

DISCUSSION PAPER

Toby Phillips



CREATE. CONNECT. CONVINCE

cpd.org.au

FEBRUARY 2021

Published by the Centre for Policy Development© Centre for Policy Development 2021
This work is licensed under CC BY 4.0. To view this license, visit <a href="mailto:creativecommons.org/licenses/by/4.0/">creativecommons.org/licenses/by/4.0/</a>

Cover image: Broken Hill solar plant, Google Earth © 2021 Maxar Technologies

Cite this paper as: Toby Phillips (2021) *Chasing the pack: Australia's prospects on green trade and climate diplomacy,* CPD discussion paper, Centre for Policy Development

#### **AUTHOR**

**Toby Phillips** is a program director at the Centre for Policy Development. He is also Executive Director of the Oxford Covid-19 Government Response Tracker at Oxford University.

### **ABOUT CPD**

The Centre for Policy Development (CPD) is an independent, values-driven, and evidence-based policy institute. Our motivation is an Australia that embraces the long term now. CPD's policy development is geared towards an Australia that is equitable, aspirational, and truly prosperous — and enlivened by the challenge of shaping a better future. CPD's core model is three-fold: we create viable ideas from rigorous, cross-disciplinary research at home and abroad. We connect experts and stakeholders to develop these ideas into practical policy proposals. We then work to convince government, businesses, and communities to implement these proposals. CPD has offices in Sydney and Melbourne and a network of experts across Australia. We are not for profit: donations to our Research Fund are tax deductible. More information about CPD is available at cpd.org.au

This paper was written as part of the **Climate and Recovery Initiative** (CRI), which was established in May 2020 to drive a stronger alignment between post-covid economic recovery and climate priorities. The Initiative is co-ordinated by CPD and ClimateWorks Australia, with a steering group that includes Australian Industry Group (AIG), the Australian Council of Trade Unions (ACTU), and Pollination. It brings together prominent leaders from government, business and civil society to identify the best ideas for aligning Australia's economic recovery with a transition towards a net zero emissions economy, and to get them into the right hands.

### **ACKOWLEDGEMENTS**

Thanks to Sam Hurley, Travers McLeod, Tennant Reed, Geoff Shuetrim, Peter Mares, Ralph Evans, James Boyle, Caitlin McCaffrie and the CPD Research Committee for comments and critical feedback on earlier drafts of this paper.

CPD would like to thank donors whose support makes the work of the CRI possible, including The Myer Foundation and The Reichstein Foundation. We would also like to thank ClimateWorks Australia, Ai Group, the ACTU and Pollination for their ongoing contribution to the CRI process. This research is part of CPD's Sustainable Economy Program, which strives to identify ideas and policies that can help build a fair, sustainable and prosperous Australia. This work is possible because of contributions from CPD's program and organisational donors, who we would like to thank for their generous support. A list of our supporters is available on CPD's website.



# **CONTENTS**

| 1. EXECUTIVE SUMMARY                                    |    |
|---|----|
|   |    |
| 2. AUSTRALIA'S CURRENT TRADE POSITION                   |    |
| 3. HOW CLIMATE POLICY IS AFFECTING TRADE AND DIPLOMACY  |    |
| 3.1 The rise of climate diplomacy                       | ∠  |
| 3.2 Increase in trade of green goods                    | θ  |
| 3.3 Reduction of trade in carbon-intensive goods        | 3  |
| 3.4 Global capital seeking green finance and investment | 10 |
| 4. MAJOR GLOBAL TRENDS                                  | 12 |
| 4.1 Covid-19 will redraw the maps                       | 12 |
| 4.2 The Biden administration                            | 14 |
| 4.3 Current trade negotiations                          | 15 |
| 5. STRENGTHENING AUSTRALIA'S LONG-TERM POSITION         | 20 |
| APPENDIX  | 22 |

### 1. EXECUTIVE SUMMARY

There is a surge of international action around green trade, climate diplomacy, and low-carbon investment. New industries based around renewable energy and green tech are dominating other countries' long-term trade plans, and global green finance is accelerating as asset managers and investors claim a slice of this economic activity. There are huge opportunities on offer, but without a recalibration, there's every chance Australia ends up with a weaker trade position, stuck behind the pack in the global economy.

National discussions about trade and decarbonisation often focus on the agency of Australians: what can our people, businesses and governments do. But in some sense, many of these global forces are out of Australia's control; exogenous developments that must be factored in to strategic decision-making.

China, Japan, the UK, the EU, South Korea, and the incoming Biden administration in the US have all made significant commitments to net-zero emissions by 2050 (or 2060 for China), and are following through with big bets to transform their economies. This could easily turn into a race. Not an arms race, but a technological and industrial race to claim this new ground. If Australia can establish itself as a leader in just a small fraction of these new global markets, this economic growth engine could propel the country for the coming decades.

Australia looks to be in a good position on paper: strong natural endowments for renewable energy, the beginnings of a promising R&D sector, and proximity to a large regional market without many green competitors. But Australia's current industrial strategy and climate diplomacy leaves it unable to ride this wave.

Australia's global competitiveness is largely tied to commodity exports like coal or iron ore. These industries are at risk of decreased demand as most of Australia's top export destinations aim for net zero, and these industries have only limited overlap with the skills and technologies that Australia needs to establish new industries. As demand moves to less carbon-intensive goods, Australia may be left saddled with stranded investments and unwanted industries.

On the diplomatic side, we cannot assume that trade negotiations with the likes of the European Union will solve this problem for us: grasping the opportunity for Australia will require Australian leadership. Meanwhile, current domestic climate policy is slowly eroding Australia's credibility, just as climate is being elevated to top-level diplomatic fora.

Australia's state governments and business leaders are stepping into the breach, but without action at the federal level to align Australia's trade and diplomatic policy, a large chunk of the opportunity will be left on the table.

This paper begins with a brief sketch of Australia's current trade position. The next part considers broad trends in green trade, climate diplomacy, and low-carbon investment. The discussion is rounded out with global developments that are independent of the climate agenda – Covid-19, the incoming Biden administration, and current free-trade negotiations – before concluding with consideration of Australia's long-term economic position.

#### Key points for Australia

- by making credible commitments under the Paris Agreement framework (for example, by
  increasing domestic targets and investment), Australia could put itself firmly inside the diplomatic
  club. Without this, Australia remains on the outer with less ability to shape new standards, norms,
  and key partnerships.
- stronger commitments from the federal government are relatively low-cost. All states and territories have committed to net-zero emissions by 2050. There will be significant economic transformation across the country, regardless of whether or not it is led from Canberra.
- many of Australia's major trading partners are actively attempting to reduce their imports of carbon-intensive goods, and increase trade in green goods. Most of Australia's main trade partners (83% by export value) have made commitments to reach net zero. Australia's carbon-intensive export profile is very exposed to this trend.
- in the longer term, removing fossil fuel subsidies and shifting Australia's domestic energy mix towards renewables will help keep Australian exporters free from sanctions by countries looking to limit carbon leakage.
- there are many global coalitions that Australian non-state actors (such as cities, industry groups, and businesses) can engage with in the lead-up to COP26, even in the absence of direct positive leadership from the federal government.
- many countries are looking to preferentially favour trade in green goods. There is a clear opportunity for Australia to build new export industries around this.
- Covid-19 will likely lead to a sustained multi-year drop in global demand for some key industries (such as oil and tourism), but it will also bring entirely new opportunities as global value chains are restructured.
- global value chains are breaking apart and reforming in shorter, more local versions. Australia could become the Germany of Asia, specialising in technical and high-complexity niche manufacturing.
- Australia could strengthen its position as a destination for global green investment, by establishing
  national standards, market institutions, and programs to enhance the credit quality of green bonds.
  Beyond modest agency funding, these federal policies would have no budget impact.
- current trade negotiations are unlikely to catalyse major changes to Australia's domestic climate policy. Despite the strong climate ambitions of the EU, and to a lesser extent the UK, all indications suggest a compromise will be reached.

### 2. AUSTRALIA'S CURRENT TRADE POSITION

Australia holds an unusual position in global trade: it is one of the richest countries in the world, but geographically isolated from Europe and North America; an OECD country dependent largely on natural resources. Australia exports goods equivalent to approximately 20% of GDP, and then imports about the same. Lower than the OECD average of imports/exports around 30% of GDP.<sup>1</sup>

Over recent decades, Australia has become more and more integrated with its regional neighbours in Asia relative to other regions. Indeed, not only do China and Japan rate as Australia's biggest bilateral trade partners, but once ratified, the Regional Comprehensive Economic Partnership agreement (RCEP more below in section 4.3) will cover trade volumes several times larger than the EU27 countries (see Figure 1).

Figure 1: Australia's top 20 trade partners, and five regional groupings with trade agreements

Note: acronyms stand for: Regional Comprehensive Economic Partnership, Comprehensive and Progressive Agreement for Trans-Pacific Partnership, Association of Southeast Asian Nations, European Union (27 countries, now minus UK), and the Gulf Cooperation Council. Source: CPD analysis of data from UN Trade Statistics 2020 (for goods trade) and OECD 2019 (for services trade).

Despite a strong and (relatively) vibrant domestic economy, Australia's *global* competitiveness relies on a narrow set of industries. Australia's trade profile is less like a typical OECD country, and is closer to a "commodity-dependent developing country"; albeit a very well-off one.<sup>2</sup> Australia likes to think of its place in the world as a modern, knowledge economy – but in the global marketplace, Australia's comparative advantage is in primary industries not knowledge industries.<sup>3</sup> Figure 2 shows a matrix of the goods and services that Australia trades with its 20 largest bilateral trade partners.

