

Tyndall° Centre

for Climate Change Research

On decarbonising the global economy

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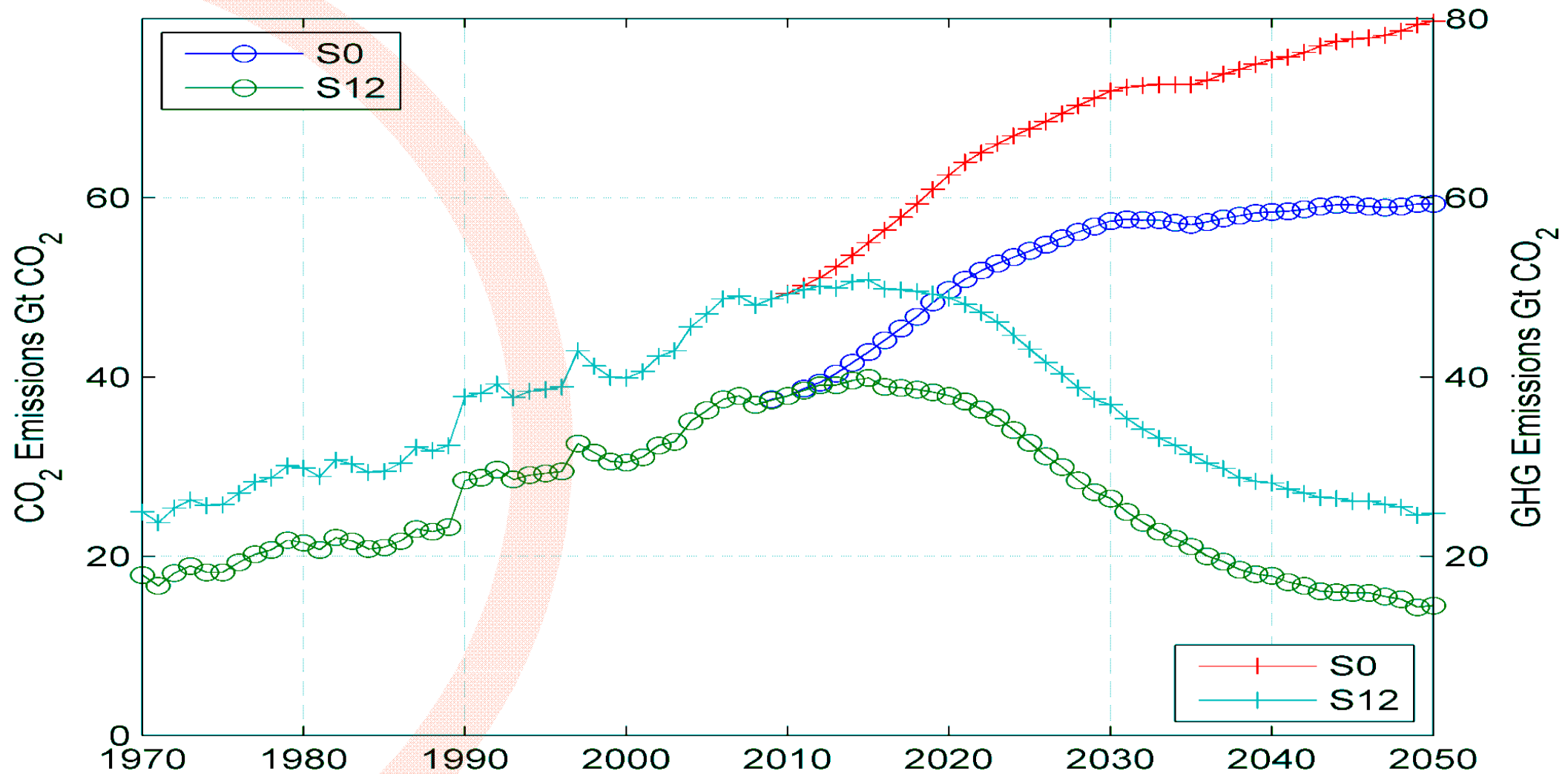
A study looking at decarbonising global economy to have a medium chance to achieve 2 degrees target by 2100

