Greenhouse Gas Reduction: Health Benefits and Co-Benefits

Presentation to the MEDACT Conference

Healthy Planet, Better World

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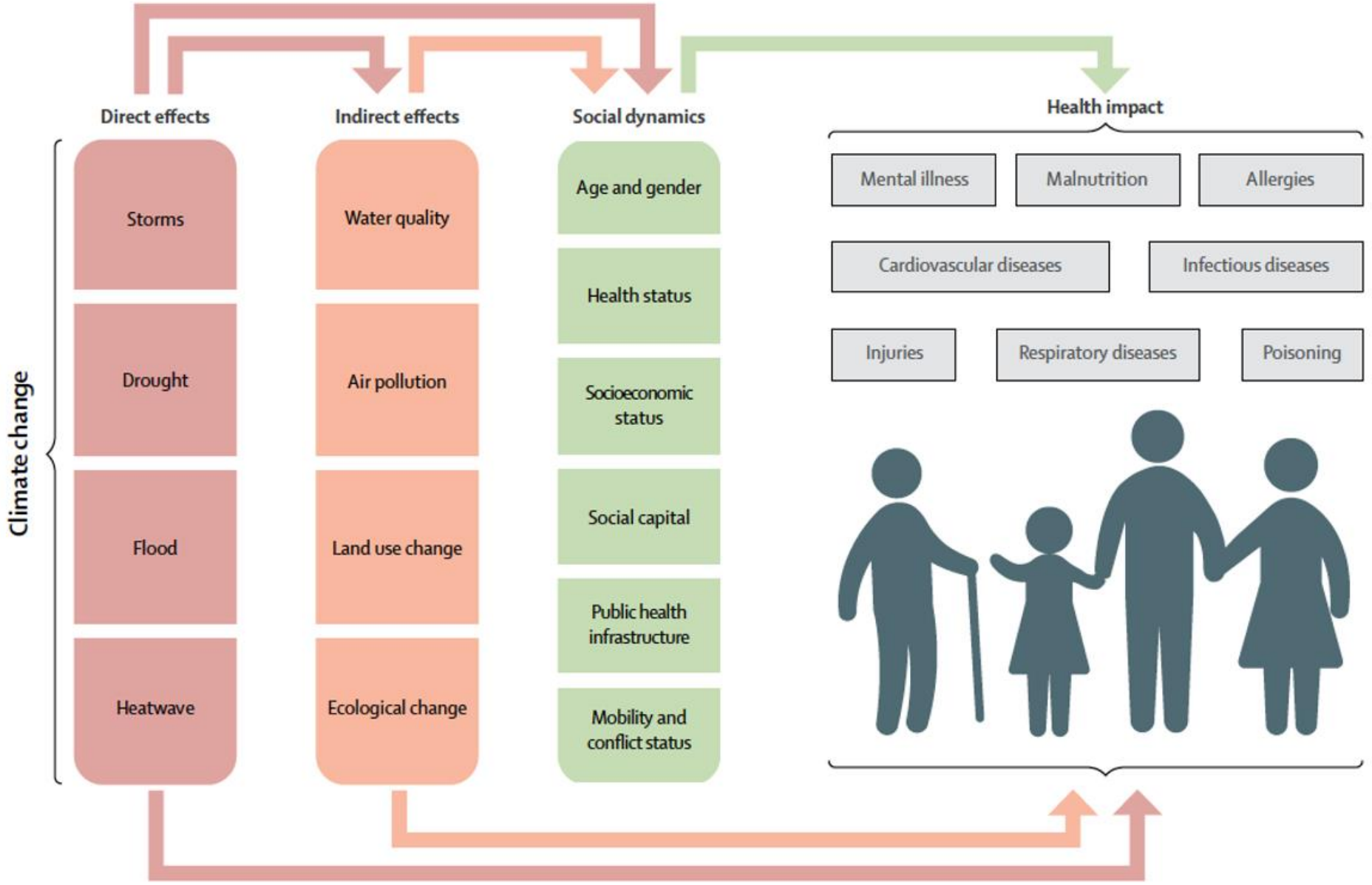
2015 Lancet Commission

LANCET COUNTDOWN: TRACKING PROGRESS ON HEALTH AND CLIMATE CHANGE

LANCET commission ON health & climate '15

Map out the impacts of climate change, and the necessary policy responses, in order to ensure the **highest attainable standards of health** for populations worldwide