<sup>&</sup>lt;sup>3</sup> Hausmann et al. (2020) <u>Atlas of Economic Complexity</u> from the Harvard Growth Lab; and Phillips (2020) <u>To get Australia out</u> of a hole, the Morrison government must look beyond the dirt in The New Daily



<sup>&</sup>lt;sup>1</sup> OECD (2020) Trade in goods and services

<sup>&</sup>lt;sup>2</sup> UN Conference on Trade and Development (2019) <u>State of Commodity Dependence 2019</u>

Figure 2: Australia's imports and exports with the 20 top bilateral trade partners

|                          | 1                             |                               | sen                   | vice                           | s                                    | 1  |                                   |   |                      |                    | g     | 000    | ls    |                 |                           |                   |              |         |                           | (b)                    |    |                          | 1                             | 5                             | erv                   | ices                           | i                                    | 1  |                                   |  |                    | g                                     | 000   | ls     |                 |                           |                   |             |       |                       | (a)                    |
|--------------------------|-------------------------------|-------------------------------|-----------------------|--------------------------------|--------------------------------------|--|-----------------------------------|---|----------------------|--------------------|-------|--------|-------|-----------------|---------------------------|-------------------|--------------|---------|---------------------------|------------------------|----|--------------------------|-------------------------------|-------------------------------|-----------------------|--------------------------------|--------------------------------------|--|-----------------------------------|--|--------------------|---------------------------------------|-------|--------|-----------------|---------------------------|-------------------|-------------|-------|-----------------------|------------------------|
| Other goods and services | Government goods and services | Intellectual property charges | Professional services | Digital, ICT, or entertainment | Financial services (incl. insurance) | Travel and transport (incl. for education) | Technical equipment and machinery | Vehicles and transport (incl. ships, plane) | Chemicals and pharma | Manufactured goods |       |        |       | Precious metals | Metals and metal articles | Minerals and ores | Fossil fuels |         |                           | (b) Imports (US\$ mil) |    | Other goods and services | Government goods and services | Intellectual property charges | Professional services | Digital, ICT, or entertainment | Financial services (incl. insurance) | Travel and transport (incl. for education) | Technical equipment and machinery | Chemicals and pharma  Vehicles and transport (incl. ships plane) | Manufactured goods | Prepared food, beverages, and tobacco |       |        | Precious metals | Metals and metal articles | Minerals and ores | Topic field |       |                       | (a) Exports (US\$ mil) |
| 2,/54                    | 763                           | 2,784                         | 7,906                 | 3,553                          | 2,544                                | 37,025                                     | 57,416                            | 28,061                                      | 15,150               | 20,808             | 8,454 | 11,693 | 4,337 | 6,171           | 7,865                     | 1,224             | 22.386       |         |                           |                        |    | 41,792                   | 668                           | 200                           | 6,110                 | 3,261                          | 3,607                                | 38,582                                     | 9 789                             | 3,056  | 1,342              | 5,267                                 | 6,832 | 19,852 | 17,270          | 8,715                     | 74,703            |             |       |                       |                        |
| 532                      | 77                            | ω                             | 294                   | 56                             | 76                                   | 1,812                                      | 24,581                            | 2,072                                       | 2,336                | 14,209             | 626   | 4,661  | 437   | 1777            | 4,305                     | 351               | 2.674        | 59,277  | China                     |                        |    | 14,374                   | 64                            | 12                            | 114                   | 160                            | 524                                  | 12,576                                     | 721                               | 1,703  | 71                 | 2,071                                 | 4,146 | 5,690  | 2,082           | 1,659                     | 60,210            | 116,445     | Chin  | a                     |                        |
| 106                      | 37                            | 86                            | 101                   | 28                             | 54                                   | 2,955                                      | 2,637                             | 7,232                                       | 334                  | 156                | 135   | 746    | 32    | 548             | 281                       | 120               | 3.168        | 18,757  | Japan                     |                        |    | 14,997                   | 29                            | 13                            | 137                   | 66                             | 71                                   | 1,566                                      | 344                               | 282  | 30                 | 228                                   | 440   | 3,357  | 33              | 913                       | 6,759             | 41,336      | Japa  | n                     |                        |
| 396                      | 15                            | 0                             | 18                    | 6                              | 38                                   | 423  | 1,178                             | 2,273                                       | 205                  | 111                | 122   | 421    | 25    | 6               | 382                       | 9                 | 3.624        | 9,251   | Sth Korea                 |                        |    | 3,481                    | 14                            | 1                             | 17                    | 24                             | 24                                   | 1,473                                      | 145                               | 203  | 16                 | 129                                   | 97    | 1,769  | 90              | 917                       | 5,355             | 19,017      | Sth I | Korea                 |                        |
| 9                        | 17                            | 85                            | 1,112                 | 248                            | 161                                  | 2,473                                      | 793                               | 49  | 502                  | 107                | 648   | 118    | 19    | 27              | 108                       | 5                 | 5.036        | 11,604  | Singapore                 |                        |    | 3,145                    | 180                           | 0                             | 913                   | 380                            | 189                                  | 1,732                                      | 708                               | 125  | 69                 | 238                                   | 44    | 639    | 1,424           | 105                       | 178               | 11,767      | Sing  | apore                 |                        |
| 32                       | 15                            | 77                            | 788                   | 162                            | 259                                  | 3,393                                      | 517                               | 101   | 263                  | 171                | 1,866 | 572    | 1,019 | 410             | 133                       | 10                | 468          | 10,253  | New Zealand               | RCEP                   |    | 351                      | 4                             | 0                             | 441                   | 298                            | 574                                  | 2,429                                      | 2044                              | 1,098  | 606                | 755                                   | 542   | 421    | 134             | 384                       | 37                |             |       | Zealand               | RCEP                   |
| 24                       | 54                            | 1                             | 431                   | 452                            | 24                                   | 966  | 434                               | 319   | 540                  | 717                | 84    | 202    | 207   | 327             | 219                       | 25                | 264          | 5,291   | India                     | ٠                      |    | 779                      | 19                            | 29                            | 28                    | 138                            | 34                                   | 5,031                                      | 140                               | 179  | 9                  | 9                                     | 238   | 129    | 210             | 313                       | 413               | 14,981      | India | <u>C</u>              | ·                      |
| 59                       | 17                            | 2                             | 89                    | 26                             | 16                                   | 731  | 1,945                             | 55  | 253                  | 257                | 227   | 735    | 254   | 40              | 388                       | 39                | 3.548        | 8,681   | Malaysia                  |                        |    | 1,700                    | 19                            | 0                             | 145                   | 32                             | 72                                   | 1,559                                      | 183                               | 109  | 33                 | 133                                   | 155   | 598    | 15              | 1,073                     | 319               | 8,013       | Mala  | iysia                 |                        |
| 251                      | 15                            | -                             | 26                    | ω                              | 6                                    | 1,693                                      | 1,687                             | 5,157                                       | 346                  | 284                | 732   | 623    | 187   | 951             | 235                       | 72                | 142          | 12,411  | Thailand                  |                        |    | 519                      | 00                            | 00                            | 10                    | 24                             | 32                                   | 743  | 177                               | 184  | 13                 | 74                                    | 107   | 495    | 143             | 636                       | 34                | 3,894       | Thai  | and                   |                        |
| 8                        | 101                           | 1                             | 22                    | 00                             | 1                                    | 3,082                                      | 373                               | 49  | 258                  | 548                | 431   | 497    | 78    | 138             | 100                       | 84                | 984          | 6,838   | Indonesia                 |                        |    | 430                      | 13                            | 4                             | 38                    | 34                             | 00                                   | 1,142                                      | 273                               | 119  | 14                 | 78                                    | 196   | 1,317  | 1               | 411                       | 274               | 5,341       | Indo  | nesia                 |                        |
| 3/                       | 21                            | 1                             | 13                    | 00                             | 4                                    | 1,031                                      | 1,854                             | 30  | 38                   | 1,206              | 161   | 192    | 343   | 20              | 208                       | 63                | 147          | 5,380 1 | Vietnam                   |                        | 95 | 49                       | 6                             | 1                             | 7                     | 24                             | 2                                    | 1,212                                      | 60                                | 137  | 11                 | 107                                   | 167   | 996    | 13              | 720                       | 495               | 5,458       | Viet  | nam                   |                        |
| 121                      | 24                            | 387                           | 193                   | 67                             | 36                                   | 1,723                                      | 3,785                             | 3,021                                       | 1,837                | 397                | 319   | 552    | 101   | 37              | 323                       | 43                | 23           | 12,989  | Germany                   |                        |    | 19                       | 13                            | 0                             | 240                   | 179                            | 36                                   | 742  | 316                               | 492  | 21                 | 23                                    | 24    | 308    | 61              | 7                         | 266               | 2,914       | Gerr  | many                  |                        |
| y                        | 24                            | 95                            | 243                   | 90                             | 18                                   | 1,249                                      | 1,241                             | 423   | 1,307                | 288                | 526   | 206    | 78    | 156             | 84                        | 23                | 00           | 6,095   | France                    | EU27                   |    | 88                       | 11                            | 24                            | 148                   | 37                             | 19                                   | 535  | 185                               | 48   | 13                 | U                                     | 30    | 84     | U1              | 9                         | 0                 | 1,866       | Fran  | ce                    | EU27                   |
| 104                      | 00                            | ω                             | 42                    | 22                             | 5                                    | 1,781                                      | 1,792                             | 500   | 569                  | 875                | 544   | 245    | 164   | 133             | 195                       | 54                | 5            | 7,041   | Italy                     |                        |    | 18                       | 7                             | 0                             | 00                    | 9                              | 1                                    | 396  | 73                                | 29   | 00                 | 3                                     | 171   | 41     | 12              | 33                        | 00 Y              | 885         |       |                       |                        |
| 14                       | 4                             | 105                           | 258                   | 105                            | ω                                    | 184  | 555                               | 302   | 259                  | 2                  | 386   | 123    | 183   | 0               | 92                        | 6                 | 425          | 3,067   | Netherlands United States |                        |    | 89                       | 6                             | 73                            | 210                   | 35                             | 60                                   | 222  | 418                               | 126  | 13                 | 62                                    | 22    | 174    | 0               | 112                       | 31                | 2,774       |       | nerlands<br>ed States | _                      |
| 610                      | 162                           | 1,047                         | 2,331                 | 1,551                          | 722                                  | 6,543                                      | 10,416                            | 5,030                                       | 3,847                | 881                | 881   | 1,417  | 814   | 413             | 533                       | 217               | 1.561        | 38,974  | of America United         |                        |    | 487                      | 213                           | 0                             | 2,197                 | 1,008                          | 973                                  | 2,448                                      | 2 164                             | 1,440  | 222                | 504                                   | 280   | 2,745  | 244             | 908                       | 48                | 010,71      | of A  | merica                |                        |
| 209                      | 83                            | 612                           | 1,110                 | 549                            | 852                                  | 3,607                                      | 1,663                             | 958   | 1,033                | 374                | 558   | 224    | 68    | 70              | 147                       | 23                | 41           | 12,181  | Kingdom                   |                        | 6  | 122                      | 42                            | 0                             | 856                   | 496                            | 579                                  | 2,011                                      | 518                               | 175  | 54                 | 277                                   | 43    | 128    | 8,530           | 299                       | 13                | 14,555      | King  |                       |                        |
| u                        | 20                            | v                             | 628                   | 56                             | 197                                  | 1,553                                      | 163                               | 7   | 24                   | 57                 | 40    | 20     | 5     | 73              | 13                        | <u>.</u>          | 12           | 2,875   | Hong Kong                 |                        |    | 31                       | 6                             | 4                             | 266                   | 79                             | 300                                  | 1,560                                      | 580                               | 220  | 57                 | 350                                   | 34    | 521    | 3,054           | 84                        | 145               | 7,384       | Hone  | g Kong                |                        |
| 34                       | 00                            | 7                             | 102                   | 47                             | 10                                   | 1,433                                      | 790                               | 225   | 315                  | 61                 | 92    | 104    | 198   | 5               | 83                        | 74                | 4            | 3,593   | Canada                    |                        | 8  | 691                      | 10                            | 16                            | 79                    | 79                             | 30                                   | 612  | 159                               | 38   | 13                 | 160                                   | 18    | 198    | 46              | 33                        | 110               | 2,343       | Cana  | da                    |                        |
| ,                        | 12                            | 262                           | 66                    | 57                             | 59                                   | 205  | 1,007                             | 254   | 884                  | 46                 | 70    | 32     | 94    | 67              | 32                        | 4                 | 4            | 3,163   | Switzerland               |                        |    | 5                        | 4                             | 17                            | 142                   | 129                            | 74                                   | 425  | 34                                | 8  | 2                  | 2                                     | w     | 44     | 1,172           | 0                         | 0 0               | 2,108       |       | zerland               |                        |
| 1                        | 51                            | 6                             | 40                    | 15                             | 2                                    | 187  | 6                                 | 4   | 0                    | 0                  | u     | 4      | 31    | 2,572           | ω                         | 0                 | 247          | 3,173   | Papua New<br>Guinea       |                        |    | 419                      | 2                             | 0                             | 117                   | 30                             | 6                                    | 170  | 528                               | 98   | 65                 | 61                                    | 76    | 197    |                 | 98                        | 6                 | 2,087       |       | ia New                |                        |

