Foreword

Governments around the world are striving to re-ignite growth in their economies while reducing widening inequalities. At the same time, they are working hard to implement the climate goals agreed by the global community under the Paris Agreement. These challenges are not mutually exclusive. We have a unique window of opportunity to bring the climate and economic growth agendas together and to generate inclusive economic growth in the short term, while ensuring that we meet the climate challenge in the longer term.

Investing in Climate, Investing in Growth lays out the case for governments to pursue an integrated policy approach that combines climate action with fiscal initiatives and structural reforms. It is clear from the report’s analysis that countries can achieve strong and inclusive economic growth while reorienting their economies towards development pathways with low greenhouse gas emissions and high resilience to the effects of climate change. The report sees potential to increase long-run output by up to 2.8% on average across G20 countries in 2050, with a net effect of nearly 5% if mitigated climate impacts are taken into account. Importantly, growth impacts are positive in the near-term too: the report sees potential for a net GDP effect of around 1% for G20 economies by 2021.

However, it is also increasingly clear that meeting the Paris Agreement’s goals will require countries to step up ambition, enhance co-operation across borders and strengthen domestic policies and implementation on the ground as a matter of urgency. Moreover, there is a need for governments to take immediate action. The decisions that we take now on key issues such as infrastructure and the structure of our economies will be critical in ensuring a longer term future that enhances rather than diminishes well-being. Proactive, forward-looking policies to facilitate a just transition for affected businesses and households will also be vital to ensure that reform is inclusive, progressive and good for business, particularly in vulnerable regions and communities.

This report has been produced in the context of the German G20 Presidency, which has placed climate squarely on the G20 agenda in recognition of the fact that the growth and climate agendas are mutually supportive. Indeed, adopting an inclusive, low-emission and climate-resilient growth agenda is an opportunity to reorient G20 growth objectives as the group’s 2014 Brisbane commitment to 2% growth nears its end in 2018.

The OECD is supporting countries, developed and developing, to create more effective policy approaches to address the growth, inclusiveness and climate challenges in a holistic way. For OECD member countries, it will not be easy to achieve the transition from carbon-intensive to low-emissions economies while seeking to re-ignite growth. For partner economies, the challenge is to avoid locking in emissions-intensive development paths while pursuing growth and development opportunities. Our report shows that there are significant benefits to an integrated approach to the climate and growth challenge.

Angel Gurría
OECD Secretary-General
Acknowledgements

This report was prepared under the supervision of Anthony Cox (OECD Environment Directorate) and Andreas Schaal (OECD Sherpa Office and Global Relations Secretariat), supported by a core team of Andrew Prag, Justine Garrett, Richard Baron, Galina Alova, Sarah Finke, Elizabeth Del Bourgo and Makeda Yohannes (OECD Environment Directorate) and Roger Dubach, Nicolas Pinaud and Nejla Saula (Sherpa Office). Gabriela Ramos (OECD Sherpa and Chief of Staff), Catherine Mann (OECD Chief Economist) and Simon Upton (OECD Environment Director) provided strategic guidance to the project.

The OECD would like to thank the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) for providing financial support to the project. A number of staff from the BMUB provided guidance and comments on the report including Norbert Gorißen, Carolin Zerger and Claudia Keller.

The report was authored by teams drawn from a number of OECD directorates: Environment Directorate (ENV); Economics Department (ECO); Directorate for Financial and Enterprise Affairs (DAF); Development Cooperation Directorate (DCD); Trade and Agriculture Directorate (TAD); Centre for Tax Policy and Administration (CTP) and the International Transport Forum (ITF). The Directorate for Public Governance also contributed. Simon Buckle (ENV) supervised the preparation of Chapters 2 and 3, Andrés Fuentes-Hutfilter and Christian Kastrop (ECO) supervised the preparation of Chapter 4, and Ana Novik (DAF) supervised the preparation of Chapters 5, 6 and 7.

The authors for the individual chapters were:

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Lead author</th>
<th>Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1</td>
<td>Andrew Prag</td>
<td>Galina Alova, Richard Baron, Anthony Cox, Roger Dubach, Justine Garrett, Andreas Schaal, Simon Upton and other chapter authors below.</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>Simon Buckle, Michael Mullan</td>
<td>Jo Cadilhon, Jennifer Calder, Robert Dellink, Guillaume Gruère, Maril Hjort, Frank Jesus, Virginie Marchal, Mariana Mirabile, William Wright, Ziga Zarnic, staff from the Met Office Hadley Centre.</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>Virginie Marchal, Mariana Mirabile</td>
<td>Richard Baron, Simon Buckle, Jo Cadilhon, Jenny Calder, Naseed Chirsha Morgado, Maril Hjort, Bérénice Lasfargues, Ziga Zarnic, staff from Grantham Institute, Imperial College London.</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>Andrés Fuentes-Hutfilter, Annabelle Mourougan</td>
<td>Shardul Agrawala, Jarmila Botev, Rob Dellink, Dennis Dlugosch, Jean-Marc Fournier, Olivier Durand-Lasserve, Christian Kastrop and Tomasz Kozluk.</td>
</tr>
<tr>
<td>Chapter 5</td>
<td>Andrew Prag, Enrico Botta</td>
<td>Geraldine Ang, Johanna Arlinghaus, Richard Baron, Jo Cadilhon, Kurt Van Dender, Luisa Dressler, Florens Flues, Franck Jesus, Michael Mullan, Ana Novik, Jehan Sauvage, Ronald Steenblik, Cristina Tebar-Less and Nicolas Wagner.</td>
</tr>
<tr>
<td>Chapter 6</td>
<td>Richard Baron</td>
<td>Gianpiero Mattera, Filipe Silva, Ronald Steenblik, Ziga Zarnic, staff from E3G and the Just Transition Centre, and Genevieve McInnes.</td>
</tr>
<tr>
<td>Chapter 7</td>
<td>Joel Paula, Naseed Chirsha Morgado, Raffaele della Croce and Berenice Lasfargues</td>
<td>Abderrahim Assab, Wiebke Bartz, Flore-Anne Messy, Ana Novik, Haje Schutte, and Guillaume Simon.</td>
</tr>
</tbody>
</table>
Particular thanks are expressed to the members of the project's Advisory Council for their very helpful review and comments:

