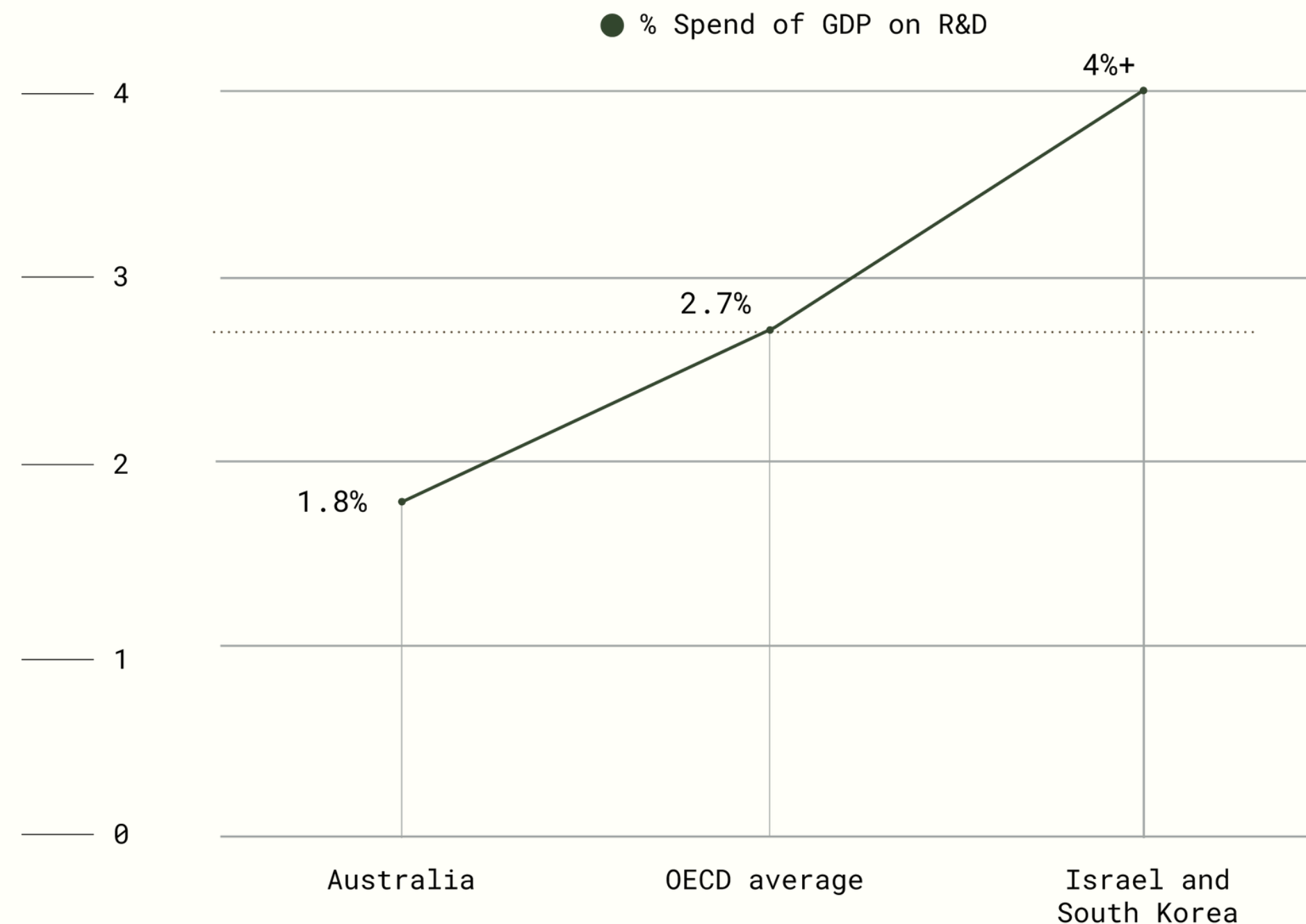


Fig.07 - % Spend of GDP on R&D

Australia, by contrast, spends just **1.8% of GDP on R&D**—well below the OECD average of 2.7% and far behind leaders like Israel and South Korea, which invest over 4%. (See Figure 7.)