Direct effects
Indirect effects
Social dynamics
Health impact
Climate change
Storms
Drought
Flood
Heatwave
Water quality
Air pollution
Land use change
Ecological change
Age and gender
Health status
Socioeconomic status
Social capital
Public health infrastructure
Mobility and conflict status
Mental illness
Malnutrition
Allergies
Cardiovascular diseases
Infectious diseases
Injuries
Respiratory diseases
Poisoning

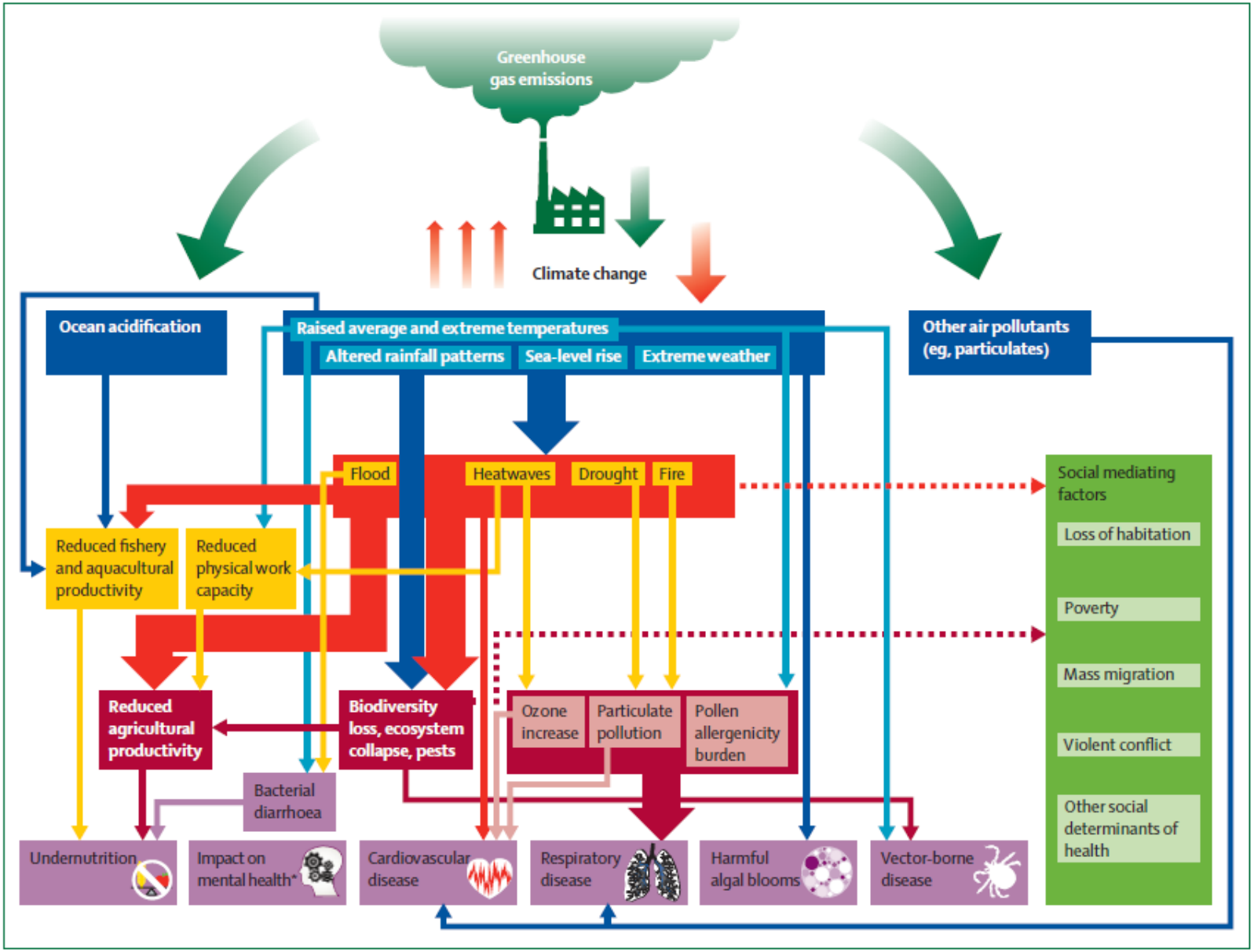
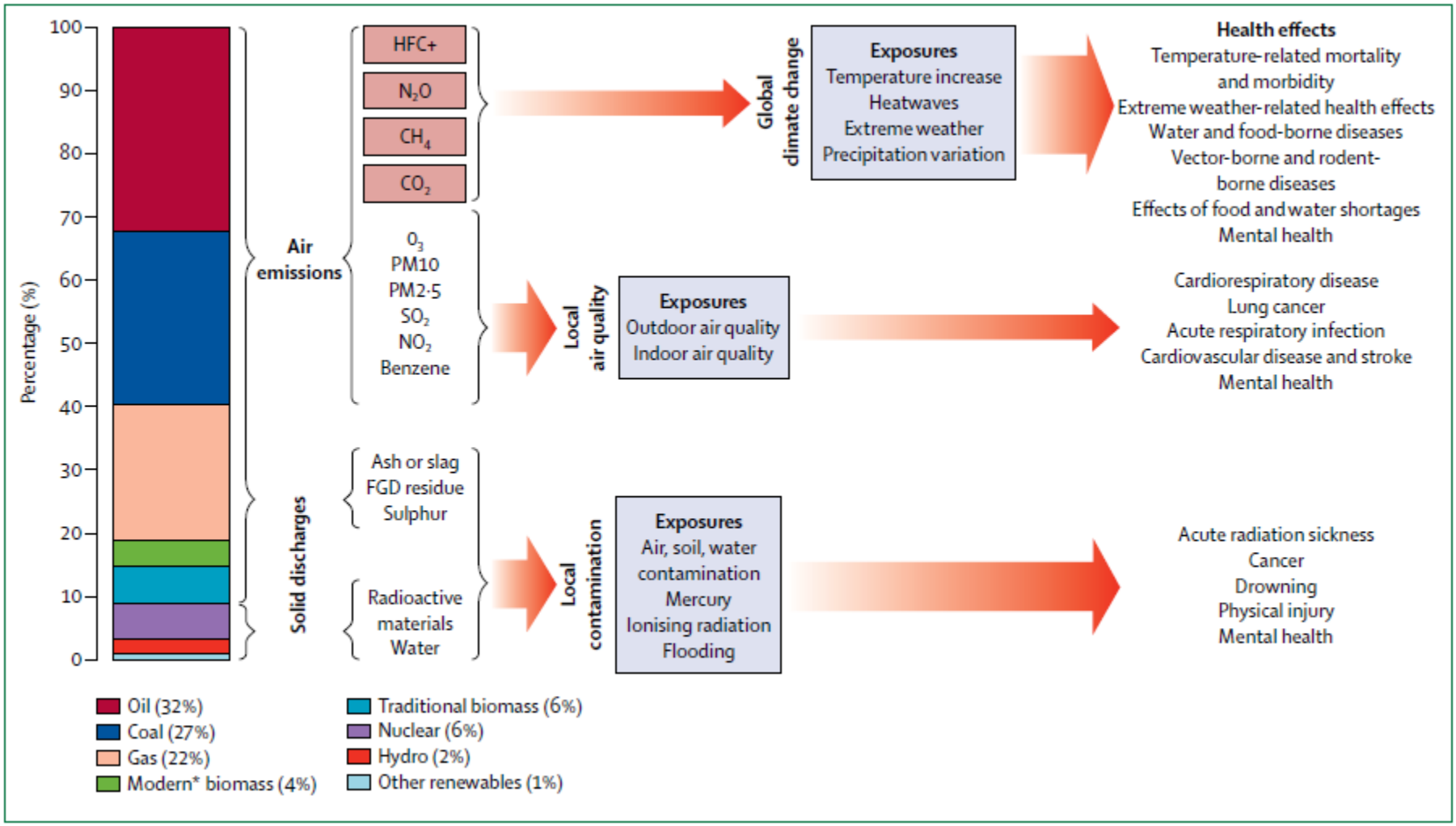


