

ENGAGING *PRIVATE SECTOR INVESTMENT* AT SCALE FOR CLIMATE CHANGE MITIGATION IN EMERGING ECONOMIES

**Insights from a GtripleC Project funded
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Developed by Murray Ward

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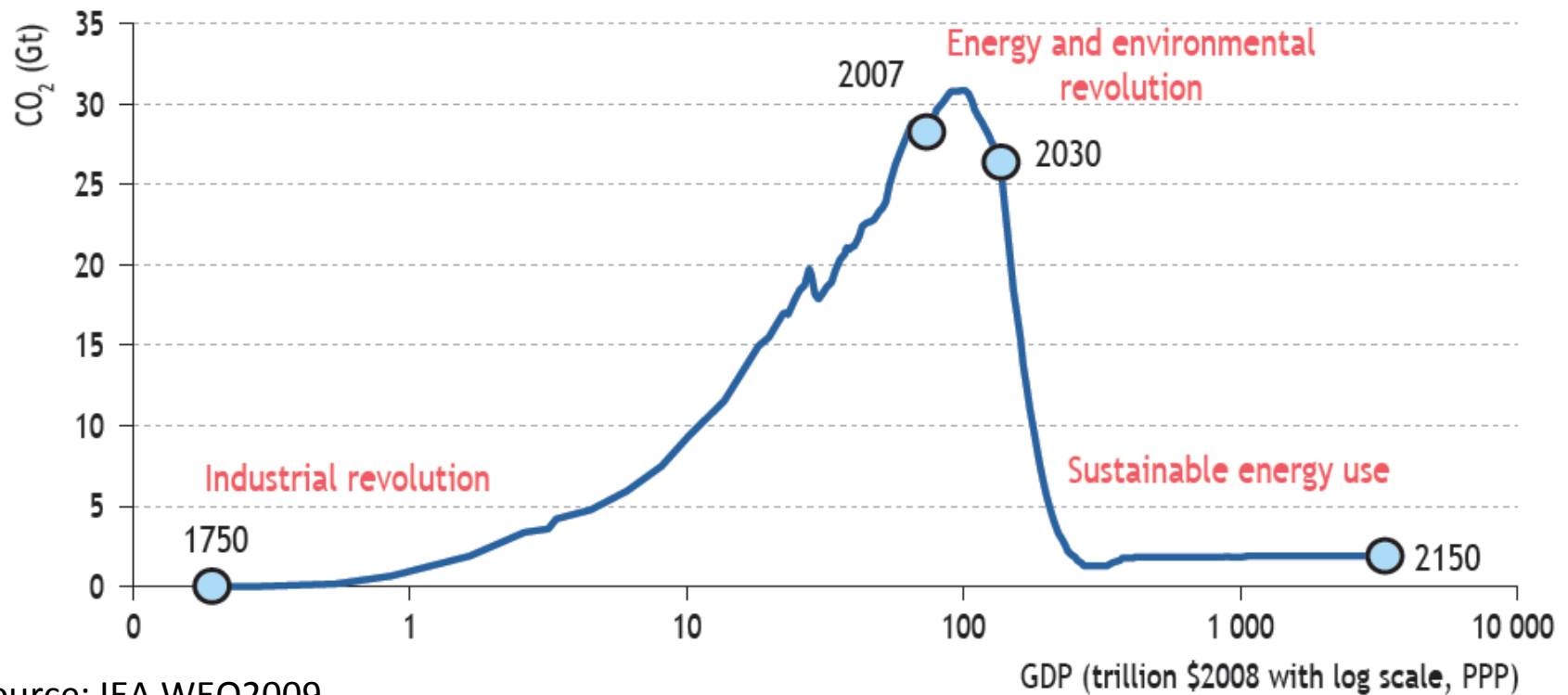
GtripleC
www.GtripleC.co.nz

Framing the mitigation challenge

- **OVER \$4 TRILLION** from 2010-2020incl
 - 2.2 trillion in zero and low carbon power generation
 - Over 2 trillion in energy efficiency
- **OVER \$10 TRILLION** from 2021-2030incl
 - 4.5 trillion in zero and low carbon power generation
 - Over 5.5 trillion in energy efficiency
- **AND THIS JUST IN THE ENERGY SECTOR**
- **DOESN'T INCLUDE AGRICULTURE OR FORESTS**