This disparity directly impacts our ability to compete globally, leaving us reliant on exporting raw materials instead of value-added goods. Once you know what to look for, it's clear that these choices have consequences, and we're paying the price.

Success Stories

Countries with **fewer natural advantages have proven that strategic investment** in innovation can overcome significant challenges:

- **South Korea:** Once reliant on agriculture, South Korea became a global leader in semiconductors, robotics, and heavy manufacturing.²⁴ Companies like Samsung and Hyundai now drive its economy, generating high-value exports and global influence.
- **Singapore:** With no significant natural resources, Singapore's focus on R&D and tech innovation has transformed it into an economic powerhouse, exporting over \$33,000 per capita in high-tech goods.
- **Germany:** By combining R&D investment with precision manufacturing, Germany has built industries that lead in automotive, engineering, and green technologies.

These nations succeeded because they backed bold ideas with sustained support, prioritising long-term vision over short-term gains.

Missed Opportunities

By comparison, Australia's missed opportunities are not just stories of potential lost—they are warnings of what happens when big ideas lack the support they need. These own goals illustrate our cultural and systemic reluctance to invest in our future.

- **The National Broadband Network (NBN):** Envisioned as a game-changing infrastructure project, the NBN promised to position Australia as a global digital leader. Instead, political compromises and short-term cost-cutting watered it down, leaving us with slower and less competitive broadband than many peer nations.²⁵ The opportunity to drive a tech-based economy through connectivity was largely squandered.
- **Battery Manufacturing:** Australia sits on a goldmine of lithium and rare earths—but we let others profit from them. Instead of leading the battery revolution, we ship raw materials overseas and buy back the finished products at a premium. Instead of seizing the chance to lead in the global energy transition, we remain a supplier of low-value commodities, dependent on others to create high-tech products.
- **High-Speed Rail:** For over 40 years, Australia has debated high-speed rail without delivering.²⁶ Countries like France, Japan, and China have built extensive networks that drive regional economic growth, connect industries, and improve quality of life. Meanwhile, Australia remains stuck in neutral, with political indecision and insufficient funding holding back progress.

Excuses won't build Australia's future. Some claim we're **too small, too isolated, or too resource-dependent** to compete globally. They're wrong. **The evidence tells a different story.**

Common Myths

① Myth: "Australia is too isolated to succeed."

Reality: Isolation is an excuse. South Korea imports its energy and has almost no natural resources—yet it's a global tech powerhouse.²⁷ Singapore has little land, water and resources—yet it leads the world in exports per capita.²⁸ Distance isn't the problem. Complacency is.

② Myth: "We don't have the population to sustain high-value industries."

Reality: Population size is irrelevant. Strategy matters. Israel (9.2 million people) dominates cybersecurity, defence, and medical innovation. Singapore (5.6 million) exports \$33,000 per capita in high-tech goods. They didn't wait for size—they built success through smart investment (See Figure 1). It's true that Australia has a small domestic market, but countries like Singapore have relied on their ability to collaborate across government and industry to overcome their smaller local market potential and seize on significant export opportunities instead.

③ Myth: "Australia's reliance on resource exports is an asset, not a weakness."

Reality: It's actually both. **Resource wealth is only an asset if we use it wisely. Norway turned oil profits into a diversified, sustainable economy.**²⁹ **Australia, meanwhile, gambles on commodity booms and busts.** Over-reliance on resources exports leaves us vulnerable to market fluctuations and limits potential for high-value industries.

The evidence is overwhelming: Australia is wasting its potential.

While others **invest, innovate, and lead**, we hesitate, delay, and settle. **We have the resources. We have the talent. We have the ideas.** What we **don't have**—yet—is the will to act. Sustained underinvestment in innovation and tech has left Australia unable to capitalise on its natural and human resources. Australia has stagnated, missing opportunities to build industries that add value and create resilience, leading to our current woes.

This isn't just about economics —it's about who we are.

