

Green Growth: Implications for Skills Development in TVET for Sustainable Development

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FIGURE 3
THE G20 LONDON SUMMIT AS A
GATE-KEEPER FOR SHORT-TERM
RECOVERY AND LONG-TERM GROWTH

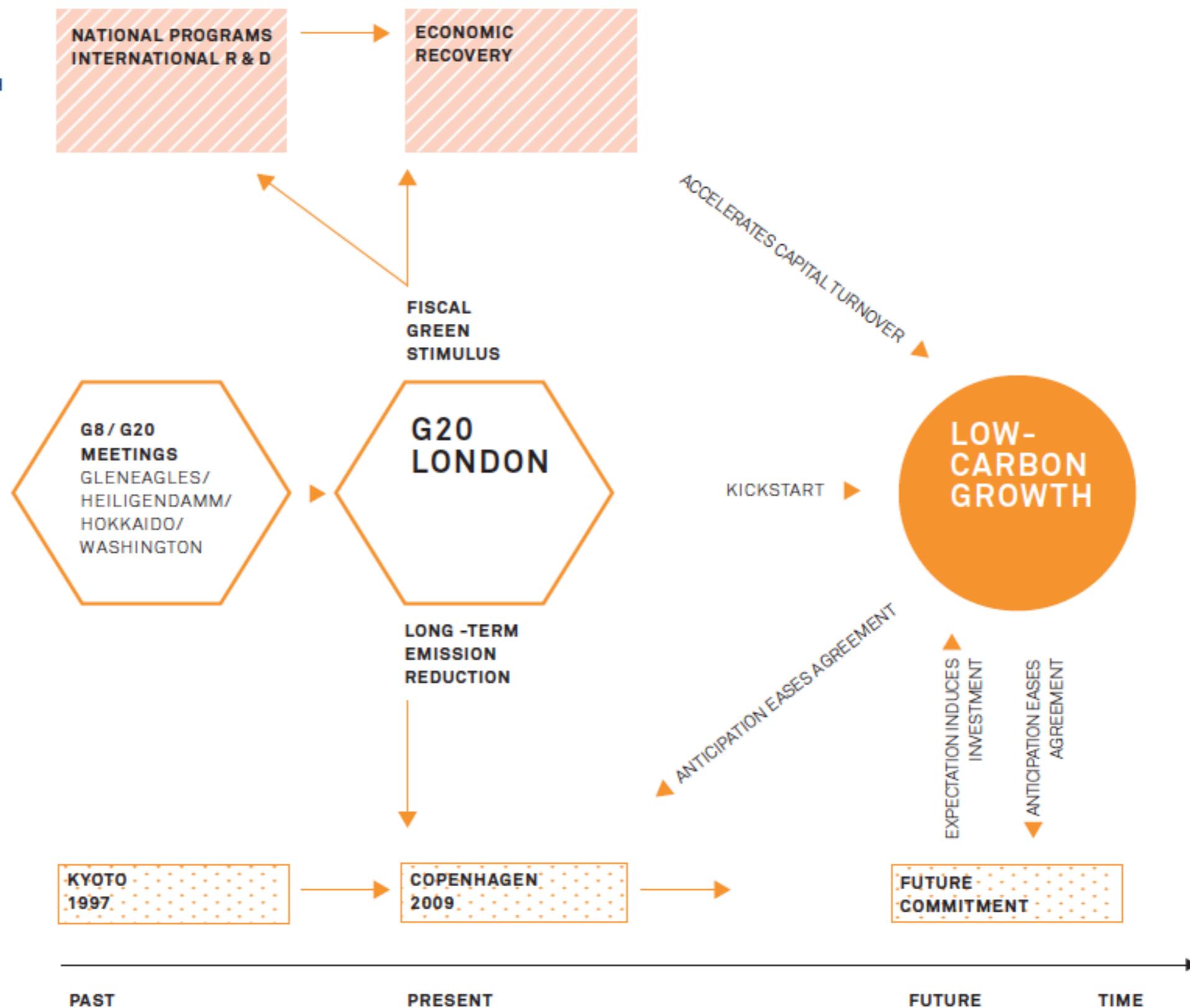
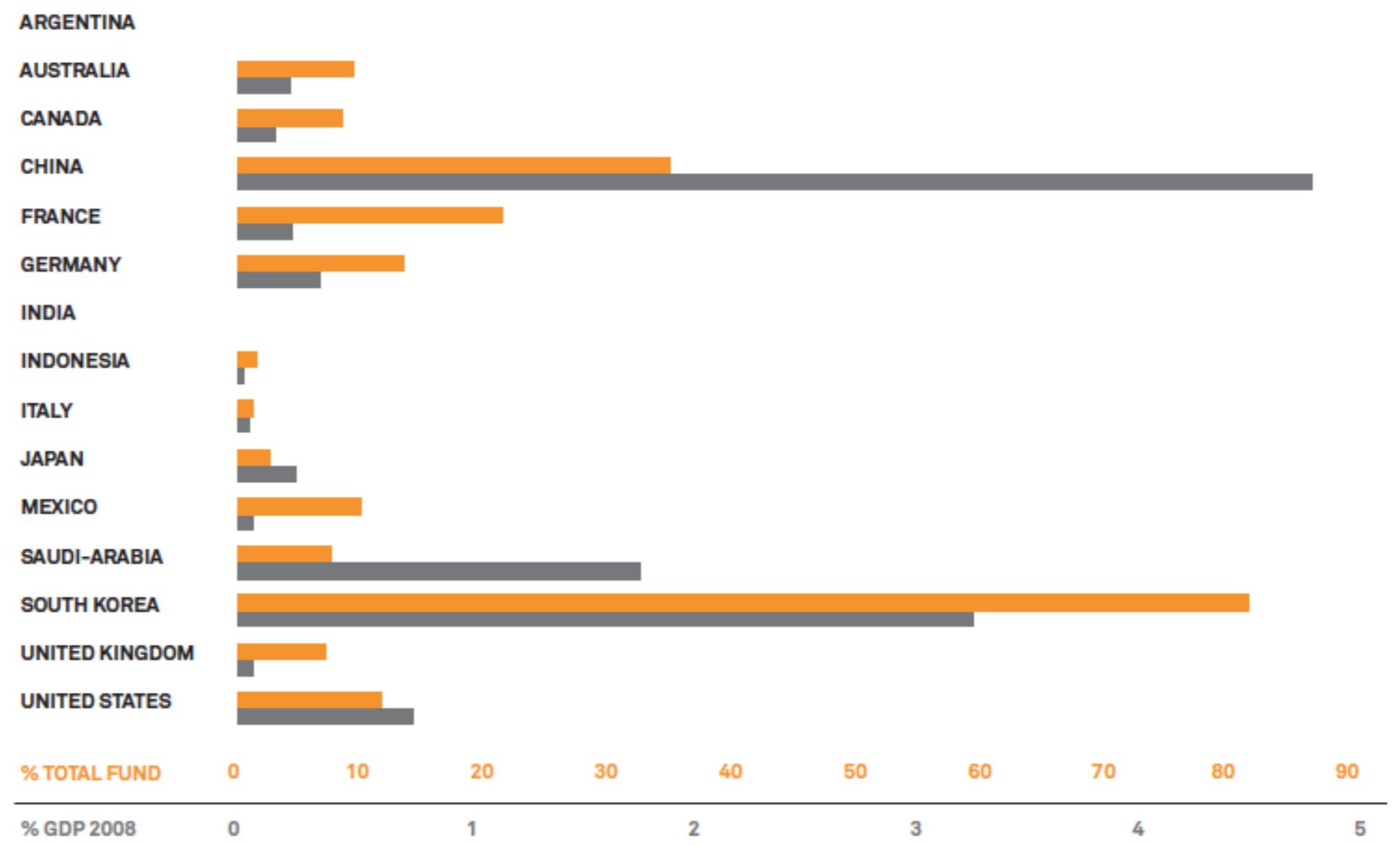
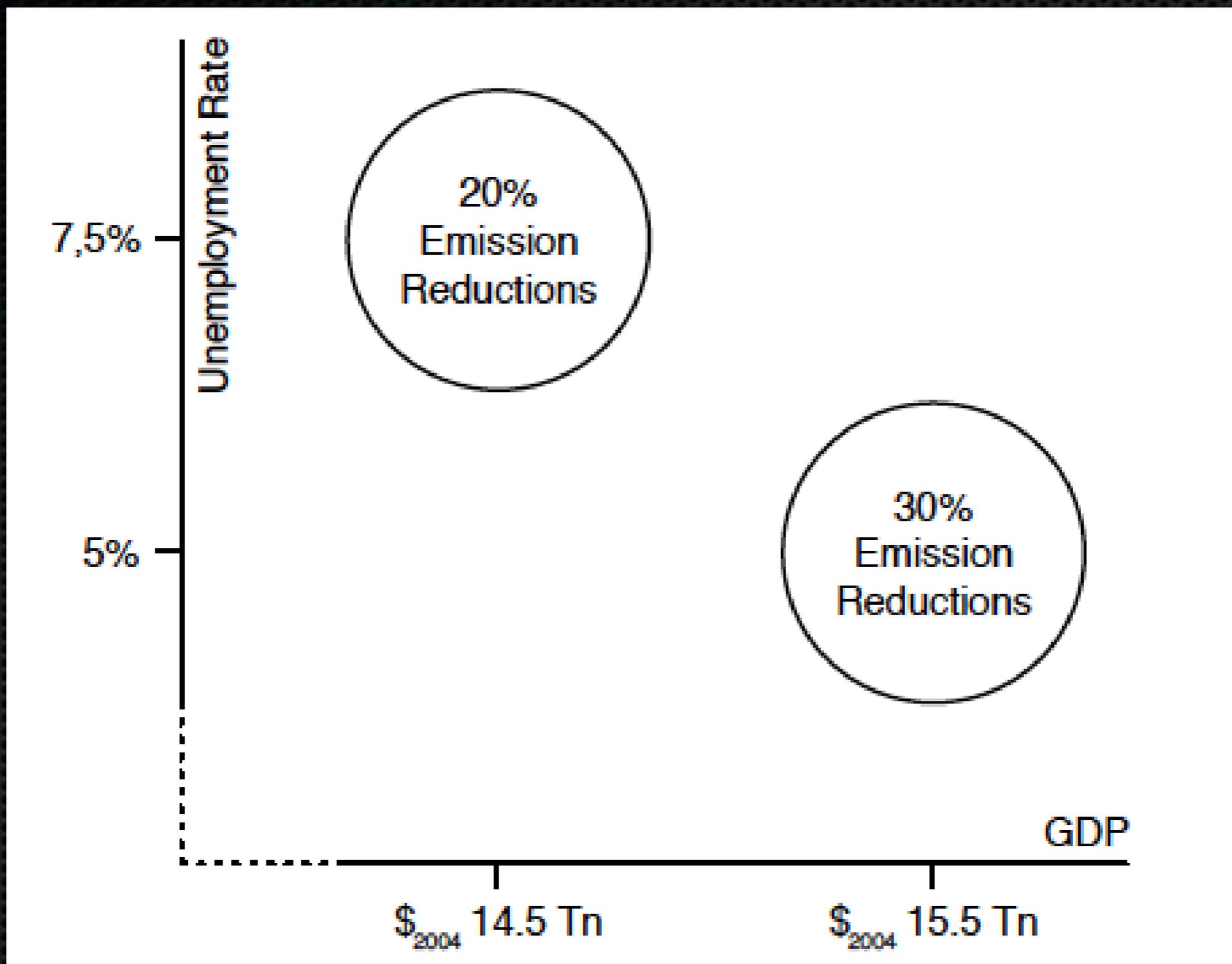