Figure 1: **The health impacts of climate change**

Source: Lancet Countdown, *The Lancet*, 2016

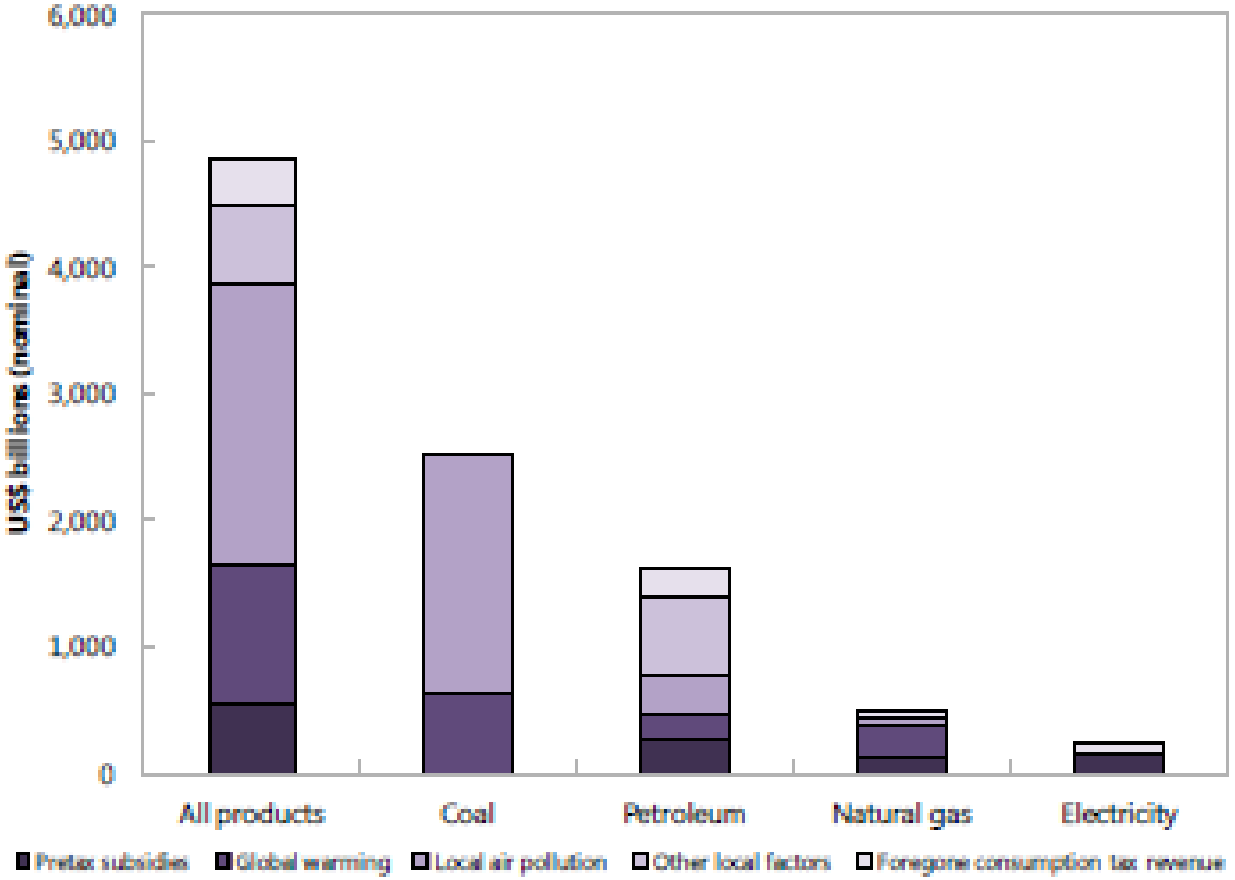
Global energy system and health impacts

Source: Lancet Commission, 2015



Fossil fuels heavily subsidised both by money and costs to human health

Source: Coady, D., Parry, I., Sears, L. and Shang, B. 2015 'How Large Are Global Energy Subsidies?' IMF Working Paper WP15/105, International Monetary Fund, Washington DC [Figure 6: **Global Post-Tax Subsidies by Product and Subsidy Component, 2013**]



Source: Authors' calculations, based on sources in Appendix Table 2.
Note: Other local factors apply only to petroleum products and refer to non-internalized externalities from congestion, accidents, and road fuels.