Focus on 2050

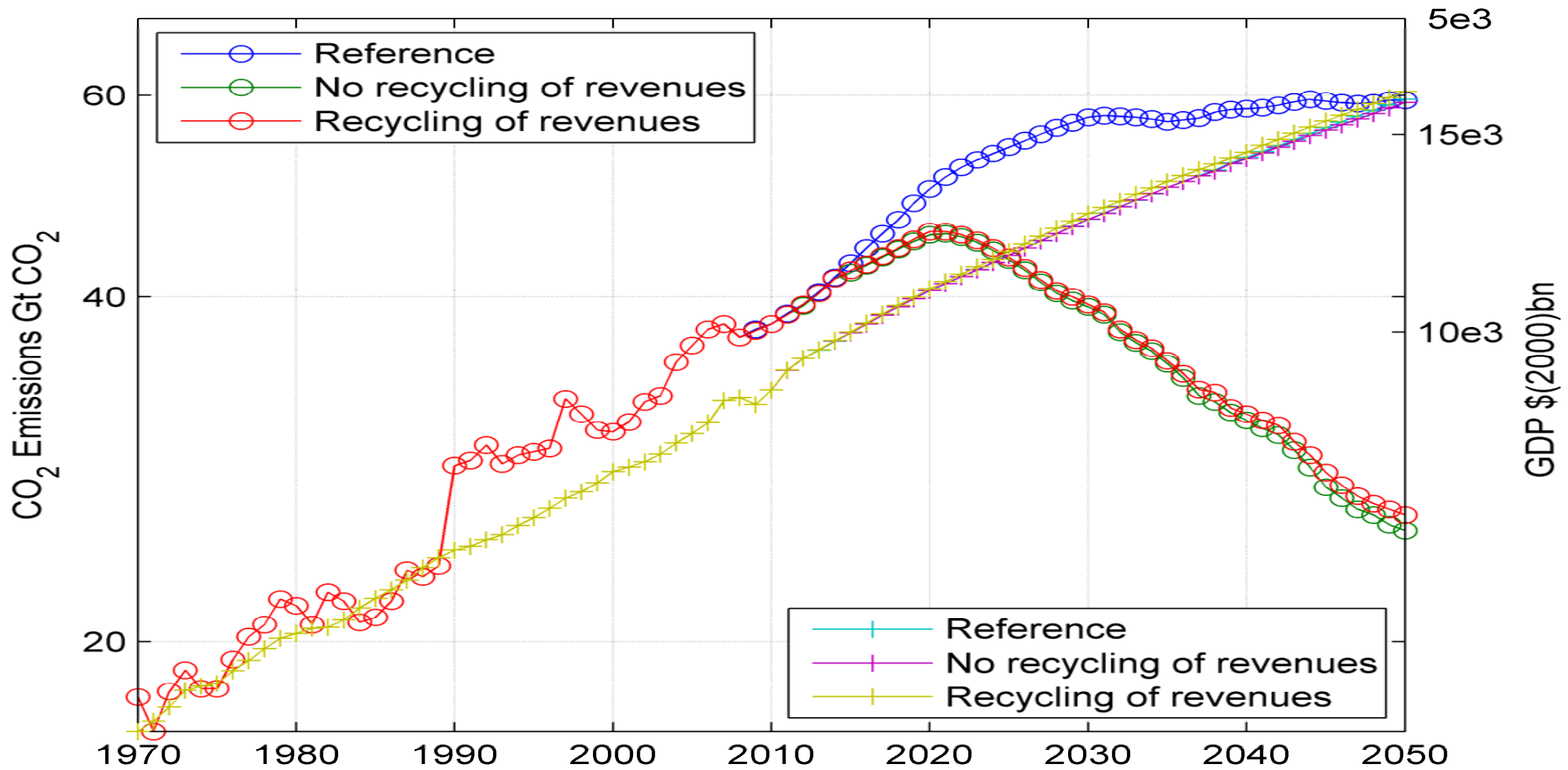
Reference scenario (S0) - no new climate change policies, but all currently existing policies in place over the entire study period 2013 - 2050

Decarbonisation scenario (S12) with a portfolio of climate policies to achieve the target (450 ppm)

Altogether 20 different scenarios were modelled



Growth rates



Source: E3MG modelling, Barker and Anger, 2012 – work in progress

Oil price falls in the decarbonisation scenario – less demand for fossil fuels and is 127 USD per barrel in 2050 compared to 207 USD per barrel in the reference scenario (in 2009 USD)

This fall needs to be compensated by increasing carbon prices and gradual removal of fossil fuel subsidies

Regulation support to avoid switching back to fossil fuels

Emissions trading systems for EU, USA, China and other major economies, developing countries benefit from technology spill-overs

