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SUPPLEMENTARY INFORMATION

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Impacts of climate change on energy systems in global and regional scenarios

Seleshi G. Yalew[1,2,3] ✉, Michelle T. H. van Vliet[2,4], David E. H. J. Gernaat[1,5], Fulco Ludwig[2], Ariel Miara[6,7], Chan Park[8], Edward Byers[9], Enrica De Cian[10,11], Franziska Piontek[12], Gokul Iyer[13], Ioanna Mouratiadou[1], James Glynn[14], Mohamad Hejazi[13], Olivier Dessens[15], Pedro Rochedo[16], Robert Pietzcker[12], Roberto Schaeffer[16], Shinichiro Fujimori[17,18], Shouro Dasgupta[10,11], Silvana Mima[19], Silvia R. Santos da Silva[13,20], Vaibhav Chaturvedi[21], Robert Vautard[22] and Detlef P. van Vuuren[1,5]

[1]Copernicus Institute of Sustainable Development, Utrecht University, Utrecht, the Netherlands. [2]Water Systems and Global Change Group, Wageningen University, Wageningen, the Netherlands. [3]Policy Analysis, Department of Multi-Actor Systems, Technical University of Delft, Delft, the Netherlands. [4]Department of Physical Geography, Utrecht University, Utrecht, the Netherlands. [5]Netherlands Environmental Assessment Agency-PBL, The Hague, the Netherlands. [6]Advanced Science Research Center, GC/CUNY, New York City, NY, USA. [7]National Renewable Energy Laboratory, Golden, CO, USA. [8]Department of Landscape Architecture, College of Urban Science, University of Seoul, Seoul, Korea. [9]International Institute for Applied Systems Analysis-IIASA, Laxenburg, Austria. [10]Fondazione CMCC, Venice, Italy. [11]Università Ca' Foscari Venezia, Venice, Italy. [12]Potsdam Institute for Climate Impact Research, Leibniz Association, Potsdam, Germany. [13]Joint Global Change Research Institute, Pacific Northwest National Laboratory, College Park, MD, USA. [14]MaREI Centre, Environmental Research Institute, University College Cork, Cork, Ireland. [15]Institute for Sustainable Resources, University College London, London, UK. [16]Programa de Planejamento Energético, COPPE, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil. [17]Center for Social and Environmental Systems Research, National Institute for Environmental Studies, Tsukuba, Japan. [18]Department of Environmental Engineering, Kyoto University, Kyoto, Japan. [19]Laboratoire d'économie appliquée de Grenoble, Grenoble, France. [20]Department of Atmospheric and Oceanic Science, University of Maryland, College Park, MD, USA. [21]Council on Energy, Environment and Water, New Delhi, India. [22]Laboratoire des Sciences du Climat et l'Environnement-LSCE, Paris, France. ✉e-mail: seleshiget@gmail.com

Supplementary Information

Supplementary Table 1. *Reference to the full list of papers reviewed in the analysis.*

Article_code	Reference
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Supplementary Table 2. *Number of papers on climate change impact on energy per region, per energy sources and relevant topics.*

	Number of reviewed papers								
Region	Hydro	Solar	Wind	Bioenergy	Thermal	HD	CD	Cost	Others
North America	7	1	5	2	3	5	6	3	7
Latin America and the Caribbean	8	1	4	1	0	1	3	1	5
Western Europe	11	5	11	5	2	2	6	4	11
Central and Eastern Europe	4	0	2	0	1	0	0	0	4
Sub-Saharan Africa	7	1	1	1	0	1	0	0	2
Middle East and North Africa	3	0	0	0	0	0	1	0	2
Former Soviet Union	2	0	1	1	1	1	0	1	3
Central Asia and China	5	0	1	0	0	1	3	0	4
South Asia	2	0	0	0	0	0	1	0	0
Pacific OECD	2	1	0	0	0	2	1	0	0
Other Pacific Asia	2	0	1	0	0	0	1	0	1
Global	6	0	3	0	2	4	5	5	7

Supplementary Table 3. *Models and teams participating on 'ISIpedia-energy' climate change impact simulation.*

Model/Team	Institute
IMAGE	The Netherlands Environmental Assessment Agency – PBL – The Netherlands
GCAM	Joint Global Change Research Institute – JGCRI/PNNL, USA
TIAM	University College London - UCL, UK
AIM	National Institute for Environmental Studies - NIES, Japan
CMCC – FEM	The Euro-Mediterranean Center on Climate Change, Italy
REMIND	Potsdam Institute for Climate Impact Research - PIK Germany
POLES	Grenoble University, France
COFFEE	COPPE, Universidade Federal do Rio de Janeiro, Brazil
GCAM – India	Council on Energy, Environment, and Water, India
ETSAP-TIAM	University College Cork – UCC - Ireland

Supplementary Note I: Global aggregation according to MESSAGE's 11-region level

Sub-Saharan Africa (AFR): Angola, Benin, Botswana, British Indian Ocean Territory, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Cote d'Ivoire, Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Reunion, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Saint Helena, Swaziland, Tanzania, Togo, Uganda, Zaire, Zambia, Zimbabwe

Centrally planned Asia and China (CPA): Cambodia, China (incl. Hong Kong), Korea (DPR), Laos (PDR), Mongolia, Vietnam

Central and Eastern Europe (EEU): Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, The former Yugoslav Rep. of Macedonia, Latvia, Lithuania, Hungary, Poland, Romania, Slovak Republic, Slovenia, Yugoslavia

Former Soviet Union (FSU): Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan (the Baltic republics were assigned to the Central and Eastern Europe region)

Latin America and the Caribbean (LAC): Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bermuda, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, French Guyana, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Santa Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela)