We pride ourselves on being problem-solvers and innovators, yet **the numbers say otherwise**. If we want to lead, we must **stop making excuses and start making decisions**. To change course, we must learn from global successes and confront the cultural and systemic barriers that hold us back.

The challenge is real—but so is the opportunity. Australia has the **talent, the resources, and the ingenuity** to lead the world.

The only question is: are ready to believe in ourselves again?

Australia is a ship adrift.

The winds of change are picking up, and if we don't set a bold course, we risk being left behind by nations brave enough shape the future. **Will we? Or will we be left behind?**

I'm writing this blueprint not because I have all the answers, but because I believe we must ask better questions. For years, I've watched brilliant minds leave Australia, not because they wanted to, but because this country made them feel like they had no choice. My wife and I, both work in STEM, and we've spent years **fighting for bold ideas** in a system that too often **fears change more than failure**. And now, I ask myself: **would I recommend this path to my own kids?** The truth is, **I hesitate**. Because in Australia, **being an innovator is still an uphill battle. This isn't just a policy failure—it's a mindset problem.** We've let "good enough" become our ceiling. Instead of **backing bold ideas, we water them down. Instead of taking risks, we rationalize inaction.**

What if we didn't? Imagine a culture where ambition was encouraged, not dismissed. A country where we built industries that shape the future, instead of watching from the sidelines. **A country that makes high-value stuff.**

This isn't just about improving the economy; it's about rewriting the story we tell ourselves about who we are. We need a culture that values effort, celebrates ambition, and refuses to settle for mediocrity.

Writing this blueprint feels like stepping out of line. But when you see a mate in trouble, you step up and help—because that's what Australians do. I can't ignore the problems I see, and I feel a duty to act. We often criticise tall poppy syndrome, but I do see it as an issue. Mateship, a fair go, and humility are values I deeply admire in our culture. The problem isn't **success—it's how we react to it**. Supporting each other **doesn't mean tearing anyone down**.

The truth is, **we win together—or not at all**. I want to challenge how we think about success and risk—not just in boardrooms but around dining tables, at “smoko,” and in worksites. When we innovate, we create higher-paying jobs, greater security, and opportunities for future generations to thrive in Australia.

If this blueprint achieves anything, I hope it reminds us of one truth: Australia is capable of greatness—**but we have to fight for it**.

The only question is: *will we?*

The blueprint isn't for someone else—**it's for you, me, all of us.**

This isn't someone else's job—it's yours. It's mine. It's ours. If we want a stronger, smarter, more ambitious Australia, the work starts right now.

Cultural shifts don't happen by accident. They happen when individuals decide to think differently, act boldly, and demand more.

- **Reclaim your pride in what we can do.** Take pride in what we create. When you see an Australian innovation, back it. Celebrate it. Share it. Ask: How do we make this succeed?
- **This costs nothing—but it changes everything.**
- **Build the culture you want to see.** We can't expect bold leadership if we aren't willing to lead ourselves. Teach our leaders what we need from them by showing it in action. Take a risk on a bold idea, it doesn't have to be large. Support Australian talent because it's a smart investment in our collective future.

-
- **Ask better questions.** Change the conversation. Over coffee, at smoko, around the dinner table—ask the questions no one else is asking: What does real success look like for Australia? How do we get there? Why aren't we acting? Challenge “good enough.” Demand better.
 - **Invest in our future.** Shift your investments—whether it's your time, money or attention—toward building industries and communities that make Australia stronger. Look for opportunities to support innovation and big ideas, whether through venture funds, your super choices, mentoring, or simply choosing to buy from companies pushing the envelope.
 - **Back your own ideas.** Find those opportunities where you see high value density in a product – and ask, “*why aren't we making that here?*”
 - **Collaborate without fear.** Find someone outside your organisation, team, or immediate circle, and do something interesting and extraordinary together. Be proud of what you achieve as a team, even if it doesn't work out like you wanted. Collaboration is a force multiplier.
 - **Share this blueprint.** These ideas only work if people hear about them. **#MakeStuffHere**

If these ideas resonate with you, you might start noticing some changes. You may feel a new sense of unease about the status quo or catch yourself questioning old habits and ways of thinking. You might find yourself speaking up in moments where bold ideas need defending or supporting others who dare to challenge convention.