FIGURE 4
ANNOUNCED GREEN FUNDS AS SHARE
OF TOTAL FISCAL PACKAGE AND SHARE
OF YEAR 2008 GDP

ROBINS ET AL. (2009)
 AND OWN CALCULATIONS





Climate change will drive economic change



Action on climate change will create significant business opportunities as new markets are created in low-carbon energy technologies and other low-carbon goods and services. These markets could grow to be worth hundreds of billions of dollars each year, and employment in these will expand accordingly.



International
Labour
Office
Geneva



CEDEFOP

European Centre
for the Development
of Vocational Training

SKILLS FOR GREEN JOBS A GLOBAL VIEW



SYNTHESIS
REPORT
BASED ON
21 COUNTRY
STUDIES



**ADB - SKILLS FOR INCLUSIVE AND SUSTAINABLE GROWTH IN DEVELOPING ASIA-PACIFIC
INTERNATIONAL CONSULTATIVE FORUM 12-13 DECEMBER 2011**

Deep green jobs - specialized

- Renewable energy - invention, production, distribution, installation
- Waste, water & recycling
- Reforms in farming, horticulture, forestry & land management
- Building, construction and property management
- Green services in auditing, accrediting, accounting
- Sustainable textiles and fashion
- Green office practices
- Public transport

Light green jobs

- Potentially in every industry
- All workplaces & work practices have environmental impacts
- Innovation cost curve will reduce costs

Skills to build and retrofit energy efficient buildings (EEB)

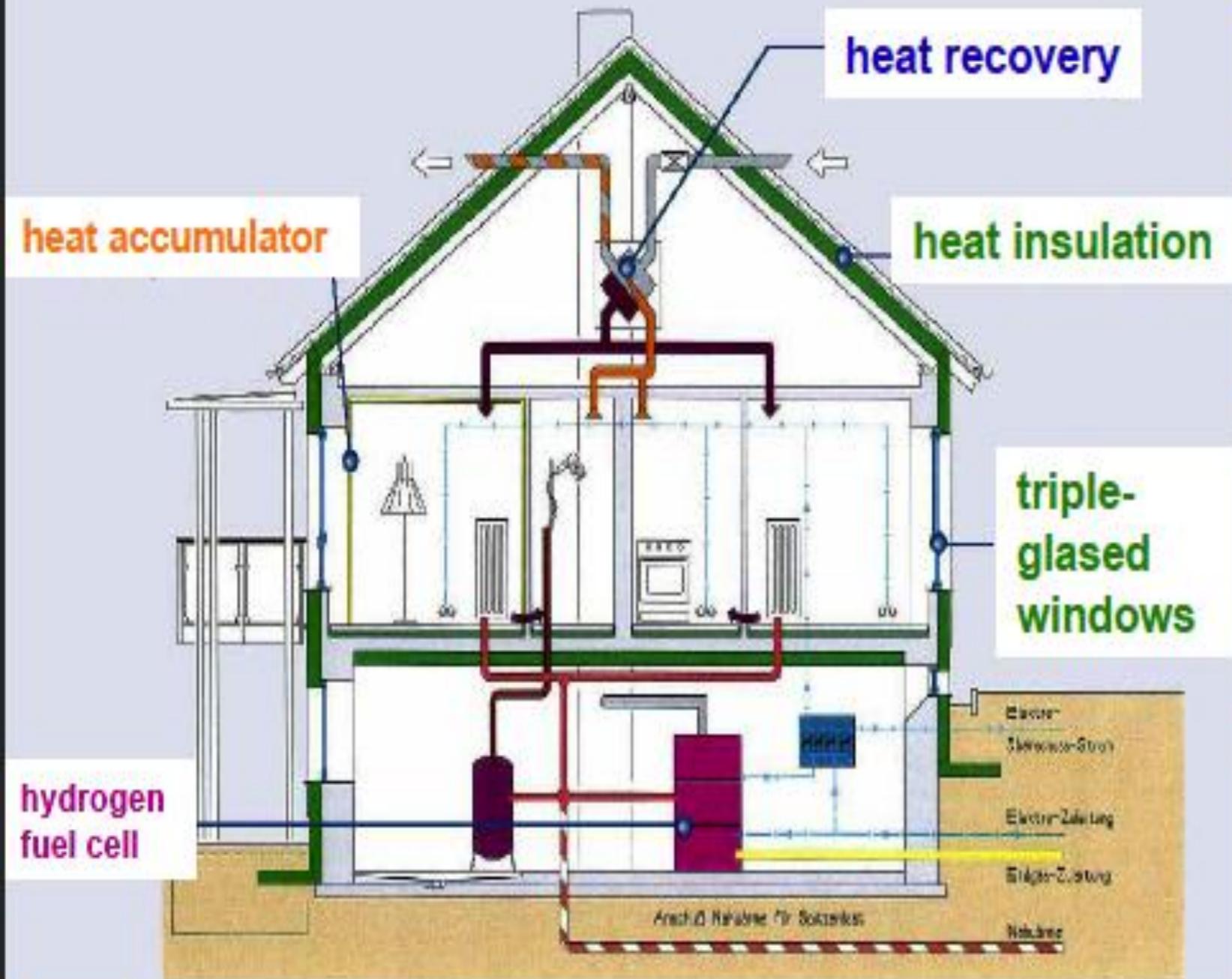
A need - and an opportunity

- 45% of all present carbon emissions come from existing buildings, with 27% from homes
- 87% of existing buildings will still be here in 2050

Skills for sustainable building must not be a specialism but a core part of every building related competency - from school based learning, through vocational college courses, to CPD.