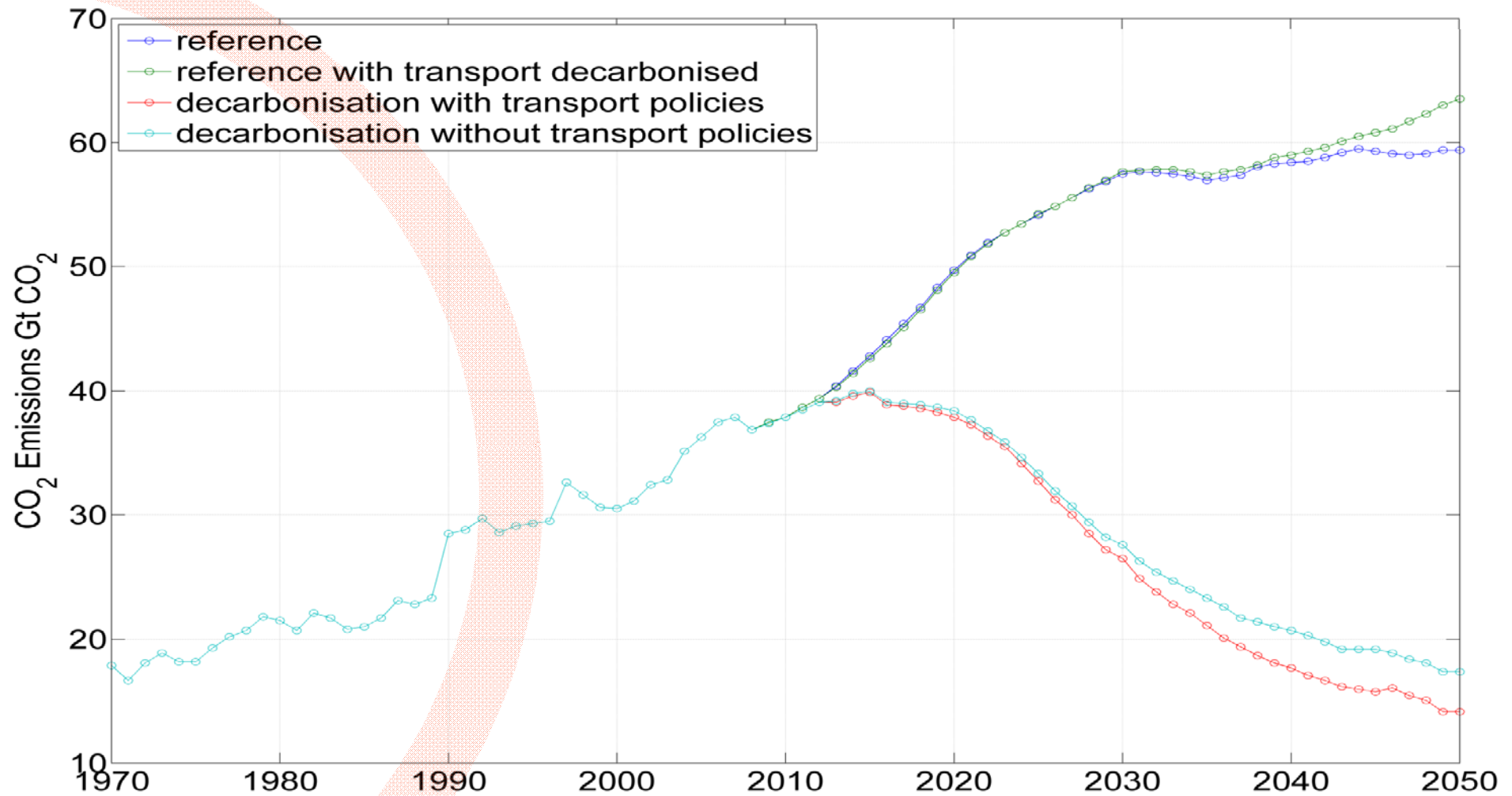
Average global carbon price 57 USD(in 2009 USD)

Additional investment and investment multiplier in 2020 in the decarbonisation scenario (billion 2000US\$)

| Region | Additional investment | Total investment |
|----------------|------------------------------|-------------------------|
| United States | 82.1 | 126.3 |
| European Union | 74.6 | 87.5 |
| China | 70.2 | 104.4 |
| RoW | 133.3 | 51.8 |
| of which OPEC | 15.6 | - 65.2 |
| World | 360.2 | 370.1 |

Source: E3MG modelling, Barker and Anger, 2012 – work in progress

Global decarbonisation



Source: E3MG modelling, Barker and Anger, 2012 – work in progress

Market-based measures alone cannot achieve the targets, but can incentivise changes in technologies and cause spillovers

The measures include regulation, government and private investment, removal of fossil fuel subsidies and recycling of auctioning revenues by reducing personal taxes

Carefully designed and coordinated policy portfolio can benefit global economy

International co-operation inevitable, however there will be regional differences

A portfolio of various climate policy measures are needed to decarbonise the global economy

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Thank you!

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