These are not burdens—they're the markers of a cultural shift, the signs of a nation ready to back itself. Embrace them. The future isn't something to fear—it's something we build, together.

Let's make it here!

A handwritten signature in white ink that reads "Steven Camilleri". The script is fluid and cursive, with the first letters of "Steven" and "Camilleri" being capitalized and prominent.

Steven Camilleri / CTO of SPEE3D

References

- 1) Smart Company, Engel Schmidl, July 26, 2012. Available at: <https://www.smartcompany.com.au/finance/put-your-guns-down-queensland-weapons-manufacturer-metal-storm-collapses-into-administration/> (Accessed 5 February 2025)
- 2) PV Magazine – Industry & Suppliers ‘Revisiting the history books’, June 2016, Available at: <https://www2.pv.unsw.edu.au/martin-green-key-pv-publications/%5b7%5dRevisiting-the-history-books.pdf> (Accessed 5 February 2025)
- 3) Australian Financial Review, ‘Australian manufacturing poster child Tritium fails days after Qenos’, Nick Bonyhady and Tom Rabe, April 19, 2024. Accessible at: <https://www.afr.com/companies/manufacturing/australian-manufacturing-poster-child-tritium-collapses-20240419-p5fl6o> (Accessed 5 February, 2025)
- 4) The Driven ‘The Long gone, but not forgotten, Electric VE Commodore’ Jake Johns, November 1, 2021. Accessible at: <https://thedriven.io/2021/11/01/the-long-gone-but-not-forgotten-electric-ve-commodore/>
- 5) Smart Company, Engel Schmidl, July 26, 2012. Available at: <https://www.smartcompany.com.au/finance/put-your-guns-down-queensland-weapons-manufacturer-metal-storm-collapses-into-administration/> (Accessed 5 February 2025)
- 6) PV Magazine – Industry & Suppliers ‘Revisiting the history books’, June 2016, Available at: <https://www2.pv.unsw.edu.au/martin-green-key-pv-publications/%5b7%5dRevisiting-the-history-books.pdf> (Accessed 5 February 2025)
- 7) Uniseed.com, Portfolio Accessible at: Hydrexia | Uniseed, <https://uniseed.com/project/hydrexia/>
- 8) Australian Financial Review, ‘Australian manufacturing poster child Tritium fails days after Qenos’, Nick Bonyhady and Tom Rabe, April 19, 2024. Accessible at: <https://www.afr.com/companies/manufacturing/australian-manufacturing-poster-child-tritium-collapses-20240419-p5fl6o> (Accessed 5 February, 2025)
- 9) The Driven ‘The Long gone, but not forgotten, Electric VE Commodore’ Jake Johns, November 1, 2021. Accessible at: <https://thedriven.io/2021/11/01/the-long-gone-but-not-forgotten-electric-ve-commodore> (Accessed 5 February 2025)
- 10) Australian Bureau of Statistics ‘Total Value of Dwellings’ September Quarter 2024, Accessible at: <https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/total-value-dwellings/latest-release> (Accessed 5 February, 2025)
- 11) Australian Bureau of Statistics ‘Wage Price Index, Australia’ September 2024. Accessible at: <https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/wage-price-index-australia/latest-release> (Accessed 5 February 2025)
- 12) Australian Bureau of Statistics ‘Price indexes and inflation’ Accessible at: <https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation> (Accessed 5 February 2025)
- 13) The Guardian ‘Renewables break record for share of Australia’s main energy supply December data reveals’ Lisa Cox, 30 January 2025. Accessible at: <https://www.theguardian.com/australia-news/2025/jan/30/renewables-break-record-for-share-of-australias-main-energy-supply-in-december-quarter-data-reveals>. (Accessed 6 February 2025)