Investment is critical to 2°C

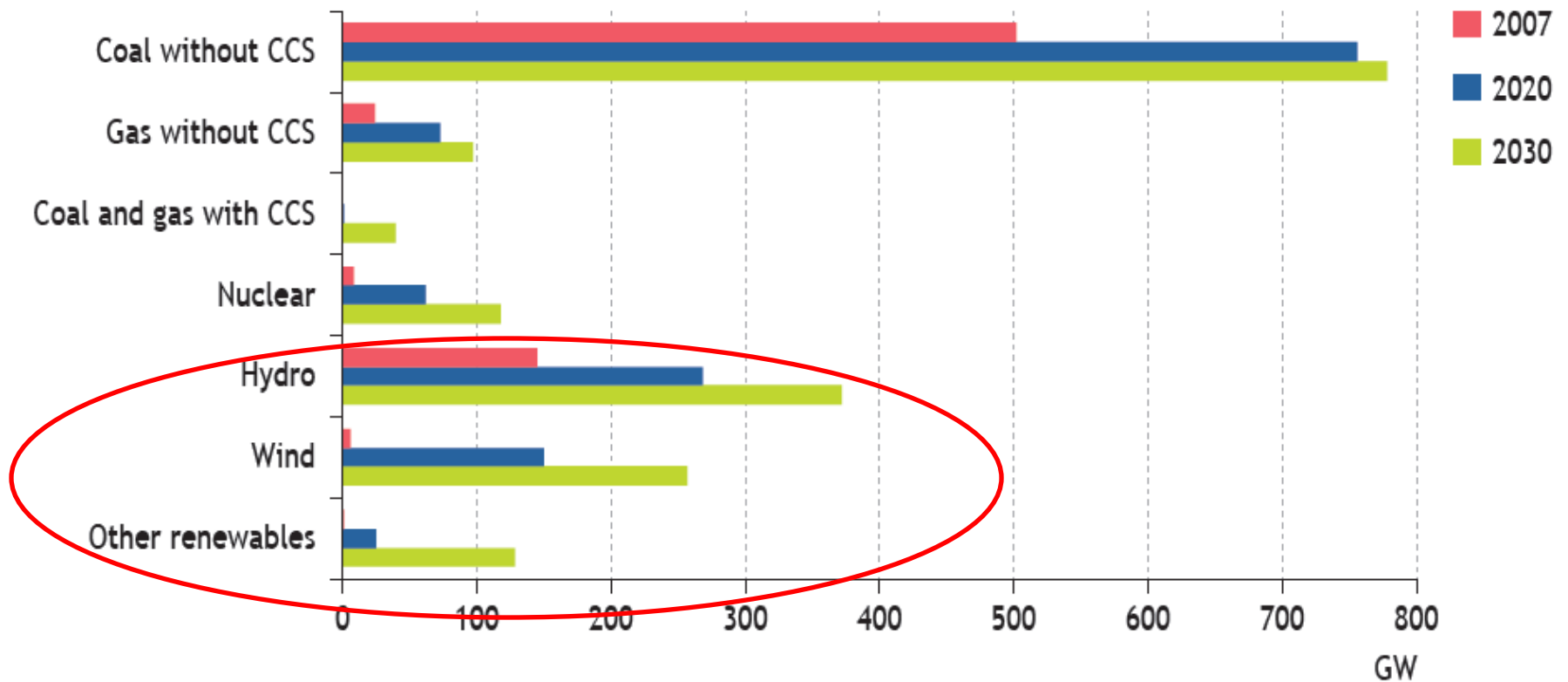
- In the coming decade we need to shift trillions of dollars of investment from a (6°C) business as usual path to a 450 path. IEA call this “a revolution”but say it is possible.