- Isher Ahluwalia (Chairperson, Board of Governors, the Indian Council for Research on International Economic Relations (ICRIER))
- Luis Alberto Moreno (President, IDB) and his team (Amal Lee-Amin)
- Kate Brandt (Lead for Sustainability, Google) and Francois Sterin (Director, Global Infrastructure, Google)
- Sharan Burrow (General Secretary, ITUC)
- Ottmar Edenhofer (Deputy Director and Chief Economist, PIK)
- Justin Lin (Director, Center for New Structural Economics; Professor and Honorary Dean National School of Development, Peking University)
- Ajay Mathur (Director General, TERI)
- Axel Ockenfels (Professor, University of Cologne)
- Ngozi Okonjo-Iweala (Former Managing Director, World Bank; Chair of the Board, Global Alliance for Vaccines and Immunization (GAVI) and African Risk Capacity (ARC))
- Paddy Padmanathan (CEO and President, ACWA Power) and David Ungar (Executive Director, ACWA Power)
- Robert N. Stavins (Albert Pratt Professor of Business & Government, Harvard Kennedy School)
- Nicholas Stern (Chair, Grantham Research Institute on Climate Change and the Environment)
- Jean-Pascal Tricoire (CEO, Schneider Electric)
- Laurence Tubiana (Former French Ambassador for Climate Change; Professor, Sciences-Po Paris; CEO of the European Climate Foundation).

The OECD would also like to thank the International Energy Agency for its helpful input and comments on the report, in particular Laura Cozzi and Timur Guel, along with Pierpaolo Cazzola, Christophe McGlade, Jacob Teter, Michael Waldron and Brent Wanner. The International Renewable Energy Agency also provided helpful comments.

In addition, the OECD thanks the project’s Knowledge Partners for their contributions to and comments on the report:

- Climate Disclosure Standards Board (CDSB)
- COPPE at Universidade Federal do Rio de Janeiro (UFRJ) (Brazil)
- Development Research Center of the State Council of China (DRC, China)
- E3G
- European Development Finance Institutions Association (EDFI)
- Fiel (Argentina)
- Fondazione ENI Enrico Mattei (FEEM)
- Imperial College London
- Institute for Sustainable Development and International Relations (IDDRI) Deep and the Decarbonization Pathways Project (DDPP)
- International Development Finance Club (IDFC) Secretariat, KfW
- Just Transition Centre of the International Trade Union Confederation
- King Abdullah Petroleum Studies and Research Center (KAPSARC, Saudi Arabia)
- Met Office, Hadley Centre for Climate Science and Services (United Kingdom)
- Observer Research Foundation (ORF, India)
Thanks must also go to the following individuals for their input and comments: Amar Battacharya, Brookings Institute; Emmanuel Guérin, European Climate Foundation, Joeri Rogelj, International Institute for Applied Systems Analysis (IIASA); Ted Nace, Global Coal Tracker; Guineng Chen and Jari Kauppila, ITF; Dale Rothman, Pardee Centre; and David Blandford, Penn State College of Agriculture Science. Thanks also to the many OECD colleagues who provided helpful comments including Dorothée Allain-Dupré, Ruben Bibas, Timothy Bishop, Jonathan Brooks, Jean Chateau, Emilio Chiofalo, Jan Corfee-Morlot, Jane Ellis, Luis-Mario Hernandez, Kaori Miyamoto, Paul O’Brien, Giuseppe Nicoletti, Jens Sedemund and David Turner.

The many comments and suggestions provided by the following committees are gratefully acknowledged:


The OECD is also grateful to the participants of the different workshops:

- OECD Roundtable on “Scaling up climate investment through National Development Banks (NDBs), Multilateral Development Banks (MDBs), and Development Finance Institutions (DFIs)”, Casablanca, Morocco, 5 November 2016
- OECD Workshop on “Make the economic case for the Paris Agreement: Modelling the macroeconomic consequences of climate change action”, Paris, 24-25 November 2017
- Roundtable discussion on “The role of national development banks, multilateral development banks and bilateral development finance institutions in scaling up investment in low-carbon and climate-resilient infrastructure”, Paris, 22 February 2017
- Workshop co-organised by ORF and the OECD on “Growth, Investment and the Low-Carbon Transition in India”, Delhi, 7 March 2017
- Workshop co-organised by DRC and the OECD on “Investment and the Low-carbon transition in China and the world”, Beijing, 12 April 2017

The report was prepared for publication under the direction of Elizabeth Del Bourgo from the OECD Environment Directorate, with editorial work being undertaken by Andrew Johnston (Words for Change), layout by Pierre-Yves Perez-Queyroi (Pykha) and cover design by Andrew Esson (Baseline Arts Ltd). Thank you to OECD Public Affairs and Communications Directorate colleagues Janine Treves for editorial and content support, and Catherine Bremer for media relations support. Production support was provided by Stéphanie Simonin-Edwards of the OECD Environment Directorate.