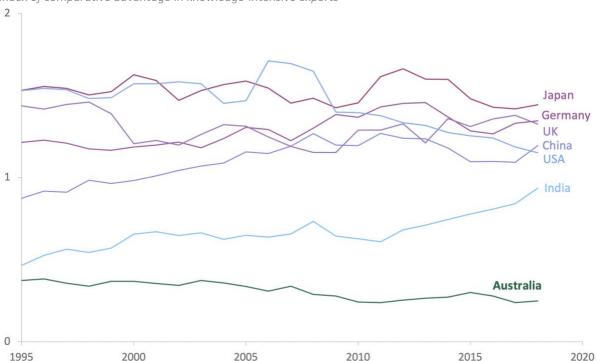
Note: the appendix details the specific goods and services in each group.

 $Source: \textit{CPD analysis based on data from UN Trade Statistics } \underline{\textbf{2020}} \textit{ (for goods trade) and OECD } \underline{\textbf{2019}} \textit{ (for services)}.$ 

Australia's major goods exports are raw agricultural products and intermediate inputs for manufacturing (such as metal ore) which are then processed in other countries, such as China. In the second panel in fig. 2, we can see that Australia then imports back finished consumer goods and technical machinery from a range of countries (such as China, United States, and Germany). Australia also exports a significant amount of services; mostly in the form of tourism and overseas students visiting Australia. Five lines in fig. 2 (fossil fuels, minerals, precious metals, raw animal and plant products, and travel) account for over 70% of Australia's goods and services exports. Most of these sectors are not value-added. Australia is relatively uncompetitive in knowledge-intensive export sectors (fig. 3), such as the production of specialised technical machinery and high-value-added manufactures (which is often situated in high-income countries like Germany where there is a nexus of design, engineering and production).<sup>4</sup>

Having strong export sectors in high-value-added manufactures is a winning strategy for the next phase of globalisation, and these export markets will become increasingly more contested as China, India, and Australia's neighbours in the Pacific move up the value chain. Figure 3 shows how other countries – but not Australia – are developing broad comparative advantage across these value-added goods and technical manufactures.

Figure 3: When it comes to goods exports, Australia's comparative advantage is not in knowledge-intensive industries



Index of comparative advantage in knowledge-intensive exports

Note: this is an average of revealed comparative advantage across a basket of export goods which the EU categorises as high-tech or knowledge-intensive industries.

Source: CPD analysis based on UNCTAD's Revealed Comparative Advantage index (2019) and Eurostat's high-tech statistics metadata (2020).

<sup>&</sup>lt;sup>4</sup> This mismatch is apparent when looking at the "foreign value added" of Australia's exports: 10.1% for Australia, against and OECD average of 25.3%. Very little of what Australia exports is based on taking foreign inputs and transforming them into something better. See OECD (2018) <u>Trade in Value Added: Australia</u> for more.

<sup>&</sup>lt;sup>5</sup> Many commentators and observers of Australia's economy have raised this lack of export industry diversification as a key concern. See the <u>submissions received by the committee</u>, paraphrased by Greg Earl (2020) in <u>Economic diplomacy: Post-Covid trade</u>, from <u>decoupling to wet markets</u> in The Interpreter.

It isn't necessarily a problem for Australia to be a net importer of consumer goods and high-value-added manufactures; this is the benefit of globalisation. An equally sound strategy – one that has served Australia well – is deriving comparative advantage from a set of commodities that are diversified across different products and markets. But Australia's relatively concentrated export profile is at risk from both changes in global demand for carbon-intensive goods (discussed in section 3.3) and global shocks such as Covid-19 (discussed in section 4.1).

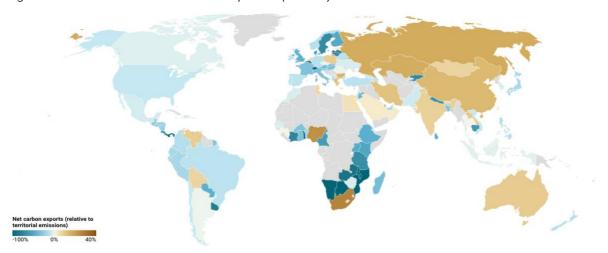


Figure 4: Australia is a net carbon exporter (brown)

 $Source: \textit{CPD analysis of data from UNFCCC (} \underline{2019}\textit{)}, \textit{Gilfillan et al. (} \underline{2019}\textit{)} \textit{ CDIAC and Peters et al. (} \underline{2019}\textit{)}$ 

As a consequence of Australia's thin export base, it is one of the few countries outside of the Middle East, China and central Asia to be a net-*exporter* of carbon (see fig. 4).<sup>6</sup> This reflects the high energy- and carbon-intensity of many of Australia's exports: for instance, it takes a lot of electricity to process aluminium ore, and a lot of carbon emissions are embedded in livestock. And this doesn't even account for the fact that much of what Australia exports is literally physical carbon (coal and oil).

This concentrated export mix may suit Australia well while there is high demand for these goods – arguably this drove Australia's pre-GFC boom – but as global demand becomes more sensitive to carbon, Australia's commodity specialisation will become a liability (see section 3.3).

<sup>&</sup>lt;sup>6</sup> This is called consumption-based emissions accounting. If Australia emits 1.5 tonnes of CO<sub>2</sub> to create a tonne of aluminium which is then exported to China, then those 1.5 tonnes of CO<sub>2</sub> that were emitted in Australia are recorded as being transferred to China. See Friedlingstein et al. (2020) <u>Global Carbon Budget 2020</u> and Peters et al. (2012) <u>A synthesis of carbon in international trade</u> for more on this.

### 3. HOW CLIMATE POLICY IS AFFECTING TRADE AND DIPLOMACY

As countries and leaders around the world get more serious about a coordinated global approach to climate change, they are turning to trade as a key policy lever. Climate policy is no longer an issue that exists in a silo to be negotiated by environment ministers.

There is a long history of trade being used to coordinate action between countries, from safety standards to copyright protection. Climate is next. And because the scale of climate change is so large, it is prompting an unprecedented level of planning between nations. This has repercussions for Australia's economic and political interests. The global response to climate change is, for all intents and purposes, an exogenous shock: something external to the country that Australian policymakers cannot control. Australia must consider how to advance its own interests in this new global economy (something I return to in the final part of this paper).

The rest of this section will consider four broad trends, and how Australia can respond to them. The first is the elevation of climate issues to the highest levels of diplomatic consideration — which leaves Australia under an uncomfortable spotlight. The second trend is growth in preferential trade in low-carbon green goods — an opportunity Australia can tap into. The third is simultaneous and deliberate decrease in demand for carbon-intensive goods — a trend that will affect many of Australia's key export sectors. And finally, the growing global pools of capital being directed towards green investment opportunities — another opportunity for Australia.

### 3.1 The rise of climate diplomacy

### Key points for Australia

- by making credible commitments under the Paris Agreement framework (for example, by increasing domestic targets and investment), Australia could put itself firmly inside the diplomatic club. Without this, Australia remains on the outer with less ability to shape new standards, norms, and key partnerships.
- stronger commitments from the federal government are relatively low-cost. All states and territories have committed to net-zero emissions by 2050. There will be significant economic transformation, regardless of whether or not it is led from Canberra.
- a more ambitious Australia could be a leader on many diplomatic fronts, such as joining New Zealand's ACCTS, or using its reputation as an investor-state dispute warrior (cigarette plain packaging reform) to drive progress at UNCITRAL.
- there are many global coalitions that Australian non-state actors (such as cities, industry groups, and businesses) can engage with in the lead-up to COP26, even in the absence of direct positive leadership from the federal government.



Many of Australia's most significant diplomatic partners are making climate change – and a reduction in carbon emissions – a key policy priority. <sup>7</sup> In December 2019 the EU Council endorsed the European Green Deal, an ambitious plan for Europe to tackle climate change. In June 2019, the UK became one the first countries with a legally binding net zero target set by the parliament. In the second half of 2020, China, South Korea, Japan, and several others made public commitments to decarbonise their economies. Coalitions of countries are forming diplomatic cliques around new agreements and partnerships, such as the New Zealand-led 'Agreement on Climate Change, Trade and Sustainability (ACCTS)' which includes Fiji, Switzerland, Norway and others. The incoming Biden administration has a far-reaching plan to embed climate change in US domestic and international policy (see section 4.2). There is also nascent action at the World Trade Organisation (WTO) and UN Commission on International Trade Law (UNCITRAL) to build climate action into baseline trade and investor-state dispute mechanisms.