Source: IEA WEO2009

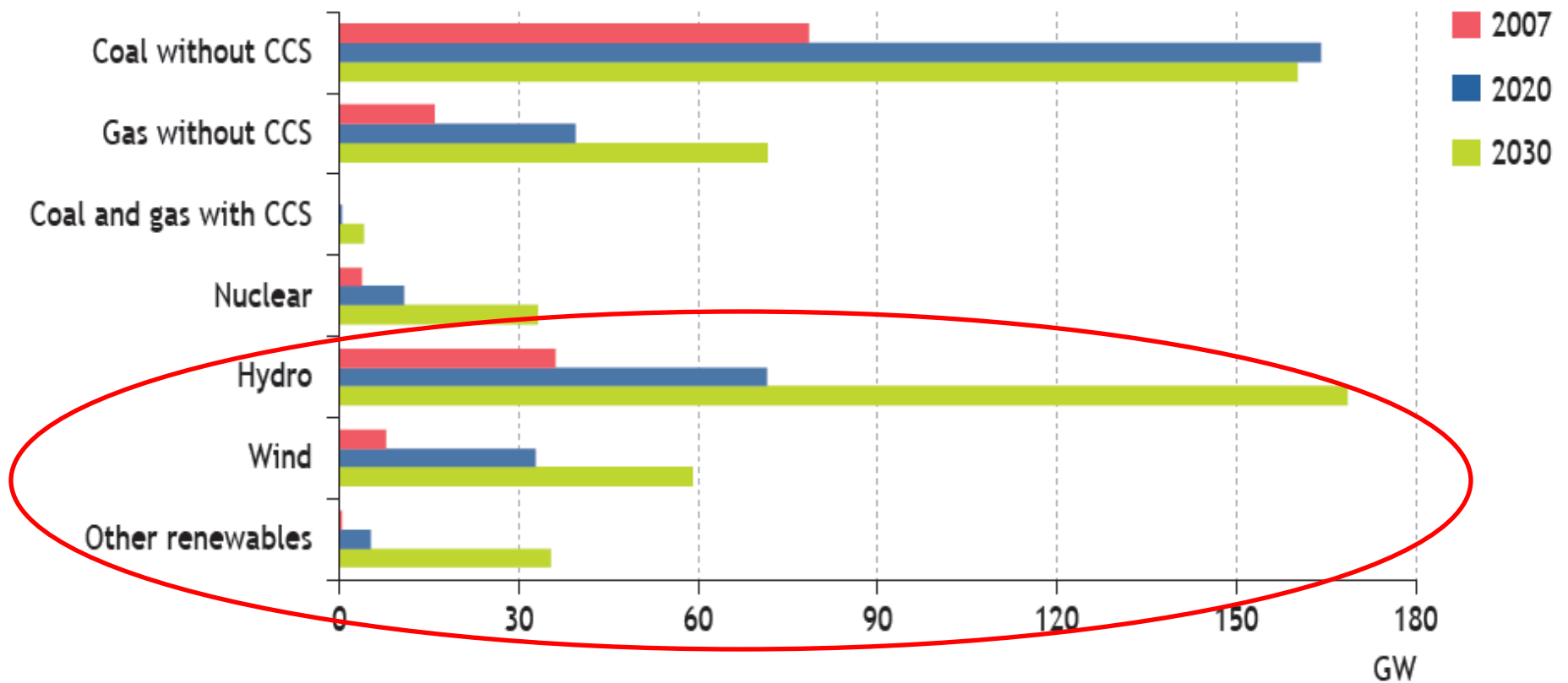
In power generation in China

Power generation capacity in the 450 Scenario, GW



Source: IEA WEO2009

...and in power generation in India



What does a 1 GW increase mean?

oting increase from 2007 in “wind and other renewables ” is

- n China, ~ 170 GW by 2020, 375 GW by 2030

	Size, MW	# Plants for 1 GW
Coal	1000	1
Gas	500	2
Nuclear	1000	1
Hydro - Small scale	10	100
Wind - on shore	50	20
Wind - off shore	300	3
Biomass-large	200	5
Biomass-small	10	100
Solar without thermal storage	50	20
Solar with thermal storage	15	67

Finance Needs, Demands and Offers

- Needs for mitigation and adaptation in developing countries in the tens to hundreds of billions per annum – depending on whose numbers you listen to
- Developing countries want fund-based mechanisms, fed by public sources from developed countries
- “Copenhagen Accord”offers
 - ‘Fast Start’ \$30bn over 2010 2012
 - Goal of \$100 bn pa in 2020 “from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance”