Middle East and North Africa (MEA): Algeria, Bahrain, Egypt (Arab Republic), Iraq, Iran (Islamic Republic), Israel, Jordan, Kuwait, Lebanon, Libya/SPLAJ, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria (Arab Republic), Tunisia, United Arab Emirates, Yemen

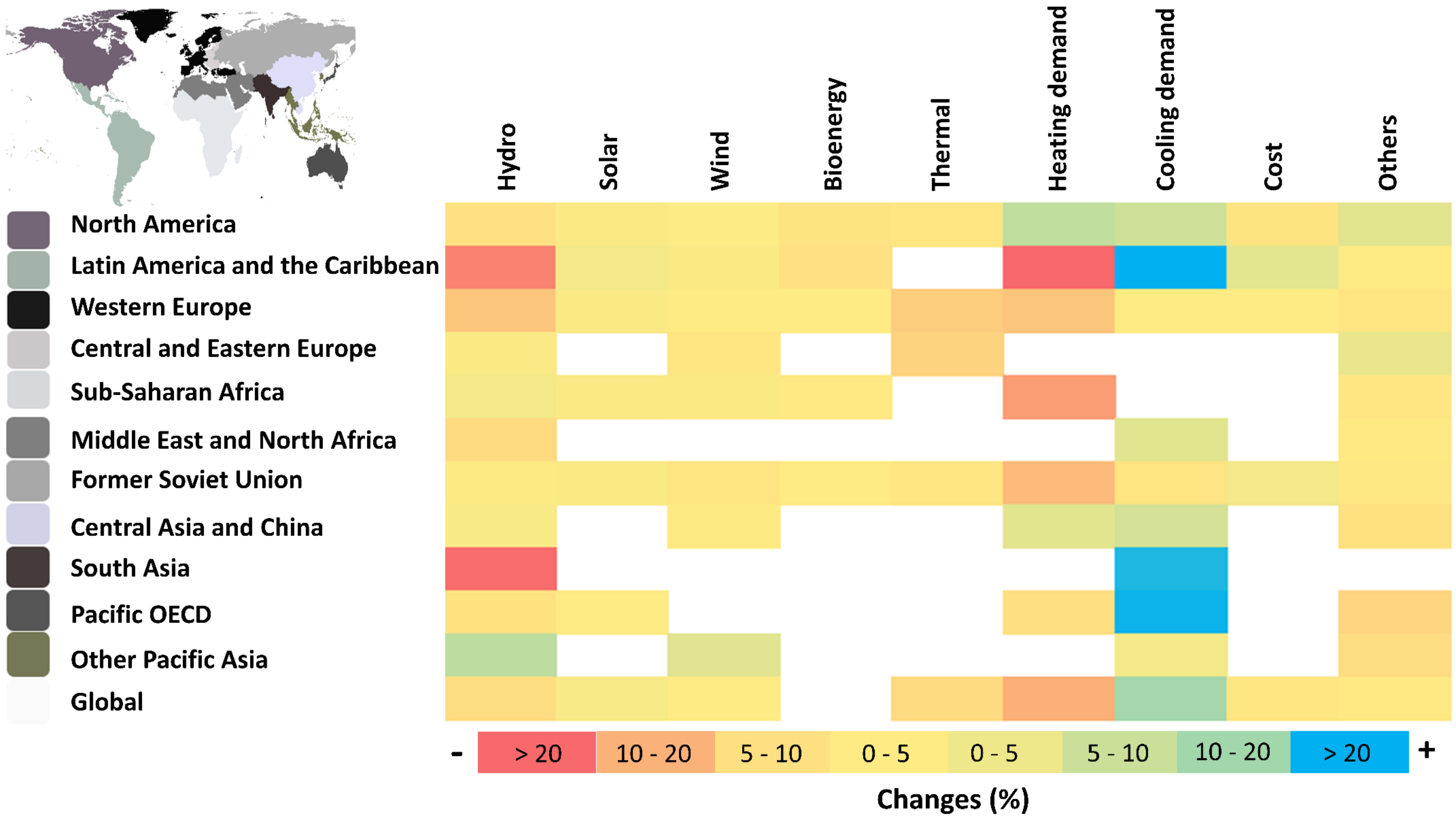
North America (NAM): Canada, Guam, Puerto Rico, United States of America, Virgin Islands

Pacific OECD (PAO): Australia, Japan, New Zealand

Other Pacific Asia (PAS): American Samoa, Brunei Darussalam, Fiji, French Polynesia, Gilbert-Kiribati, Indonesia, Malaysia, Myanmar, New Caledonia, Papua, New Guinea, Philippines, Republic of Korea, Singapore, Solomon Islands, Taiwan (China), Thailand, Tonga, Vanuatu, Western Samoa

South Asia (SAS): Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka

Western Europe (WEU): Andorra, Austria, Azores, Belgium, Canary Islands, Channel Islands, Cyprus, Denmark, Faeroe Islands, Finland, France, Germany, Gibraltar, Greece, Greenland, Iceland, Ireland, Isle of Man, Italy, Liechtenstein, Luxembourg, Madeira, Malta, Monaco, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom



Supplementary Figure 1: *Climate change impacts on energy systems averaged across studies, presented per region from results of the reviewed studies. Cells with red background represent large decreases. Cell colours transitioning between yellow and orange indicate slight decreases. Cells with blue background represent large increases, and colours transitioning between yellow and blue indicate slight increases. Blank spaces in cells represent 'no studies' in the associated regions and energy systems, indicating that some regions are in clear need of more studies relative to others. The grey sheds on the left of the region names correspond to regions of aggregations on the map.*