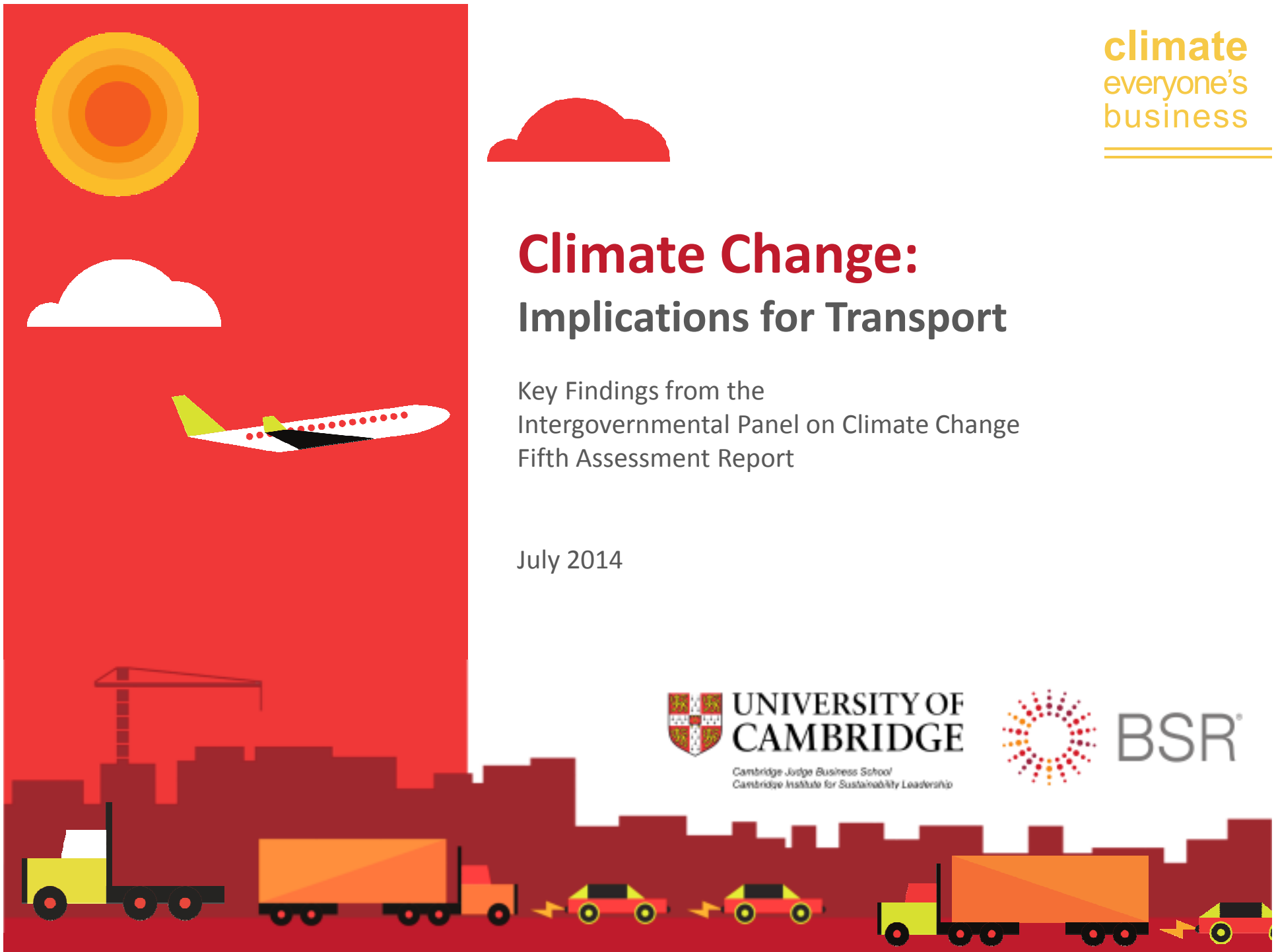


Climate Change: Implications for Transport

Key Findings from the
Intergovernmental Panel on Climate Change
Fifth Assessment Report

July 2014



Climate Change: Physical Impacts

Climate change impacts are projected to raise **global average surface temperature** **2.6–4.8°C** by 2100.

Physical impacts include:

- More intense **droughts**
- More intense **floods**
- **Heat waves**
- Thawing **permafrost**
- Rising **sea-levels**

Vulnerable infrastructure includes:

- **Roads**
- **Railways**
- **Ports and coastal zones**



Climate change impacts could require **extensive adaptation** and **changes to route planning** in some regions.



Climate Change: Sector Emissions

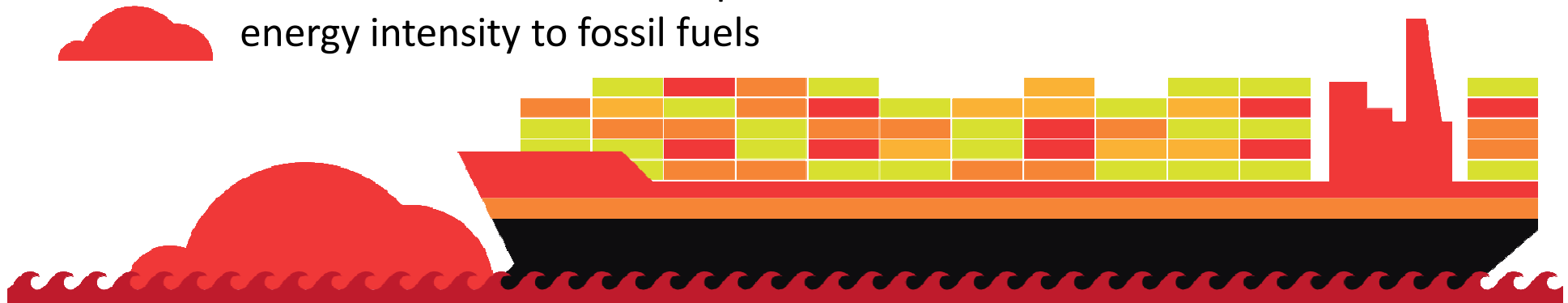
Transport accounts for about **a quarter of global energy-related carbon emissions**, rising faster than for any other energy end-use sector.