Framing the investment challenge

- **~\$5 TRILLION** by 2020means
 - ~ 2 trillion in equity finance
 - ~ 3 trillion in debt finance



Climate Change Mitigation Policy

**Through the lens of project
finance and investment**

Hurdles for “green path” projects

- Compared with “brown path” projects providing the same services

THINGS FAVOURING BAU:

- Mature technology, achieved economies of scale
- Installation scale
- System interconnections in place
- Past experience (so ‘cookie cutter’ savings)
- Risks well understood and managed
- Known and supporting regulatory environment
- Subsidies endemic

THINGS DISFAVOURING ‘LOW C’ ALTERNATIVE:

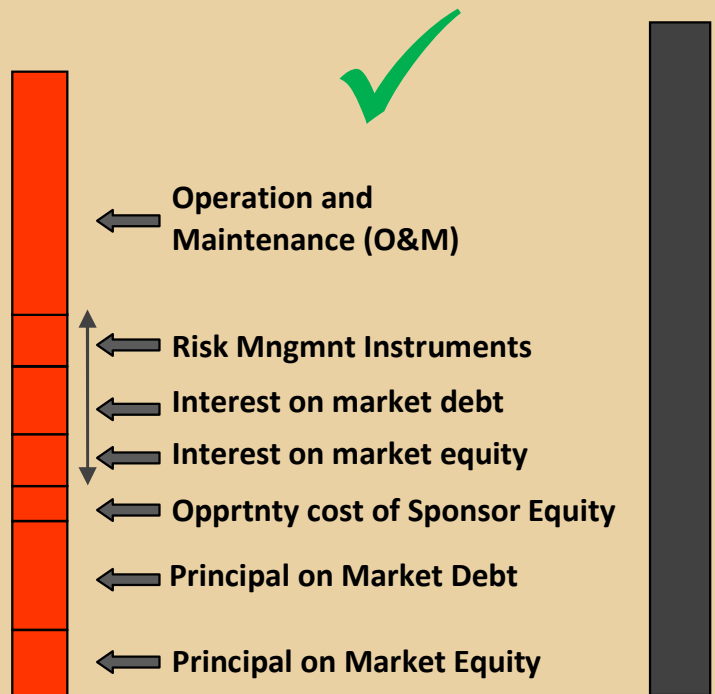
- New(ish) technology, yet to achieve potential economies of scale
- Smaller scale installations
- System interconnections not in place
- Limited past experience (so system-wide learning curve costs)
- Risks not understood, still to be managed
- Supportive regulatory environment yet to be put in place
- Subsidies not yet in place (or contemplated)

Financing green (or brown) projects

THINGS FAVOURING BAU:

- As-built capital expenditure (capex) costs lower
- Interest on market equity and market debt finance lower – because lower capex costs being financed and at lower interest rates because perceived risks lower
- Cost of risk management financial instruments (for policy risk, currency exchange risk, other project risks) lower – because lower capex costs being financed and perceived risks lower
- But cost of operation and maintenance higher