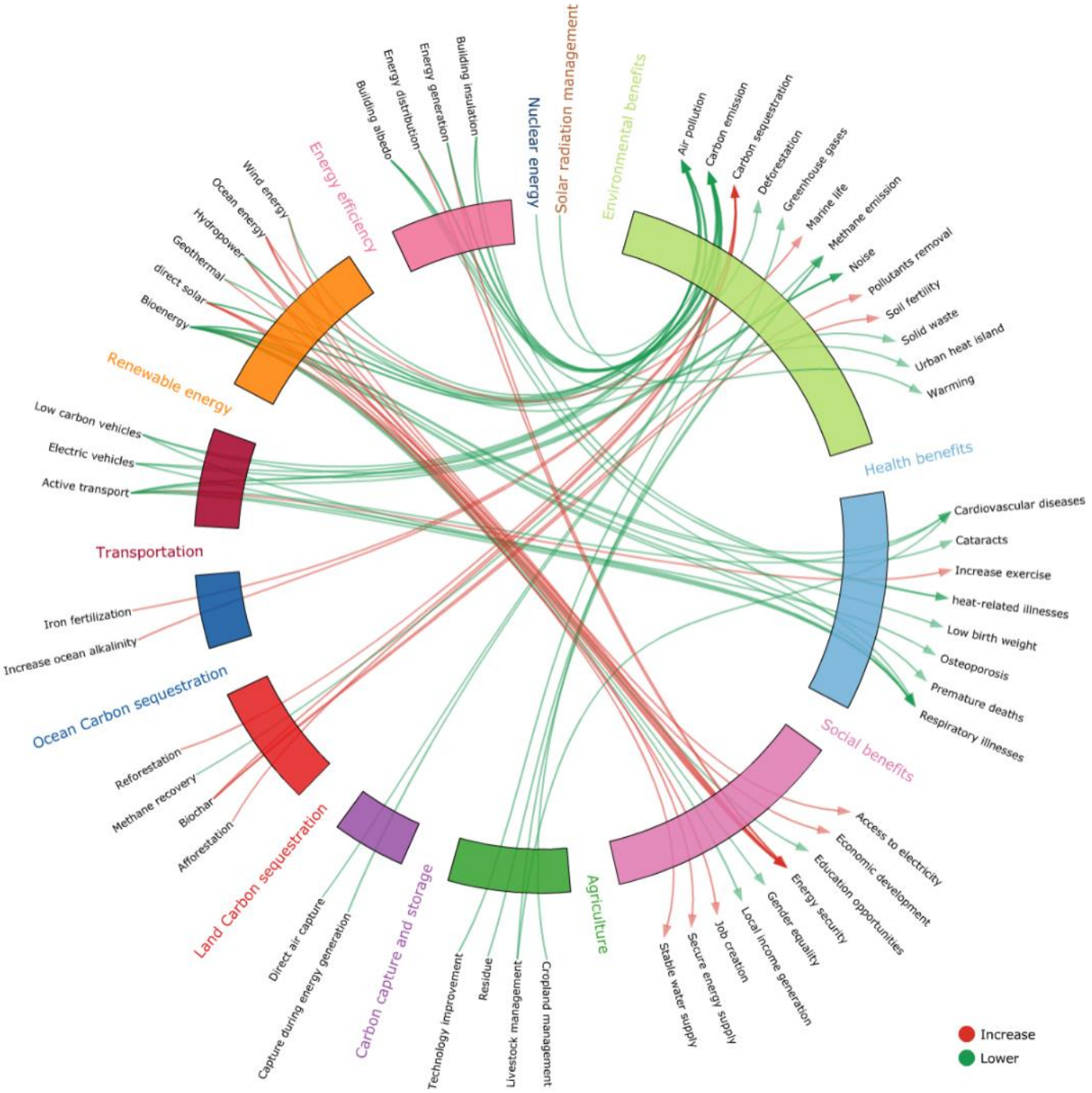
Global Health Exposure

By the end of the century under RCP8.5 (high emissions):