Australia, meanwhile, has a global reputation for unsteady, halting domestic progress towards decarbonisation. Despite the Australia's claims to be on track, the UN's own analysis finds that Australia will not meet its goals unless the federal government takes more action.<sup>8</sup> This has not escaped international attention, and Australia is seen as a laggard rather than a leader. In 2019, Australia damaged its standing with Pacific neighbours when it blocked a strong climate statement from the Pacific Island Forum.<sup>9</sup> Four months later, Australia faced criticism and diplomatic pushback at the UNFCCC COP25 meeting (United Nations Framework Convention on Climate Change Conference of the Parties) for its intention to use Kyoto carryover credits towards its Paris commitments (a plan partially abandoned at the end of 2020).<sup>10</sup> Australia is on the outer: after being one of the few countries explicitly *not* invited to the UN's climate crunch summit in 2019, Prime Minister Morrison intended to "correct mistruths" at a UN-UK climate summit in December 2020. The UN and UK eventually rescinded Morrison's invitation to speak.<sup>11</sup>

Australia maintains a domestic climate policy that is at odds with its allies' international agenda, and swimming against the tide creates diplomatic drag. DFAT staffers expend significant diplomatic capital justifying Australia's domestic targets and defending the country from international criticism. And this is despite it being relatively costless for the federal government to go with the flow: all Australian states and territories have committed to ambitious decarbonisation goals, as have major banks, industry bodies, superannuation funds and other investors. Australia is committed, it just isn't reflected in federal diplomacy. It would require relatively little new commitments and resources for the federal government to package this up as an international commitment and put Australia at the vanguard of this global shift.

<sup>&</sup>lt;sup>7</sup> For a sampling of these global commits, see: European Commission (2019) <u>The European Green Deal</u>, Shepheard (2020) <u>UK net zero target</u> from the Institute for Government, New Zealand Foreign Affairs & Trade (2020) <u>Agreement on Climate Change, Trade and Sustainability (ACCTS) negotiations</u>, Biden Harris campaign (2020) <u>Plan for a clean energy revolution and environmental justice</u>, The Economist (2020) <u>China aims to cut its net carbon-dioxide emissions to zero by 2060</u>, and Woodroofe & Guy (2020) <u>Climate Diplomacy Under a New U.S. Administration</u> from the Asia Society Policy Institute.

<sup>&</sup>lt;sup>8</sup> The UN's 2019 report said Australia is one of several countries that "require further action of varying degress to achieve their NDC [Nationally Determined Contribution]". See the UNEP (2019) <u>UN Emissions Gap Report 2019</u> and Howes (2020) <u>Australia not to hit its 5% 2020 emissions reduction target till 2030</u> on the Crawford School Devpolicy Blog for more.

<sup>&</sup>lt;sup>9</sup> Smyth (2019) <u>Australia blocks climate change push by Pacific Islands nations</u> in the Financial Times

<sup>&</sup>lt;sup>10</sup> See Slezak (2019) <u>Climate talks at COP25 a 'disappointment' as Australia gets special mention</u> from ABC News

<sup>&</sup>lt;sup>11</sup> See Hook (2019) <u>Leading countries blocked from speaking at UN climate summit</u> in the Financial Times, Murphy (2020) <u>Scott Morrison says Australia will attend climate ambition summit to 'correct mistruths'</u> in the Guardian, and Shields (2020) <u>UN defends excluding Morrison from climate summit, Canberra livid with Johnson over snub</u> in the Sydney Morning Herald.

The UNFCCC's COP26 is the next big climate event on the diplomatic calendar, postponed until November 2021 due to Covid-19. This is the first major stocktake summit since the 2015 Paris Agreement – an opportunity for countries to commit to new carbon reduction targets. Australia's major diplomatic allies are signalling their intent to lead a round of significant ratcheting up of commitments over the next 12 months. If Australia thumbs its nose at the concept of increased ambition, this will embarrass and hurt the efforts of our allies.

As climate negotiations escalate to the level of leaders and finance ministers, Australia is putting itself outside the diplomatic club. Re-entry is not difficult, but it depends entirely on the federal government's willingness to show credible action on emissions reduction. President Biden is hosting a climate summit in April. The UK has invited Australia to join the next G7 meeting in June 2021 where climate change is second on the agenda after Covid-19. These meetings, a few months before COP26, will be a crucial test of Australia's willingness to join the club.

In the absence of positive diplomatic action by the federal government, there are still opportunities for other parts of the Australian community – businesses, NGOs and local governments – to participate in the global groundswell of action. Groups such as C40 cities, Climate-Smart Agriculture, Climate Action in Financial Institutions, Global Green Freight, and many more provide specific opportunities for Australian actors on the sidelines of climate diplomacy. Regulators can also engage in technical diplomacy, away from the spotlight of leaders' summits, through coordinating bodies such as the Financial Stability Board (where the RBA is a member) or the International Organization of Securities Commissions (where ASIC is a member).

#### 3.2 Increase in trade of green goods

#### Key points for Australia

- many countries plan to preferentially favour trade in green goods. There is significant opportunity for Australia to build new export industries around this.
- Australia has large reserves of some of the commodities that will see increased demand from this trend (such as lithium or cobalt), and could get ahead of the curve by moving any extractive industry support towards these new opportunities.
- global value chains are breaking apart and forming in shorter, more local, versions.
   Australia could become the Germany of Asia, specialising in technical and high-value-added niche manufacturing.
- in the short term, programs like Export Finance Australia or the Export Market Development Grants could pivot to help develop new industries.

There is significant momentum behind efforts to increase trade in climate-friendly green goods. Many countries are looking to remove tariffs and non-tariff barriers, implement subsidies, and

God CENTRE

<sup>&</sup>lt;sup>12</sup> UK Cabinet Office 2021, *G7 announcement microsite* 

otherwise find ways to facilitate higher volumes of green trade. These sorts of goods include components for renewable energy generation (such as wind turbines), environmental equipment (such as pollution testing kits), and chemicals for fuel cells and batteries. In coming years, as technologies develop, it will likely also include trade in clean energy fuels (such as hydrogen).

Boosting green trade is becoming a mainstream part of diplomatic negotiations — it has featured in Australia's trade negotiations with both the EU and UK (see section 4.3). Some countries are taking it further, such as the New Zealand-led Agreement on Climate Change Trade and Sustainable Development, trying to create new economic institutions and frameworks to boost the trade of green goods. And many countries are jump-starting new industries to claim a slice of this global prize (for example, Biden's Clean Energy Export and Climate Investment Initiative to export US low-carbon technologies).

Here, the outlook for Australia is mixed. On the positive side, there is an opportunity to become something like the Germany of Asia: specialising in producing technical, high-value-added products and components to feed into green industries. Australia already has an advantage in green patent action, being one of the top 10 countries where green patents are produced — largely in renewable energy technology. Increased regionalisation and replication of global value chains (in response to Covid-19, see section 4.1) creates the perfect environment for Australia to become a hub for these future industries.

But more detailed analysis shows that this will not be easy. The same analysis that put Australia in the top-10 countries for patent generation also shows that innovation has declined from its peak in 2012. Further, the "green complexity index" developed by researchers at Oxford looks at how well-placed an economy is to pivot and compete in new green industries based on existing comparative advantage. They find that Australia has grown weaker over the last two decades, falling from 20th place to 80th in the world. Australia does not currently have a natural comparative advantage in these sectors, and DFAT has been quick to (fairly) warn against using the pandemic as an excuse to support and protect uncompetitive industries. It will require significant effort and investment to turn green trade into a growth engine that drives Australian prosperity, but the regional market is there.

There are also opportunities for Australian primary industries. As demand for one type of energy production falls, and demand for a new type rises, new commodities will dominate global ports. Australia has some of the largest global reserves of lithium, cobalt, nickel, zinc, gold, copper, lead, and silver – all of which are required in large volumes for the renewable energy machinery and infrastructure. Australia also has a comparatively strong endowment of a natural environment suited to direct production of renewable energy (for example: large swathes of sunny land). An easy strategic choice should be to shift government support for extractive industries towards these new commodities, rather than coal and gas. This would at least build up a more diversified commodity export profile, as discussed in section 1.

<sup>&</sup>lt;sup>13</sup> Srivastav (2020) <u>Measuring green innovation in Australia</u> prepared for the <u>Climate & Recovery Initiative</u>

<sup>&</sup>lt;sup>14</sup> Mealy & Teytelboym (2020) <u>Economic complexity and the green economy</u>

<sup>&</sup>lt;sup>15</sup> See DFAT's <u>submissions to the inquiry on the implications of COVID-19 on trade</u>, paraphrased by Greg Earl (2020) in <u>Economic diplomacy: Post-Covid trade</u>, <u>from decoupling to wet markets</u> in The Interpreter.

<sup>&</sup>lt;sup>16</sup> UN Conference on Trade and Development (2019) <u>Commodities and Development Report 2019</u>

<sup>&</sup>lt;sup>17</sup> Garnaut (2020) <u>Superpower</u>

In the September 2020 Technology Investment Roadmap, the Commonwealth government laid out a plan to boost the country's competitiveness in green goods by re-directing several streams of government spending. In particular, investments in hydrogen production, energy storage, and carbon capture could lead to globally-competitive technology exports. The proposed Asian Renewable Energy Hub (AREH) in the Pilbara is a good example of the opportunity: if it goes ahead, this single \$30 billion project will produce double the total Australian renewable output in 2019, and over 80% of this is intended for conversion to hydrogen or ammonia for export across Asia. This is not without challenges. For one thing, the world still lacks global standards and infrastructure for actually trading hydrogen (or other renewable fuels). So apart from investing in production, Australia needs to help ensure that a whole value chain – from production, storage, transport, and end use – is viable and globally standardised.

Australia needs to create additional funding and investment pathways to seriously scale-up the volume of cash going into new industries: the AU\$18 billion technology roadmap (around US\$500 per Australian) does not compare to the efforts of other countries, such as Biden's US\$2 trillion industrial transformation plan (around US\$6000 per American). In the short term, greater investment in green exports could be achieved through existing export-industry support programs — such as AusTrade's Export Market Development Grants (EMDGs), or Export Finance Australia. Indeed, these opportunities can be grasped immediately: the EMDG program is undergoing a once-in-40-years revision. And Export Finance Australia could join front-running members of the Berne Union (such as the export credit agencies of Germany, Denmark and the Netherlands) to create shared plans to decarbonise their portfolios. Australia could also pursue investment partnerships with countries at other points in the renewable export value chain, such as Japan or South Korea who might develop technologies for end-use of ammonia and hydrogen.

#### 3.3 Reduction of trade in carbon-intensive goods

#### Key points for Australia

- many of Australia's major trading partners are actively trying to prevent carbon leakage by reducing the volume of carbon-intensive goods that they import. Australia's export profile is very exposed to this trend.
- Australia should continue investing in energy efficient industrial R&D to reduce embedded carbon in key export sectors, like steel and aluminium smelting.
- in the longer term, removing fossil fuel subsidies and shifting Australia's domestic energy mix towards renewables will help keep Australian exporters free from restrictions imposed by countries looking to limit carbon leakage.