- 14) Australian Energy Regulator News Release 'Wholesale energy prices fall in southern regions but rise in northern regions'. Accessible at: <https://www.aer.gov.au/news/articles/news-releases/wholesale-energy-prices-fall-southern-regions-rise-northern-regions>. (Accessed 6 February 2025)
- 15) Metal3DP 'Maraging Steel 300 Powder' Accessible at: <https://met3dp.com/product/maraging-steel-300-powder-20240201/>. (Accessed 5 February 2025)
- 16) OEC 'Silica sands and quartz sands in Australia' Accessible at: <https://oec.world/en/profile/bilateral-product/silica-sands-and-quartz-sands/reporter/aus> (Accessed 5 February 2025)
- 17) SMM 'Electronic-grade Polycrystalline Silicon Price, USD/kg'. Accessible at: <https://www.metal.com/Solar/202304130001> (Accessed 5 February 2025)
- 18) Australian Aluminium Council Ltd 'Australian Trade Statistics.' Accessible at: <https://aluminium.org.au/australian-industry/australian-trade-statistics/> (Accessed 5 February 2025)
- 19) Business Research Insights, 20 January 2025, 'Electronic Grade Silicon Market Report Overview'. Accessible at: <https://www.businessresearchinsights.com/market-reports/electronic-grade-silicon-market-102716> (Accessed 5 February 2025)
- 20) Working Papers Centre for International Development at Harvard University, 'Economic Complexity Report for Western Australia,' Ricardo Hausmann, Eric Protzer, Jorge Tapia, Ana Grisanti, CID Faculty, Working Paper No. 394, April 2021. Accessible at: <https://growthlab.hks.harvard.edu/files/growthlab/files/2021-04-cid-wp-394-wa-economic-complexity-report.pdf>
- 21) The Steel Printers.com, 'A guide to calculating the cost of 3D printed Parts'. Accessible at: <https://www.thesteelprinters.com/news/a-guide-to-calculating-the-cost-of-3d-printed-parts> (Accessed 6 February 2025)
- 22) Tom's Hardware.com 'TSMC's average wafer price jumped 22% in one year — nearly all semiconductor industry growth now comes from more expensive products, not higher production volume', Anton Shilov, January 23, 2024. Accessible at: <https://www.tomshardware.com/tech-industry/newer-chips-are-rapidly-becoming-far-more-expensive-tsmcs-average-wafer-price-jumped-22-in-one-year-and-nearly-all-semiconductor-industry-growth-now-comes-from-more-expensive-products>
- 23) Straits Research 'Unmanned Composites Market Size, Share and Trends Analysis Report'. Accessible at: <https://straitsresearch.com/report/unmanned-composites-market> (Accessed 6 February 2025)
- 24) Federal Reserve Bank of St. Louis, 'How did South Korea's Economy Develop So Quickly?', Ana Maria Santacreu , Heting Zhu, March 20, 2018. Accessible at: <https://www.stlouisfed.org/on-the-economy/2018/march/how-south-korea-economy-develop-quickly>
- 25) Wikipedia 'National Broadband Network'. Accessible at: https://en.wikipedia.org/wiki/National_Broadband_Network (Accessed 6 February 2025)

- 26) The Conversation.com, 'High-speed rail plans may finally end Australia's 40-year wait to get on board', Philip Laird, September 16, 2024. Accessible at: <https://theconversation.com/high-speed-rail-plans-may-finally-end-australias-40-year-wait-to-get-on-board-238232>
- 27) Wikipedia, 'Economy of South Korea'. Accessible at: https://en.wikipedia.org/wiki/Economy_of_South_Korea (Accessed 5 February 2025)
- 28) NationMaster.com, 'Economy > Exports per capita: Countries compared'. Accessible at: <https://www.nationmaster.com/country-info/stats/Economy/Exports-per-capita> (Accessed 5 February 2025)
- 29) According to expert 'Lessons from Norway's success. How Norway became a rich country.' December 8, 2024. Accessible at: <https://accordingtoexpert.substack.com/p/lessons-from-norways-success>. (Accessed 3 February 2025)