COSTS

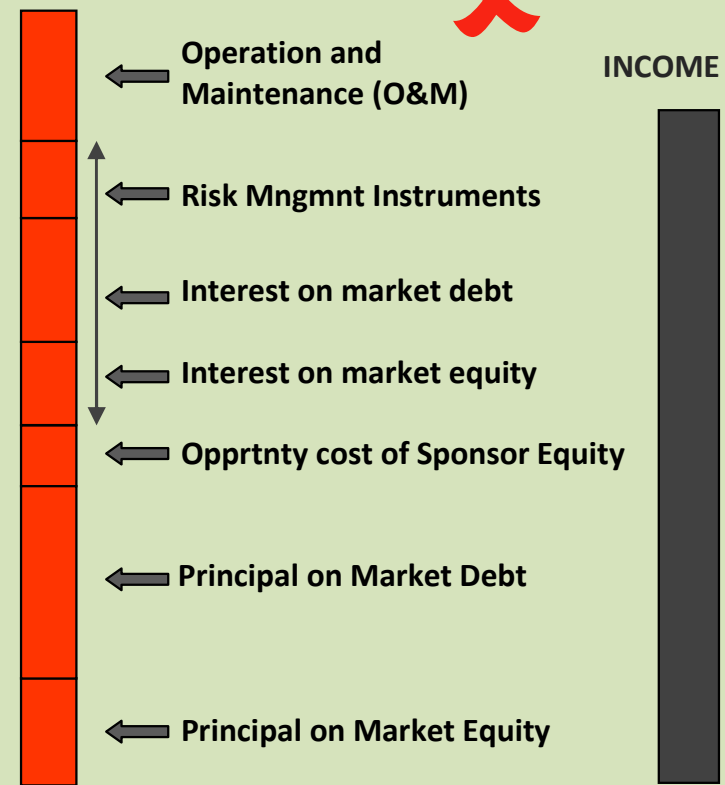


THINGS DISFAVOURING 'LOW C' ALTERNATIVE:

OPPOSITE OF ALL THESE

i.e. replace "lower" with "higher" (and one higher with lower)

COSTS



Is the policy gem under a different rock?

- Over the last fifteen years, climate policy makers have stressed, in particular, the importance of introducing a cost of carbon emissions into market prices of energy and other carbon-intensive commodities and products. (But struggled to get it.)
- However, the potential effect of carbon pricing and carbon market policy on total project costs (*capex* plus cost of finance) rather pales by comparison to the effect that major changes in the cost of capital could have if applied preferentially on the green side. Yet this potential has received very little attention by climate policy makers, thus far.

Standard climate policies and “the green gap”

- How are the elements of cost and income affected by:
 - Removing fossil fuel subsidies
 - Providing ‘green side’ incentives
 - Carbon pricing and carbon markets
 - Declaring carbon and climate risks