Challenges facing transport emissions cuts include:

- **Continuing growth in demand** and **slow turnover** of stock and infrastructure
- For some modes, **suitability of alternative fuels** with an equivalent energy intensity to fossil fuels



Without aggressive intervention, **transport emissions could double by 2050.**



Climate Change: Resilience

climate
everyone's
business

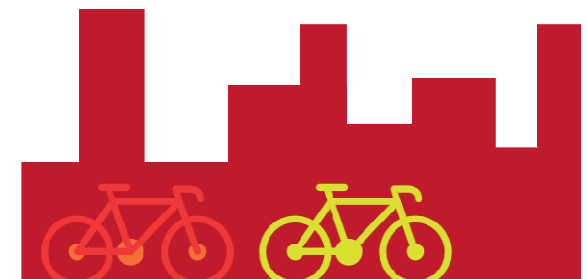
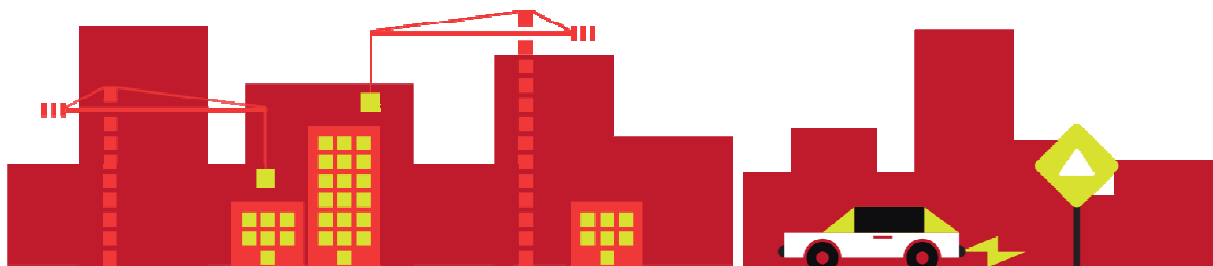
Adapting to climate change will require **higher specifications** for existing transport infrastructure and **awareness of projected impacts**.

Efficient **design of urban areas** and their associated **transport networks** will play a significant role in the resilience of cities in the future.

New **partnerships** with government and civil society as well as **collaboration** with industry and customers can advance **policy** solutions.



Companies can benefit from understanding and quantifying risks to infrastructure in order to justify capital investment and assess supply-chain risk and build resilience.



Climate Change: Mitigation

climate
everyone's
business

Despite a lack of progress to date, **the transition required could arise from:**

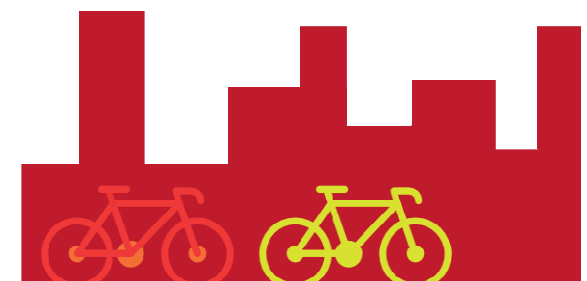
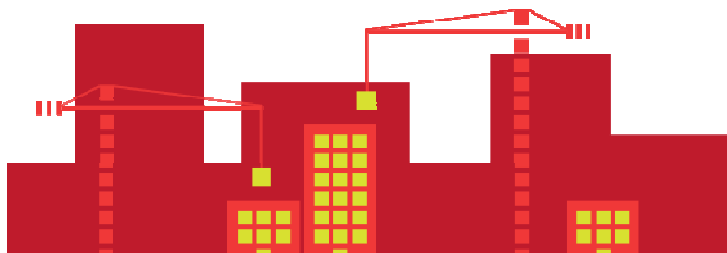
- New **technologies**
- Shifts in **infrastructure and modes**
- Implementation of **stringent policies**
- Changes in **behaviour**

Energy consumption could be cut by 30–50%
by 2030 through for example:

- Improving **aerodynamics**
- Cutting **vehicles' weight**
- Bringing engines up to **leading-edge standards**
- Viable alternatives **replacing petrol and diesel**



Many energy efficiency measures have a **positive return on investment**, and some have a **negative lifetime cost**.



Climate Change: Co-Benefits

Efficient, low-carbon transport systems have **significant co-benefits**, including:

- Better access to **mobility services**
- **Time savings**
- **Energy security**
- Reduced **urban pollution**
- Better **health**

Integrated, far-sighted planning can create **resilient low-carbon transport networks**, particularly in new urban areas. Planning is a priority at onset to create 'resilient cities.'



**Benefits can offset
most if not all of the
mitigation costs.**



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