Germany

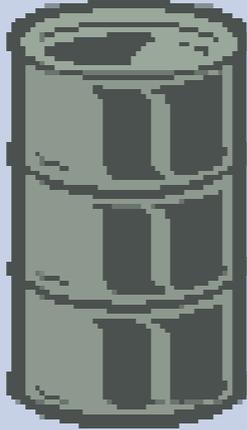
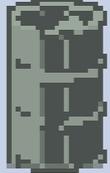
3-liter-house



concept:

- improvement by the **heat insulation** of buildings **roof, windows** and **walls**
- more efficient energy supply by replacement of condensing boiler, low temperature – heating boiler, **hydrogen fuel cells**
- increasing use of renewable energy supply, application of photovoltaic and solar thermal systems for self supply with electricity and hot water

3-liter-house

	unrenovated building	7-liter-house	3-liter-house
Energy consumption	 2000 l	 700 l	 300 l Faktor 1:7
CO ₂ -emissions	 6 t	 2,1 t	 0,9 t Faktor 1:7
heating costs	 1400 €	 500 €	 200 € Faktor 1:7



The “Alliance for Work and Environment” created over 200,000 jobs and reduced CO2 emissions by one million tons per annum in 2006-2008.

Emission savings and jobs created tripled in 2009-2010.

China

Green Economy and Green Jobs in China



Current Status and
Potentials for 2020

JIAHUA PAN, HAIBING MA, AND YING ZHANG

- Over 50 percent of all new buildings in the world are in Asia, mainly China.
- Construction and building operation (i.e. heating and cooling) represents almost 1/3 of China's total energy consumption.

EEB has huge potential for improving energy efficiency and creating employment, but know-how and skills is often lacking.

Australia

- Double glazed windows can cut heat loss by 30% but only 5% if installed in standard aluminium frames
- Solarhart predicts 200,000 new solar water heaters would prevent the need for a coal-fired power plant – but says there aren't enough installers
- Wind power capacity installation and maintenance in some states is nearly 100% foreign sourced
- Subsidies to convert cars from petrol to LPG foundered when skilled mechanics weren't available
- Coca Cola uses old fridge technology due to lack of skilled technicians and installation skills

GREEN GOLD RUSH

HOW AMBITIOUS ENVIRONMENTAL POLICY CAN MAKE AUSTRALIA A LEADER IN THE GLOBAL RACE FOR GREEN JOBS

"For environmental technologies to penetrate and succeed in global markets, it is important that they succeed domestically. Thus, well-designed environmental policies that spur innovation, and government measures that contribute to creating and consolidating domestic markets for environmental technologies constitute a basis for success in global markets."

- OECD, Environmental Innovation and Global Markets, 2008

AUSTRALIAN CONSERVATION FOUNDATION ACTU

Employment growth in EEB

Skill domains

- Building design, drafting
- Knowledge of new building products
- Sustainable construction techniques
- Installation & maintenance of new technologies
- Sales promotion of green options
- Waste minimization, recycling)

Sample occupations

Building designers, engineers

Supply chain managers

Construction & building trades, e.g. glaziers, plumbers, electricians, solar water and cooling

Financial and marketing professionals

Engineers

A proposed solution

Regional project on skills development for green jobs

Three aims

1. To develop knowledge about how the skills needed for employability in a low-carbon economy can be identified and developed in each country
2. To promote collaboration between industry and VET systems to identify implications for green skills
3. To develop and pilot a professional development framework through which the skills for a green economy among VET policy makers, managers and educators can be enhanced

A proposed solution

Regional project on skills development for green jobs

Project steps

1. Analyse industry data to identify carbon-vulnerable industries in each country as well as where new opportunities from climate change are emerging.
2. Identify (i) the occupations where new or reengineered jobs are being created (or need to be created) to meet the opportunities emerging in a low-carbon future; and (ii) the low-carbon and generic competencies required of employees in these positions and industries.
3. Discover approaches to professional development within cultural and VET contexts and adaptation of the approach to suit these contexts.