3 billion additional exposure events for elderly people experiencing heat-wave

1.4 billion additional person drought exposure events per year

2 billion additional extreme rainfall exposure events annually


Energy efficiency
Building albedo
Energy distribution
Energy generation
Building insulation
Nuclear energy
Solar radiation management
Environmental benefits
Air pollution
Carbon emission
Carbon sequestration
Deforestation
Greenhouse gases
Marine life
Methane emission
Noise
Pollutants removal
Soil fertility
Solid waste
Urban heat island
Warming
Wind energy
Ocean energy
Hydropower
Geothermal
direct solar
Bioenergy
Renewable energy
Low carbon vehicles
Electric vehicles
Active transport
Transportation
Iron fertilization
Increase ocean alkalinity
Ocean Carbon sequestration
Reforestation
Methane recovery
Biochar
Afforestation
Land Carbon sequestration
Direct air capture
Capture during energy generation
Carbon capture and storage
Technology improvement
Residue
Livestock management
Cropland management
Agriculture
Health benefits
Cardiovascular diseases
Cataracts
Increase exercise
heat-related illnesses
Low birth weight
Osteoporosis
Premature deaths
Respiratory illnesses
Social benefits
Access to electricity
Economic development
Education opportunities
Energy security
Gender equality
Local income generation
Job creation
Secure energy supply
Stable water supply
Increase
Lower

Policy Responses to Protect Health

"Responding to climate change could be the **greatest global health opportunity** of the 21st century"

Key Messages

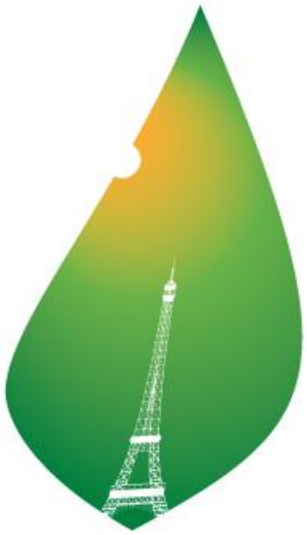
1. Climate change risks reversing the last 50 years of gains in public health by threatening to undermine their social and environmental determinants.

2. The response to climate change could potentially be the biggest global health opportunity of the 21st century

3. There is a crucial role for the health profession and health policymakers to play in driving and delivering this transition, which is what the Lancet Countdown and the WHO Country Profiles are designed to facilitate.

4. This is true for both developing countries and the UK

The Lancet Countdown



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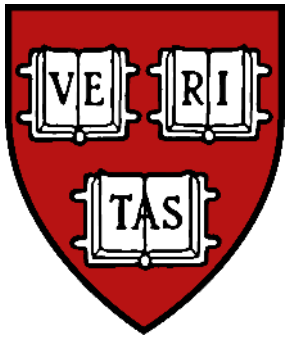
Academic Collaboration



Structure and Outputs

- Annual Indicator Report
- National and City-Level Case Studies
- National Policy Briefs
- Communications and Engagement

Health benefits of climate change mitigation

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3: Health co-benefits of climate change mitigation