- Risk is key to costs of capital and total cost so closing the green gap

Risk Clouds



Rolling away the Risk Clouds



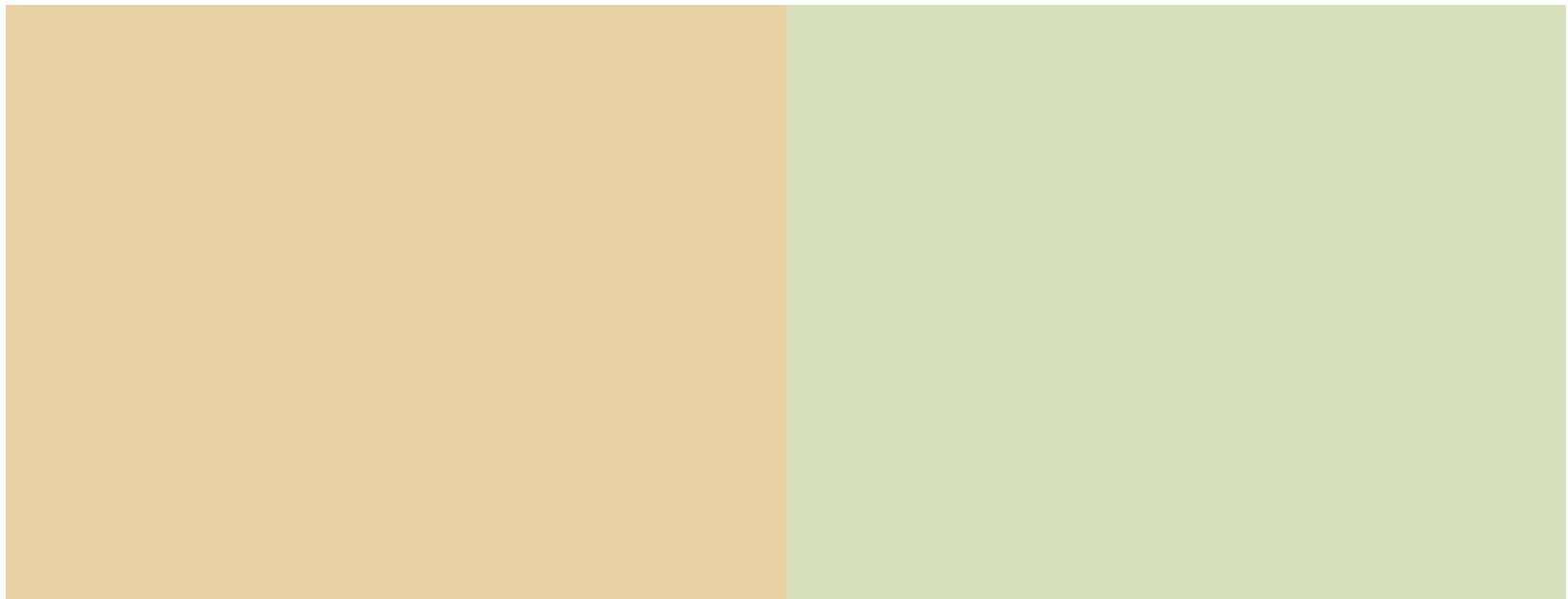
Rolling away the Risk Clouds



Rolling away the Risk Clouds



Rolling over the Risk Clouds



Rolling over the Risk Clouds



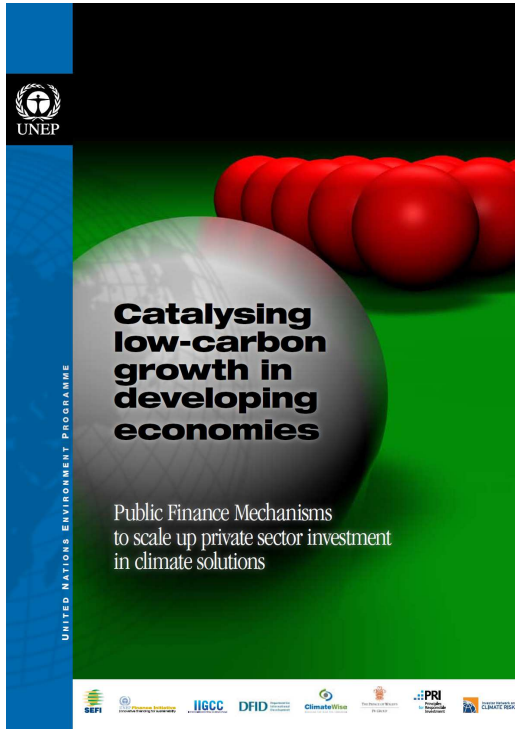


**IT'S NOT WHAT COSTS MORE OR LESS
THAT MATTERS IN THE END**

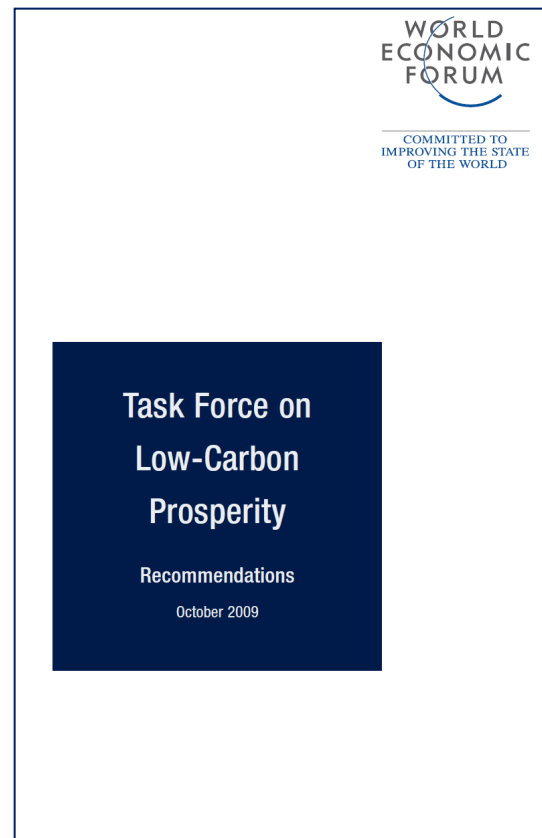
IT'S WHAT CAN GET FINANCED (FIRST)

Examples of new and innovative ideas

UNEP FI



World Economic Forum



Nicholas Stern / LSE



Key messages from these “idea leaders”

- We know where the money is, and is not.
- There is enough money to achieve the mitigation task – in developed and developing countries.
- We just need to unlock it.
- The private sector can't do this alone. It needs the public sector to set the framework and play its role within this framework. This involves governments of both developed and developing countries.