<sup>&</sup>lt;sup>18</sup> See <u>asianrehub.com/about/</u> for a summary of the project, which plans to install up to 100 TWh of annual solar and wind energy generation in the Pilbara. In 2019, Australia produced 55 TWh of renewable energy according to the Department of Industry (2020) <u>Australian Energy Statistics, Table O.</u>

Many countries are trying to reduce the rate at which they import and consume products for which a great deal of carbon was emitted in the production overseas – referred to as carbon leakage. Apart from a pro-climate motivation, there is also a domestic protectionist rationale for this: Germany doesn't want its own producers (with domestic carbon constraints) to lose out when trying to compete in international markets. And British beef farmers don't want to face competition from Australian farms, operating under different standards. One policy solution proposed by the European Commission is a carbon border adjustment; essentially an import tariff on carbon-intensive goods. President Biden has also pledged to impose such a levy on "goods from other countries that are failing to meet their climate and environmental obligations". 19

Australia, as a net exporter of carbon (see fig. 4) must read the writing on the wall. Already China is adapting – implementing an internal carbon price in their energy sector.<sup>20</sup> And Japan made a commitment in October 2020 to reach net zero emissions by 2050.<sup>21</sup> This should worry Australia: China is the largest customer of Australian commodities, and Japan the single largest customer for Australian fossil fuels (see fig. 2). Already, we have seen signs of how crucial these sources of demand are for the Australian economy in the short term (eg. the recent Chinese import ban on Australian coal).<sup>22</sup> As countries like China scale down their consumption of fossil fuels, imports from other countries (like Australia) are likely to be hit hardest as they also try to protect their own industries.

The export sectors most at risk from declining demand – due to high levels of embedded carbon – are also the same sectors identified recently by Deloitte Access Economics as being the most at risk from temperature rises: manufacturing, agriculture, and mining.<sup>23</sup> Without action, these vital sectors face a no-win scenario. Either temperatures rise, and these sectors bear the brunt of \$3.4 trillion in capital damages and lost productivity, or the global community effectively responds to climate change, in which case these carbon-intensive and energy-intensive sectors face a sharp drop in demand.

The federal government's Technology Investment Roadmap intends to reduce the emissions intensity of export sectors like metal production – a sound investment.<sup>24</sup> Regardless of how countries respond to climate change, there will always be demand for metals like steel and aluminium. If Australia can produce commodities with the least embedded carbon, this will stand it in good stead as countries reduce their trade in carbon-intensive goods.

This trend against carbon leakage affects Australia more than most OECD counterparts. For other developed countries, it is about restricting imports with a border adjustment to protect local

<sup>&</sup>lt;sup>19</sup> Biden Harris campaign (2020) Plan for a clean energy revolution and environmental justice

<sup>&</sup>lt;sup>20</sup> Slater (2020) <u>Despite headwinds, China prepares for world's largest carbon market</u>

<sup>&</sup>lt;sup>21</sup> Takahashi (2020) <u>Suga aims for greener Japan with carbon pledge, but details lacking</u> in the Japan Times

<sup>&</sup>lt;sup>22</sup> The China coal ban (see: Tan (2020) <u>China's ban on Australian coal could be 'indefinite' amid heightened political tensions</u> in the South China Morning Post) highlights the major economic risk of over-reliance on this narrow export sector. Of course, in other times (still quite recent), the high exposure to China can work in favour of the coal sector, as in the first half of 2020 when China stopped important Mongolian coal due to the Covid-19 pandemic and demand for Australian coal rose: Tan (2020) <u>Australia becomes China's top source of coking coal as stimulus stokes construction boom</u> in the South China Morning Post.

<sup>&</sup>lt;sup>23</sup> Philip et al. (2020) <u>A new choice: Australia's climate for growth</u> from Deloitte Access Economics

<sup>&</sup>lt;sup>24</sup> Department of Industry, Science, Energy & Resources (2020) <u>Technology Investment Roadmap: First Low Emissions Technology Statement 2020</u>. Also see ClimateWorks Australia (2020) <u>Decarbonisation Futures: Solutions, actions and benchmarks for a net zero emissions Australia</u> for more discussion on decarbonising industrial pathways.

producers. For Australia, it means lower global demand for carbon-intensive exports (as border adjustments push up the cost for foreign consumers to buy our goods) and lower market access (as partners refuse to expand bilateral trade agreements without change in domestic fossil fuel policy).

#### 3.4 Global capital seeking green finance and investment

### Key points for Australia

- it will be a tremendous boost to Australia's economic prospects to secure even a small fraction of the trillions of dollars of global capital being directed towards pro-climate investment.
- despite action from state governments and the financial sector, there is a lack of central coordination from the federal government.
- Australia could strengthen its position by establishing national standards and market institutions (such as standard project labelling) to spur greater investment.
- the federal government could also create enhance the credit quality of Australian green bonds to make Australian investments more attractive to foreign capital (not unlike the NHFIC does for housing investment).

The final plank of green trade and finance is to look at global capital flows. There are already billions of dollars of liquid capital looking for green investment opportunities, and with the current global economic disruption from Covid-19, there are literally trillions of dollars looking for safe, secure, places to invest. There is a large opportunity for Australia to position itself as a place for reliable green investment.

Financial firms, asset managers and pension funds around the world are critically reviewing their portfolios, divesting from high-carbon industries, and ear-marking funds for green investment. At the start of 2020, the world's largest asset manager, BlackRock (with over US\$7 trillion under management), announced plan to divest from thermal coal and other investments that post high climate risks. At the start of 2021, they asked all their portfolio companies to disclose how their business model will be compatible with a net zero economy. Christine Lagarde, president of the European Central Bank, has said the ECB is considering using climate risk as a factor in its bond-buying programs. If Australia can secure a small fraction of the capital heading towards green investment, it will be a massive boost to the economy.

Australia is generally, philosophically, open to investment; and has had some initial success in the last decade establishing green finance instruments. Indeed, Australia is already capturing a decent slice of the US\$250+ billion annual market. Not a world leader, but certainly a strong

<sup>&</sup>lt;sup>25</sup> Sorkin (2020) <u>BlackRock C.E.O. Larry Fink: Climate Crisis Will Reshape Finance</u> in the New York Times

<sup>&</sup>lt;sup>26</sup> Arnold (2020) <u>FCB to consider using climate risk to steer bond purchases, says Lagarde</u> in the Financial Times

middle hitter, issuing around US\$5 billion in green bonds per year. There is definitely still room to grow here: the top-5 countries are in the US\$15-50 billion range, despite some having a smaller economy than Australia. $^{27}$ 

The Australian green finance sector is largely driven by domestic banks and, in recent years, state governments. But with federal coordination and pro-investment signalling, Australia could grab a larger chunk of the potential market – recent analysis estimates that hundreds of billions of dollars (over AU\$250 billion) in additional investment could be secured with better national policy frameworks.<sup>28</sup> And this is just the first order estimates; the opportunity would be far larger: each dollar of foreign investment will unlock additional domestic investment, and create jobs and competitive industries that return long-term profits into the future.

To better position itself, Australia can pursue a handful of simple quick wins. Initiatives to improve the market structure, such as with national investment standards and institutions, would make it easier for large asset managers to assess potential deals. Institutional investors cannot perform detailed due diligence on every infrastructure fund or project in the world, they rely on labelling and "green" accreditation to filter prospects. Many Australian infrastructure projects are not on the radar of global green investors, even though they would meet the requirements — partly because of a lack of national market institutions. The federal government could also step in to enhance the credit quality of green bonds, such as by providing partial guarantees of some green finance instruments (similar to the government-backed housing bonds issued by the National Housing Finance and Investment Corporation, NHFIC). Neither of these efforts would affect the federal balance sheet.

More broadly, Australia has one of the most restrictive foreign investment regimes in the OECD.<sup>29</sup> This is exacerbated by the piecemeal and discretionary approach taken by Australian policymakers in providing direct financial or regulatory assistance for major projects (for instance, the Queensland government's concession to defer royalty payments from the Carmichael coal mine, allowing it to remain financially viable<sup>30</sup>). To the extent that this discretion is exercised, it gives policymakers a powerful tool to distort how global capital is directed towards Australian projects. Forward-thinking policymakers should use this to favour projects that position Australia well for the trends described above (decreasing trade in carbon-intensive goods, increasing trade in green goods).

<sup>&</sup>lt;sup>27</sup> Climate Bonds Initiative (2019) State of the Market 2019: Australia

<sup>&</sup>lt;sup>28</sup> Investor Group on Climate Change (2020) <u>Mapping Australia's Net Zero Investment Potential</u>

<sup>&</sup>lt;sup>29</sup> OECD (2019) *FDI Regulatory Restrictiveness Index* 

<sup>&</sup>lt;sup>30</sup> Ludlow (2020) *Qld government finalises Adani royalties deal before state election* in the Australian Financial Review

### 4. MAJOR GLOBAL TRENDS

#### 4.1 Covid-19 will redraw the maps

#### Key points for Australia

- in the immediate short term the next 12 months Covid-19 is causing a deep global recession, but is unlikely to severely damage Australia's trade outlook (apart from tourism and education).
- in the longer-term, Australia faces a sustained multi-year drop in global demand for some key industries (such as oil and tourism).
- this brings entirely new opportunities. Global value chains are being restructured and Australia could become a base of high-value manufacturing in the Asia-Pacific.

The Covid-19 pandemic has brought a triple shock to economic systems: a demand shock as people stop buying, a supply shock as businesses close their doors, and a financial shock as the liquidity of financial systems is put to the test.<sup>31</sup> This is already leading to a broad global recession, and it is worth looking at the short-, medium-, and long-term implications for Australia's trade position.

In the short term, the shockwaves have rippled outwards in the broadest recession since 1870, with advanced economies shrinking by 7%, a 10% reduction in global trade, and a precipitous drop of 30-40% in FDI capital flows.<sup>32</sup> In the short-term, 2021 will be a crucial diplomatic period. As countries struggle individually, calls are growing for the G20 (or some other body) to coordinate a global economic response.

Despite entering a brief domestic recession, it actually seems like Australia's relatively narrow trade profile has insulated it from falling global demand. Australia's trading partners are still buying steel and coal and beef. Indeed, Australia's domestic demand (the things we import) have fallen faster than foreign demand for our exports: leading to an increased trade surplus in the immediate aftermath.<sup>33</sup> More interesting is the medium- and longer-term structural shifts to global value chains, and the opportunities that this provides for Australia.

Turning to the medium-term, Australia's primary export industries are likely to be hurt by Covid-19. Tourism and education both depend on the movement of people, something that has been significantly restricted – this has had a large effect on the tertiary education sector in

<sup>&</sup>lt;sup>33</sup> See ABS (2020) <u>International Trade in Goods and Services, Australia</u> for data, and Edwards (2020) <u>The costs of Covid:</u> Australia's economic prospects in a wounded world from the Lowy Institute for more analysis.