3.1 Coal phase-out

3.2 Growth in renewable energy

3.3 Access to clean energy

3.4 Energy access for health facilities

3.5 Exposure to ambient air pollution

3.6 Deployment of low-emission vehicles and access to public transport

3.7 Active travel infrastructure and uptake

3.8 Greenhouse gas emissions from the food system and healthy diets

3.9 Greenhouse gas emissions of health-care systems

Progress towards the low-carbon economy

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4: Economics and finance

4.1 Change in annual investment in renewable energy

4.2 Change in annual investment in energy efficiency

4.3 Low-carbon technology patent generation and innovation

4.4 Valuing the health co-benefits of climate change mitigation

4.5 Direct and indirect fossil fuel subsidies

4.6 Coverage and strength of carbon pricing

4.7 Equity of the low-carbon transition

A Low-Carbon Scenario for the UK

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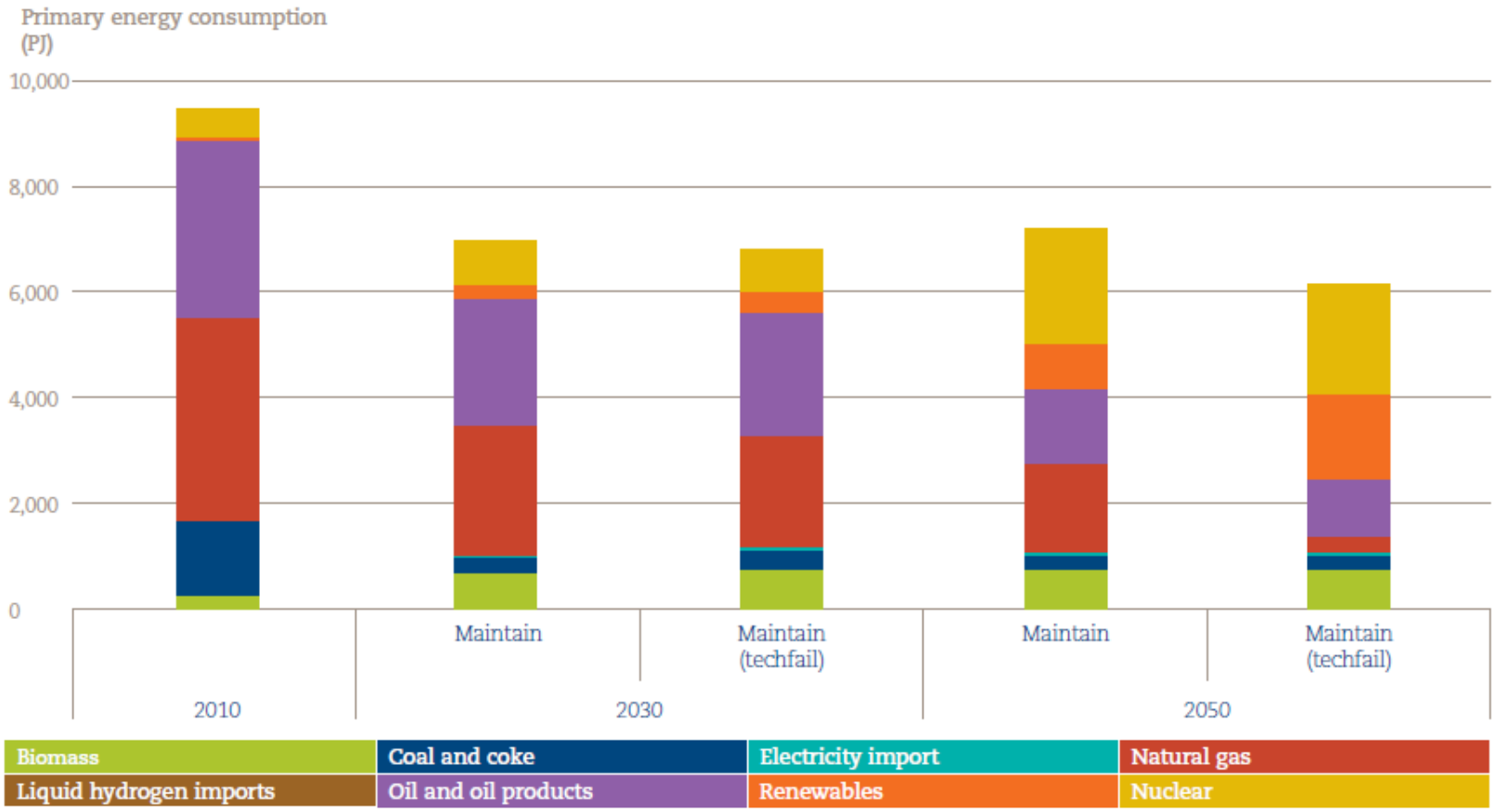
Figure 14: Primary energy consumption in UKTM scenarios that meet the UK's 2050 carbon targets



Source: McGlade, C., Pye, S., Watson, J., Bradshaw, M. and Ekins, P. 2016 *The Future Role of Natural Gas in the UK*, UKERC RR/RV/2016.01, UKERC, London

The key role of energy efficiency in buildings: challenges and policy implications

Energy-efficient buildings have an important role to play in maintaining good health, but:

- Buildings that are retrofitted with insulation badly can cause health problems of their own (damp, condensation, moisture, lack of ventilation)
- Achieving high levels of thermal efficiency is difficult (in new or retrofitted buildings) – the UK construction industry does not currently have the skills to deliver this at scale
- Achieving high levels of retrofitted thermal efficiency is expensive – it is therefore essential to take advantage of those times when buildings are being upgraded for other reasons (e.g. at times of sale, new kitchens etc.)
- Policy needs to be oriented towards these key periods of intervention and use both regulations and financial incentives to stimulate action on energy efficiency (e.g. EPCs, stamp duty)
- Regulations applying to both retrofitted and new buildings need to be enforced