KEY QUESTION

Is it possible through smart and targeted public sector interventions (policies and finance mechanisms) to sufficiently lower the risk environment of green investments in infrastructure in developing countries to enable lower cost-of-capital finance from institutional investors to be attracted at scale?

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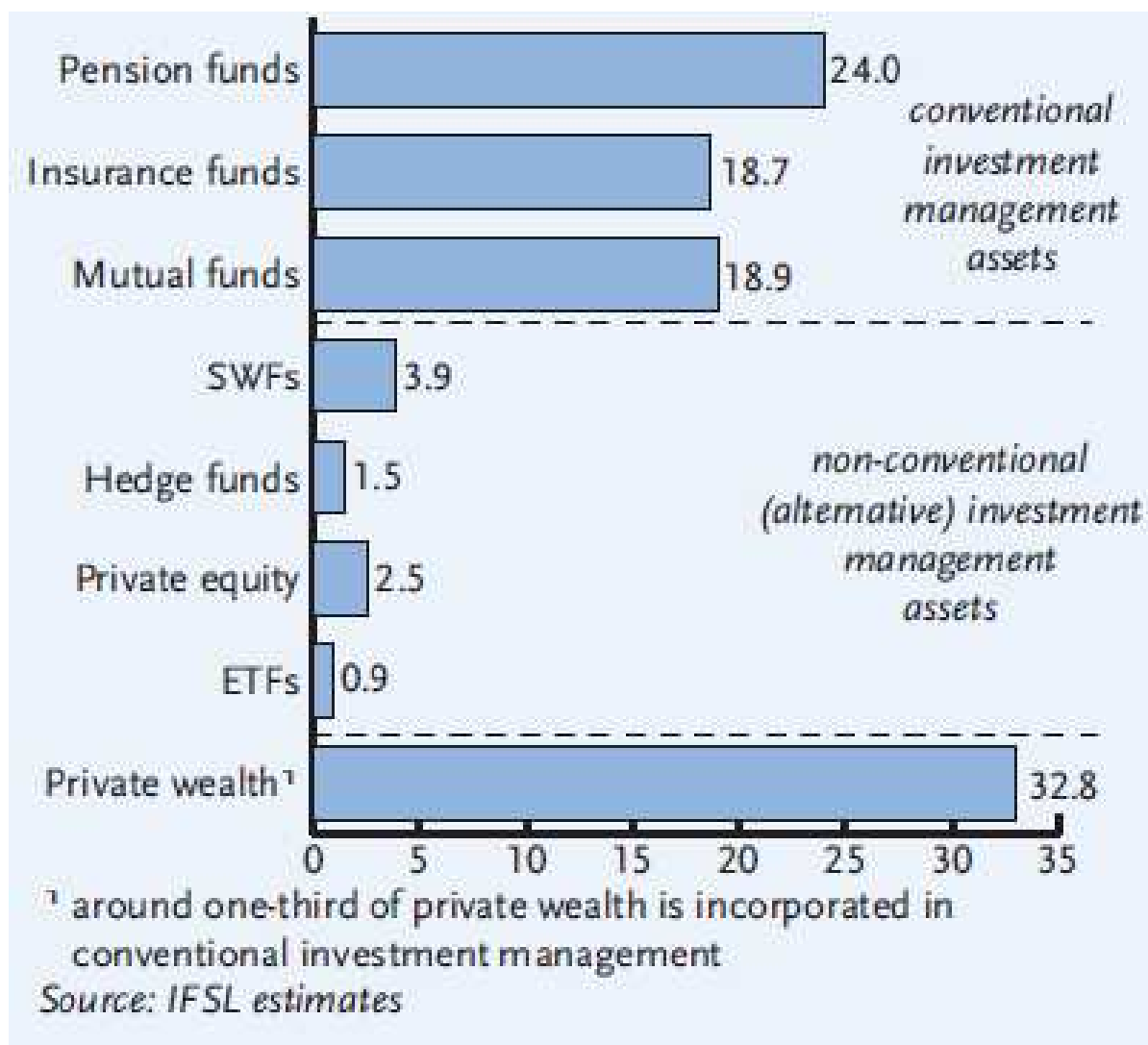
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Why Institutional Investor Capital?