<sup>&</sup>lt;sup>31</sup> Triggs & Kharas (2020) <u>The triple economic shock of COVID-19 and priorities for an emergency G-20 leaders meeting</u> from Brookings

<sup>&</sup>lt;sup>32</sup> A 7% GDP reduction was predicted in World Bank June 2020' *Global Economy Prospects*, and came to pass in latest ABS Q3 data (2020, *Economic activity fell 7.0 per cent in June quarter*). WTO (2020) *Trade shows signs of rebound from COVID-19, recovery still uncertain* estimate an overall 9.2% reduction in global trade, after a modest Q3 rebound. Also, see Aylor et al. (2020) <u>Redrawing the Map of Global Trade</u> from BCG for modeling on trade impacts, and the UN Conference on Trade and Development (2020) <u>World Investment Report 2020</u> for modeling on FDI impacts from Covid-19.

particular, with a projected halving of international students entering Australia in 2021.<sup>34</sup> As industries sputter along, global demand for inputs such as oil will suffer: the global price for oil went to zero briefly (with storages full, no one wanted to take physical delivery), and global demand for fossil fuels is predicted to have fallen by around 10% in 2020, the biggest drop in history.<sup>35</sup> For Australia, there is a real risk of stranded capital, write-downs and bankruptcies: big investments predicated on a high global appetite for natural resources may have to be mothballed if demand dries up. Already during the pandemic, a Canadian firm (Alimentation Couche-Tard) withdrew plans to acquire Caltex Australia for \$8.8 billion because of concerns around medium-term global demand for jet fuel, and investors in LNG export projects in Queensland suffered multi-billion-dollar writedowns.<sup>36</sup>

Figure 5: Trade in neighbouring Asian regions remains strong, despite Covid-19

Growth of goods exports, Q3 2019 to Q3 2020

10

5

-0

-5

-10

-15

-20

-25

Morther Michigan And Rooth Prediction Scottler Rundle Scottle Scottler Rundle Scottle Scottle Scottler Rundle Scottle Scottler Rundle Scottler Rundle Scottle Scottler Rundle Scottle Scottler Rundle Scottle Scottle Rundle Rundle

Source: UNCTAD (2020)

Moving our sights to the longer-term to look at the world after Covid-19, in 2025 or 2030 or even further, Australia will be confronted by a new economic landscape. After decades of extensive globalisation, the pandemic has exposed the brittle nature of just-in-time supply chains – and the response will likely be some combination of shortening value chains, greater regionalisation, and replication of industries.<sup>37</sup> In practice: this means there may be local demand in the Asia-Pacific for producers of technologically advanced niche products that are currently imported from

<sup>&</sup>lt;sup>34</sup> Hurley (2020) <u>COVID to halve international student numbers in Australia by mid-2021 – it's not just unis that will feel their loss</u> in The Conversation; and see Hale et al. (2020) <u>Oxford COVID-19 Government Response Tracker</u> for information on global policy responses, such as border closures and travel restrictions.

<sup>&</sup>lt;sup>35</sup> See International Energy Agency (2020) <u>Global Energy Review 2020</u>, and Ziemba (2020) <u>Negative oil prices: Why Asian nations may struggle to take advantage</u> in the Interpreter for further analysis.

<sup>&</sup>lt;sup>36</sup> See UN Conference on Trade and Development (2020) <u>World Investment Report 2020</u> and Thornhill (2020) <u>Australia's</u> \$200 Billion LNG Boom Waylaid by Covid and Cracks in Bloomberg.

<sup>&</sup>lt;sup>37</sup> See the UN Conference on Trade and Development (2020) <u>World Investment Report 2020</u>, and Seric & Winkler (2020) <u>COVID-19 could spur automation and reverse globalisation – to some extent</u>

Europe and the United States. Luckily for Australia, these are the same regions where trade is still thriving despite Covid-19 (see fig. 5). Australia could take the opportunity to become a regional hub for high-value-added manufacturing, diversifying the current carbon-intensive export profile. These are the sorts of products that show up in the technical equipment and machinery row of fig. 2, often these are so specialised that there is only one global supplier — however, as firms look to regionalise and shorten supply chains, there may be opportunities to replicate these business models, integrated into Asian value chains. If Australia doesn't grasp it, Japan would be well-placed to capture this opportunity; as would India, Vietnam or China.

#### 4.2 The Biden administration

#### Key points for Australia

- the election of President Biden has brought a fundamental shift in the United States' position on green trade, diplomacy and finance.
- if Australia is nimble enough, and willing to shift its domestic climate policy, close engagement with the incoming Biden administration will deliver many opportunities for Australian firms and industries to benefit from the US green boom.

President Biden has an extensive foreign policy agenda around climate diplomacy and green trade, not to mention a broad plan for domestic economic transformation. Biden has already reentered the Paris Agreement and Secretary of State Anthony Blinken speaks of their "very aggressive plan to move on this internationally". Australia can either ride this wave or be swept aside by it.

Domestically, Biden has a raft of proposals under a US\$2 trillion public investment plan to position the US as an industrial superpower in the low-carbon economy. Looking abroad, he intends to use foreign policy to grow the global green economy and build an ever-larger market for this trade. Biden has committed to re-position the US as a global leader on climate action, convene a Climate World Summit in April, pressure countries to end fossil fuel subsidies, offer alternative development finance to Belt and Road countries (that is, countries receiving infrastructure finance from China) to invest in green infrastructure, and form multilateral R&D partnerships with allies. There have even been calls for the formation of a "climate club" of countries, which would supercharge the green trade agenda (at the moment, spearheaded by the EU with their border adjustment, and New Zealand with their ACCTS group; see section 3.2). These proposals include initiatives such as WTO-level carbon tariffs and border adjustments to penalise non-member countries.

Despite the Democrats' success in the Georgia Senate run-off elections, it is not guaranteed that Biden will be able to appropriate funds for his US\$2 trillion package. But the administration still has significant scope for executive action. Biden has already outlined plans to act on emissions regulations, federal procurement guidelines, environmental regulations, and corporate climate

disclosure.<sup>38</sup> The executive can also take unilateral action on issues such as major infrastructure approvals, restrictions on oil and gas development, and reinstating state regulatory autonomy (eg. restoring California's authority to set vehicle standards), not to mention foreign policy and diplomacy (eg. re-joining the Paris Agreement).<sup>39</sup> Indeed, when the previous administration imposed steel tariffs targeting China in the name of national security, they demonstrated just how much latitude the executive has to act on trade.<sup>40</sup>

For Australia, the things that really matter (diplomacy, trade, and investment partnerships) are largely within Biden's executive authority. The choice is almost binary: is Australia in the club, or out of it? It may become increasingly hard to skirt the issue – part of Biden's platform included pushing all G20 countries to commit to ending export finance subsidies of high-carbon projects. Without serious domestic reform, Australia may find itself at odds with the United States' foreign policy agenda. More pointedly, Biden has been clear that he will use America's foreign and trade policy levers "to stop other countries from cheating on their climate commitments". 41

There is tremendous upside for an Australia that shows credible domestic commitment to decarbonisation. As a close ally, Australia could reap significant gains through a partnership where our researchers and dollars are leveraged by collaboration with the US. In such a partnership, Australia also benefits from being in a distinct enough geographic region to carve out its own niche as a green tech and clean energy exporter in the Asia-Pacific. Apart from partnerships on large government-funded programs, Australia could also pursue partnerships that foster private sector collaboration and exchange of know-how and business processes. Many US firms will be looking to connect, partner and invest with Asia-Pacific counterparts. There are immense positive spillovers that Australia can absorb from the Biden administration's climate investments, Australia just has to position itself to ride this wave.

### 4.3 Current trade negotiations

## Key points for Australia

- current trade negotiations are putting pressure on Australia's domestic climate policy, but seem unlikely to catalyse major changes.
- the EU has strong ambitions to embed climate action in its trade agenda. But this does not seem to be a deal-breaker in current negotiations with Australia.

While COP26 is dominating climate diplomacy, Australia is also in the middle of negotiating several major trade agreements, most notably the Regional Comprehensive Economic Partnership (signed in November 2020), and bilateral trade deals with the EU and the UK.

<sup>&</sup>lt;sup>41</sup> Biden Harris campaign (2020) <u>Plan for a clean energy revolution and environmental justice</u>



<sup>&</sup>lt;sup>38</sup> Irfan (2021) <u>How Joe Biden plans to use executive powers to fight climate change</u> in Vox

<sup>&</sup>lt;sup>39</sup> See Burger & Metzger et al. (2020) <u>Climate Reregulation in a Biden Administration</u> and Shaia & Colgan (2020) <u>Presidential</u> <u>Climate Action on Day One: A Foreign-Policy Guide for the Next U.S. President</u>

<sup>&</sup>lt;sup>40</sup> Bown (2020) <u>Trump's steel and aluminum tariffs are cascading out of control</u> at PIIE

The EU, in particular, has signalled its intention to link its trade and climate agendas. Proposals from the likes of former WTO director Pascal Lamy include creating negotiation red lines with "essential clauses" on climate commitments, or setting tariff schedules that taper down to reward parties for achieving climate objectives. <sup>42</sup> The diplomatic and political pressure from these negotiations may help nudge Australia's ambition higher, especially in concert with the broader array of diplomatic and economic pressures being brought to bear. It certainly provides the federal government a way to score economic wins through domestic climate policy.

However, it is still early days, however, and none of the proposed options have been explicitly included in the negotiation mandate for the EU or UK diplomats sitting across from DFAT. If Canberra remains uninterested in major climate reform, the most likely outcome is that negotiators will hash out a compromise (including action on less contentious areas, like sustainable agriculture). But while climate might not be the decisive factor in concluding these agreements, it will certainly be a feature of how the negotiations play out.

#### Regional Comprehensive Economic Partnership (RCEP)

The Regional Comprehensive Partnership (RCEP), signed on 15 November 2020, comprises the 10 ASEAN countries plus China, Japan, South Korea, New Zealand and Australia – this market represents almost a third of the world's total GDP. <sup>43</sup> Taken collectively, these countries are Australia's most important trading relationship bar none – several times larger than the entire EU (see fig. 1). Now that the text has been formally agreed, it moves towards ratification by each of the individual countries.

The RCEP has been a long time in the making: negotiations commenced in 2011. The deal fell under a political cloud at the last moment when India withdrew from the process out of a concern that the agreement would harm their trade balance with China. The remaining countries, however, have left the door open for India with RCEP leaders and trade ministers saying "India's ascension to the RCEP Agreement would be welcome ... in creating deeper and expanded regional value chains".<sup>44</sup>

Despite being an impressive piece of multilateral diplomacy, the agreement itself is rather soft: it does not do much beyond codifying existing relationships and commitments. Tariff schedules are largely left to be negotiated bilaterally, and the agreement lacks many sections that have become common in contemporary trade agreements (for example, chapters on sustainability or digital trade in services).<sup>45</sup> Australia already has free trade agreements with all 14 participants, and so the RCEP is unlikely to be highly consequential for Australian trade, at least in the short term. On major export relationships (such as exports of LNG to Japan, or iron ore to China), Australia has already secured 0% tariffs under previous agreements with China (ChAFTA), Southeast Asia (AANZFTA), South Korea (KAFTA), Japan (JAEPA) and partners across the Pacific (CPTPP).<sup>46</sup>

<sup>&</sup>lt;sup>42</sup> Lamy, Pons & Leturcq (2020) <u>Greening EU trade #4: How to "green" trade agreements</u>

<sup>&</sup>lt;sup>43</sup> ASEAN (2020) ASEAN hits historic milestone with signing of RCEP

<sup>&</sup>lt;sup>44</sup> ASEAN (2020) Joint Leaders' Statement on the Regional Comprehensive Econcomic Partnership

<sup>&</sup>lt;sup>45</sup> Reinsch, Caporal & Murray (2019) <u>At Last, An RCEP Deal</u> from the Center for Strategic & International Studies

<sup>&</sup>lt;sup>46</sup> DFAT (2020) Free Trade Agreement Portal

That said, it is still an important political statement of economic cooperation for the world's largest trading bloc. Furthermore, it presages much deeper integration of industries in Australia's region – with vertical disaggregation of value chains making inter-ASEAN trade look more like the EU.<sup>47</sup> Looking ahead, Australia could use RCEP as a platform to pursue favourable trading conditions for new green tech and clean energy export industries. If Australia pursues the sorts of new trade opportunities discussed in section 3.2, success will largely depend on the level of demand and trade with RCEP members.

#### European Union (EU27)

The European Union when taken as a group – now minus the United Kingdom – is one of Australia's largest bilateral trade partners with two-way trade of goods and services totalling around \$130 billion (although still several times smaller than the RCEP group). Out of all the negotiating partners discussed in this paper, the EU is also the most committed to using trade as a mechanism to drive climate action.

Australia's trade relationship with the EU is one of the most unbalanced: Australia imports around four times more from the EU than it exports to the EU. From the EU's perspective, their overall goal in trade negotiations is to reduce *non-tariff* barriers as much as possible to increase their exports (Australia's tariff regime is already quite generous to EU imports). From Australia's perspective, a big part of success would be to change the unbalanced trade dynamic. Australian agricultural is likely central to this strategy: agricultural exports to the EU are lower than other comparable partners (eg. USA, see fig. 2), and securing a more favourable EU import regime is an important goal for Australia.

As discussed in section 3.1, the EU is using trade negotiations as a tool to advance global climate action. This is not isolated to Australia: they are also pushing for climate action to be part of the post-Brexit UK-EU agreement. And even the UK, which has legislated a net-zero 2050 target, is criticised by EU negotiators for having "timid ambitions" related only to energy generation, and not all sectors covered by the trade agreement. <sup>48</sup> What must they think of Australia?

The EU's proposed texts for negotiation with Australia included commitments to cooperation on carbon pricing, support for investment in renewables, and removal of barriers that favour legacy fossil-fuel energy production over new renewable energy sources. They also have a comprehensive "farm to fork" strategy for advancing sustainable agriculture through trade. However, these proposed texts are just a starting point for negotiations. On some proposals from the EU, such as geographical indicators (eg. "it's only Champagne if it's from the Champagne region of France"), Australia is currently undertaking domestic policy reform — putting restrictions on Australian producers — in order to secure the agreement. 49 It also seems likely the government

<sup>&</sup>lt;sup>47</sup> For more commentary on this, see Mitchell (2020) <u>Asean trade deal emerging from the shadows</u> in the Financial Times, and Intan (2020) <u>What RCEP can tell us about geopolitics in Asia</u> in the Interpreter

<sup>&</sup>lt;sup>48</sup> Brunsden (2020) Brussels and Britain clash over climate conditions in trade deal in the Financial Times

<sup>&</sup>lt;sup>49</sup> IP Australia (2020) <u>Australia-European Union Free Trade Agreement: Consultation on a Possible New Geographical</u> Indications Right

will commit to agricultural reform, as this is a key area of overlap of interests. On the climate proposals, there have not been any moves to suggest Australia will consider domestic reform.

The various institutions of the EU are currently building a framework to embed their climate agenda into their trade arrangements; but this is still a work-in-progress. And so, despite the EU's ambition for the agreement, it does not seem like the have the institutional mandate, yet, for climate action to be a make-or-break issue. It is illuminating to read the tightly-worded communiques from the European Commission team after each round of negotiations. The first seven times the trade diplomats met, the European delegation emphasised the importance of the effective global climate action. In the most recent eighth and ninth meetings, however, this did not feature in the minutes – instead the negotiators merely "updated each other on climate policies". In all likelihood, the negotiators will reach a compromise agreement without significant climate concessions from Australia. Of course, from there, any deal negotiated by the European Commission must then go to the parliament and Council of Ministers for approval – exposing Australia's climate stance to a higher degree of scrutiny and pressure.

### United Kingdom

For the United Kingdom's newly-formed (and very stretched) trade department, it is a vital priority to get some runs on the board. They have said a trade agreement with Australia is one of their post-Brexit trade priorities. Alongside the likes of the EU, New Zealand, and the United States. For both the UK and Australia, this is a symbolically important relationship, although perhaps less economically crucial than it once was. The United Kingdom is desperate to lock in these early deals, and inside reports suggest there is a little whole-of-government coordination to advance non-trade issues (such as climate) through the three-year-old trade department.<sup>51</sup>

As with the EU, Australian trade negotiators will probably have agricultural tariffs in their sights. Indeed, almost half of all public submissions received by DFAT on the agreement were from the Australian agriculture industry, expressing the need to secure lower barriers to reach British consumers. This will be a hot button issue: British farmers will oppose such measures, already hurting from the loss EU subsidies and frictionless access to the EU market.<sup>52</sup>

Also, as with the EU, the UK government has expressed a desire for this trade agreement to support their climate ambitions. (Indeed, as host and chair of COP26, the UK has every interest to spur other countries to make greater climate commitments.) But unlike the EU, there's nothing to suggest the UK government is arguing for clauses that would force climate action from trade partners. It didn't feature in the trade department's stated negotiation aims, and they even appointed Tony Abbott to advise their trade board.<sup>53</sup> Indeed, the UK appears to be clashing with

<sup>&</sup>lt;sup>50</sup> See Council of the European Union (2018) <u>Negotiating directives for a Free Trade Agreement with Australia</u> for the original mandate given to EU negotiators, and European Commission (2020) <u>EU-Australia Trade Agreement negotiations</u> for EU communiques that summarise each of the negotiation rounds between Australian and EU diplomats.

<sup>&</sup>lt;sup>51</sup> Birkbeck, Jones & Hale (2020) <u>To Advance Trade and Climate Goals, 'Global Britain' Must Link Them</u> from Chatham House

<sup>&</sup>lt;sup>52</sup> Grozoubinski (2020) <u>Australia-UK trade agreement: Good, boring policy</u> in The Interpreter

<sup>&</sup>lt;sup>53</sup> See UK Department for International Trade (2020) <u>Government announces new Board of Trade</u>, with political reporting by the BBC (2020, *Tony Abbott: Ministers defend ex-Australian PM over Brexit trade role*)

the EU around the latter's desire to make climate a central part of an EU-UK trade deal.<sup>54</sup> If Britain are themselves fighting against the introduction of these measures, we can safely assume Whitehall will not force them on Australia.

As discussed in section 3.4, perhaps the largest opportunity here for Australia is not in terms of flows of goods or even services, but flows of capital. The UK is one of the largest sources of foreign investment in Australia. Australia can also tap into booming voluntary carbon markets, using the trade agreement as a platform to supply British firms with Australian carbon offsets. The British/Canadian central-banker-turned-UN-climate envoy, Mark Carney, is leading global efforts to mobilise capital around new financial standards and voluntary carbon markets. 55 Using a UK-Australia agreement to encourage additional investment in Australian green industries would be a win-win for both countries.

<sup>&</sup>lt;sup>54</sup> Brunsden (2020) <u>Brussels and Britain clash over climate conditions in trade deal</u> in the Financial Times

<sup>&</sup>lt;sup>55</sup> See Carney (2020) <u>Building a private finance system for net zero</u>, Taskforce on Scaling Voluntary Carbon Markets (2020) <u>Final report</u>, and Markortoff (2020) <u>Mark Carney says banks should link executive pay to Paris climate goals</u> in the Guardian.

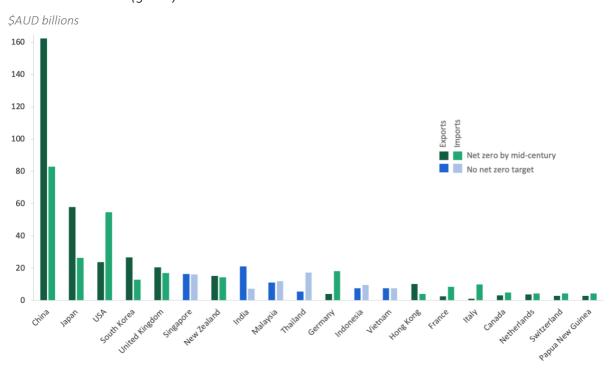
### 5. STRENGTHENING AUSTRALIA'S LONG-TERM POSITION

The issue discussed in this paper seem like technical matters of foreign policy, diplomacy, and closed-door trade negotiations. But really, it all comes down to domestic industrial transformation. It is about Australia's long-term competitiveness in a global economy.

Australia has been a remarkable economic success over the last generation. A large part of this comes down to luck: as China pursued a decades-long strategy of manufacturing and globalisation, it was lucky that Australia had the coal and steel that was in demand. Australia's commodities ensured good terms of trade and a comfortable global position.

As discussed in section 3, global demand will shift significantly over the coming decades. Of Australia's top 20 trading partners, 14 have made pledges of net zero carbon emissions by 2050 (representing 83% of exports across that group, see fig. 6 which revisits fig. 1). To make good on their commitments, these countries will inevitably implement policies that reduce their demand for coal, gas, and (carbon intensive) minerals.<sup>56</sup>

Figure 6: Most of Australia's top-20 trade partners (83% by export volume) have made netzero commitments (green)



Note: several of these countries (eg. PNG) have signalled intentions to be net zero by 2050, but have not yet built it into policy frameworks. China has committed to net zero by 2060, not 2050. The Netherlands has committed to a 95% reduction in emissions by 2050, not net zero. Source: CPD analysis based on data from UN Trade Statistics 2020 (for goods trade) and OECD 2019 (for services).

Some countries, rather than placing levies or border adjustments on specific carbon-intensive imports, are directly attempting to influence domestic carbon policy of trade partners. The rationale is that countries with a less carbon-intensive energy profile will necessarily have less

<sup>&</sup>lt;sup>56</sup> The UN-supported *Principles for Responsible Investment* network have developed a framework for modeling and understanding the investment impacts of this inevitable global policy response. UN PRI (2020) *Preparing investors for the Inevitable Policy Response to climate change* 



carbon "embedded" in the goods they produce. In addition to this, many countries plan to make future trade agreements conditional on phasing out fossil fuel subsidies, ruling out preferential trade with countries that distort their energy market in favour of fossil fuels (the Australian government provides billions of dollars of fossil fuel subsidies per year<sup>57</sup>). Apart from risking future trade deals, Australia's domestic policy also means the country's exports have higher levels of embedded carbon.

The intentions of our trade partners are showing up in current negotiations for free trade agreements. But it would be a strategic misstep to assume these global trade partners will drag Australia towards a green economy. They will import our carbon-intensive goods right up until they don't need them anymore; and then their demand will move elsewhere.

To maintain a strong position in the global economy, Australia needs to have world-class industries producing goods and services *that are in demand* for the decades to come. This means green products, new forms of (renewable) energy, and goods with the lowest possible embedded carbon. Maintaining Australia's existing industrial mix — which seems to be the de facto goal of current trade and climate policy — is akin to making a big strategic bet that global coal trade will still be booming in 2050.

Strengthening Australia's long-term position requires diversifying beyond the strong industries that got Australia to where it is today. The broad political and institutional support that helped these sectors thrive in the 1980s, 1990s, and 2000s are now making it harder for new industries to flourish – the next generation of Australian commodities and export industries need coordinated support too. Australia needs to make strategic bets. Australia is still a lucky country, blessed with immense natural resources to export to the world, but we just need to shift our portfolio. Australia can also build its intellectual capital: investing in new ideas that will place Australia at the heart of the regional green value chain.

In 2050, we will have a hotter world. We will also be able to look back on the last 30 years with hindsight. With a proactive, pro-transition approach, Australia can look back on decades of prosperity, the result of adroitly shifting from one wave of globalisation (the rise of China, demanding iron ore and coal) to another (global decarbonisation). But if Australia's approach is characterised by inertia and timidity, we will look back wondering how our country was fool enough to be stuck holding the bag as the rest of the world moved on.

Cpd CENTRE

<sup>&</sup>lt;sup>57</sup> Estimates of fossil fuel subsidies vary widely, but most put it in the range of tens of billions, with upper estimates around AU\$ 30 billion. For more information, see Coady et al. (2019) <u>Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates</u> from the IMF, Shakuntala & Doukas (2015) <u>G20 subsidies to oil, gas and coal production: Australia</u> from the Overseas Development Institute, and Productivity Commission (2020) <u>Trade and Assistance Review 2018-19</u>.

## **APPENDIX**

Table of goods and services included in figure 2

| Category                                      | Component goods and services <sup>58</sup>  |
|---|---|
| Fossil fuels                                  | HS27 - Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes   |
| Minerals and ores                             | HS25 - Salt; sulphur; earths, stone; plastering materials, lime and cement HS26 - Ores, slag and ash HS68 - Stone, plaster, cement, asbestos, mica or similar materials; articles thereof   |
| Metals and metal<br>articles                  | HS72 - Iron and steel HS73 - Iron or steel articles HS74 - Copper and articles thereof HS75 - Nickel and articles thereof HS76 - Aluminium and articles thereof HS78 - Lead and articles thereof HS79 - Zinc and articles thereof HS80 - Tin; articles thereof HS81 - Metals; n.e.c., cermets and articles thereof HS83 - Metal; miscellaneous products of base metal   |
| Precious metals                               | HS71 - Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin  |
| Raw animal and plant products                 | HS01 - Animals; live HS02 - Meat and edible meat offal HS03 - Fish and crustaceans, molluscs and other aquatic invertebrates HS04 - Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included HS05 - Animal originated products; not elsewhere specified or included HS06 - Trees and other plants, live; bulbs, roots and the like; cut flowers and ornamental foliage HS07 - Vegetables and certain roots and tubers; edible HS08 - Fruit and nuts, edible; peel of citrus fruit or melons HS09 - Coffee, tea, mate and spices HS10 - Cereals HS11 - Products of the milling industry; malt, starches, inulin, wheat gluten HS12 - Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit, industrial or medicinal plants; straw and fodder HS13 - Lac; gums, resins and other vegetable saps and extracts HS14 - Vegetable plaiting materials; vegetable products not elsewhere specified or included HS15 - Animal or vegetable fats and oils and their cleavage products; prepared animal fats; animal or vegetable waxes |
| Plastics, rubber,<br>leather, wood,<br>fabric | HS39 - Plastics and articles thereof HS40 - Rubber and articles thereof HS41 - Raw hides and skins (other than furskins) and leather HS43 - Furskins and artificial fur; manufactures thereof HS44 - Wood and articles of wood; wood charcoal HS45 - Cork and articles of cork HS47 - Pulp of wood or other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard HS48 - Paper and paperboard; articles of paper pulp, of paper or paperboard HS50 - Silk HS51 - Wool, fine or coarse animal hair; horsehair yarn and woven fabric HS52 - Cotton HS53 - Vegetable textile fibres; paper yarn and woven fabrics of paper yarn HS54 - Man-made filaments; strip and the like of man-made textile materials HS55 - Man-made staple fibres HS56 - Wadding, felt and nonwovens, special yarns; twine, cordage, ropes and cables and articles thereof HS58 - Fabrics; special woven fabrics, tufted textile fabrics, lace, tapestries, trimmings,  |

<sup>58</sup> The 'HS' codes refer to goods classified under the 'Harmonized Commodity Description and Coding System' maintained by the World Customs Organization. The 'S' codes refer to services classified under the 'Extended Balance of Payments Services Classification' maintained by the WTO and OECD.



|   | embroidery HS59 - Textile fabrics; impregnated, coated, covered or laminated; textile articles of a kind suitable for industrial use HS60 - Fabrics; knitted or crocheted  |
|---|--|
| Prepared food,<br>beverages, and<br>tobacco       | HS16 - Meat, fish or crustaceans, molluscs or other aquatic invertebrates; preparations thereof HS17 - Sugars and sugar confectionery HS18 - Cocoa and cocoa preparations HS19 - Preparations of cereals, flour, starch or milk; pastrycooks' products HS20 - Preparations of vegetables, fruit, nuts or other parts of plants HS21 - Miscellaneous edible preparations HS22 - Beverages, spirits and vinegar HS23 - Food industries, residues and wastes thereof; prepared animal fodder HS24 - Tobacco and manufactured tobacco substitutes  |
| Manufactured goods                                | HS42 - Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut) HS46 - Manufactures of straw, esparto or other plaiting materials; basketware and wickerwork HS49 - Printed books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans HS57 - Carpets and other textile floor coverings HS61 - Apparel and clothing accessories; knitted or crocheted HS62 - Apparel and clothing accessories; not knitted or crocheted HS63 - Textiles, made up articles; sets; worn clothing and worn textile articles; rags HS64 - Footwear; gaiters and the like; parts of such articles HS65 - Headgear and parts thereof HS66 - Umbrellas, sun umbrellas, walking-sticks, seat sticks, whips, riding crops; and parts thereof HS67 - Feathers and down, prepared; and articles made of feather or of down; artificial flowers; articles of human hair HS69 - Ceramic products HS70 - Glass and glassware HS82 - Tools, implements, cutlery, spoons and forks, of base metal; parts thereof, of base metal HS92 - Musical instruments; parts and accessories of such articles HS94 - Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, n.e.c.; illuminated signs, illuminated name-plates and the like; prefabricated buildings HS95 - Toys, games and sports requisites; parts and accessories thereof |
| Chemicals and pharma                              | HS28 - Inorganic chemicals; organic and inorganic compounds of precious metals; of rare earth metals, of radio-active elements and of isotopes HS29 - Organic chemicals HS30 - Pharmaceutical products HS31 - Fertilizers HS32 - Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints, varnishes; putty, other mastics; inks HS33 - Essential oils and resinoids; perfumery, cosmetic or toilet preparations HS34 - Soap, organic surface-active agents; washing, lubricating, polishing or scouring preparations; artificial or prepared waxes, candles and similar articles, modelling pastes, dental waxes and dental preparations with a basis of plaster HS35 - Albuminoidal substances; modified starches; glues; enzymes HS36 - Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations HS38 - Chemical products n.e.c.  |
| Vehicles and<br>transport<br>(incl. ships, plane) | HS86 - Railway, tramway locomotives, rolling-stock and parts thereof; railway or tramway track fixtures and fittings and parts thereof; mechanical (including electro-mechanical) traffic signalling equipment of all kinds HS87 - Vehicles; other than railway or tramway rolling stock, and parts and accessories thereof HS88 - Aircraft, spacecraft and parts thereof HS89 - Ships, boats and floating structures  |
| Technical<br>equipment and<br>machinery           | HS37 - Photographic or cinematographic goods HS84 - Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof HS85 - Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, parts and accessories of such articles HS90 - Optical, photographic, cinematographic, measuring, checking, medical or surgical instruments and apparatus; parts and accessories  |

|  | HS91 - Clocks and watches and parts thereof<br>HS93 - Arms and ammunition; parts and accessories thereof   |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|
| Travel and transport (incl. for education) | SC - Transport<br>SD - Travel  |  |  |  |  |  |  |  |
| Financial services (incl. insurance)       | SF - Insurance and pension services<br>SG - Financial services   |  |  |  |  |  |  |  |
| Digital, ICT, and entertainment            | SI - Telecommunications, computer, and information services SK - Personal, cultural, and recreational services   |  |  |  |  |  |  |  |
| Professional services                      | SJ - Other business services   |  |  |  |  |  |  |  |
| Intellectual property charges              | SH - Charges for the use of intellectual property n.i.e  |  |  |  |  |  |  |  |
| Government goods and services              | SL - Government goods and services n.i.e.  |  |  |  |  |  |  |  |
| Other goods and services                   | HS97 - Works of art; collectors' pieces and antiques HS99 - Commodities not specified according to kind SA - Manufacturing services on physical inputs owned by others SB - Maintenance and repair services n.i.e. SE - Construction |  |  |  |  |  |  |  |