Because here's where trillions of \$s are



BUT and it's a big one!

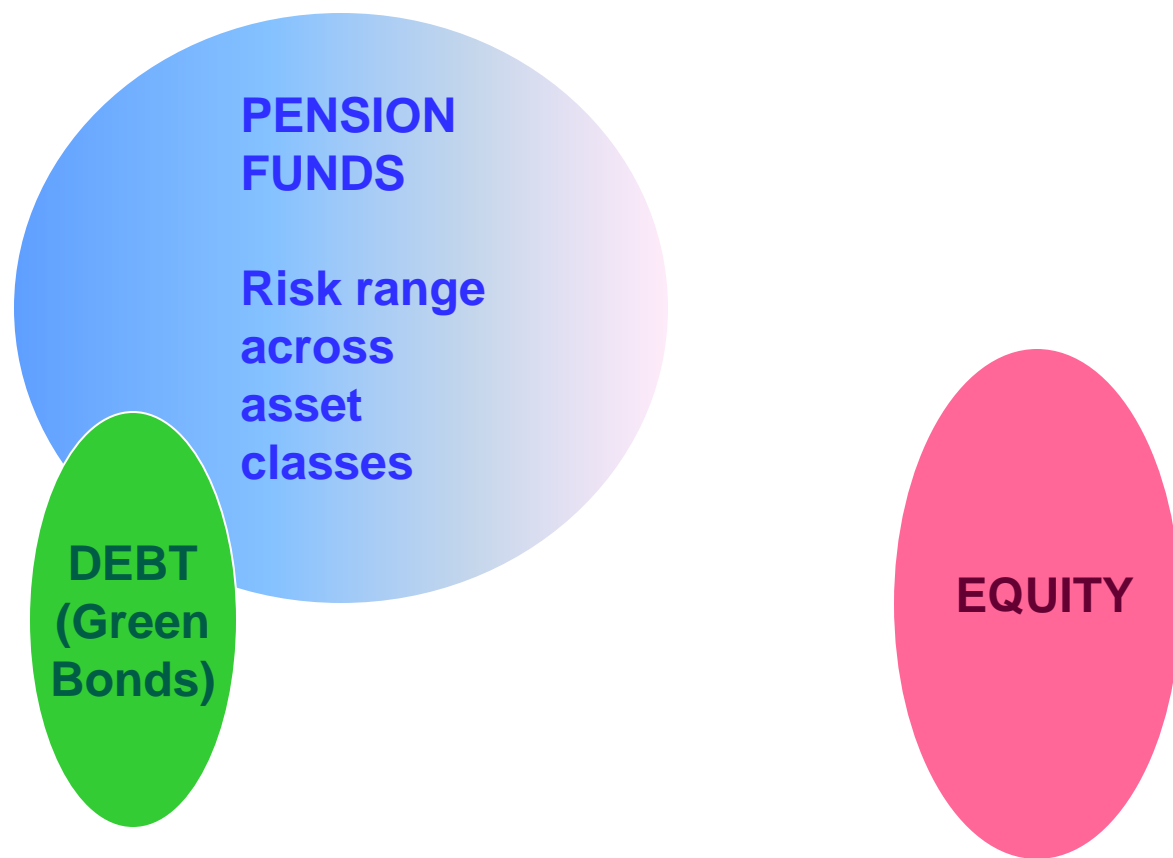
- Most institutional investors are looking for predictable rates of return, commensurate with energy infrastructure investing (particularly pension funds whose investment requirements are for long term investment horizons to match their long term predictable pension liabilities)
- However, a gap exists between the risk/return expectations of such investors and the risk/return characteristics of clean energy and low carbon technology and infrastructure projects, especially in emerging developing country markets
- Need a comprehensive “de-risk” programme

“De-risk elements” a beginning menu

- Host country policies that specifically and directly are supportive of investments in these sectors, including needed support for these to be implemented
- Political and policy risk insurance
- Mechanisms to address foreign currency exchange risk
- In-depth capacity building of relevant public and private institutions and groups that are instrumental to the success, or otherwise, of investments in these sectors in these countries

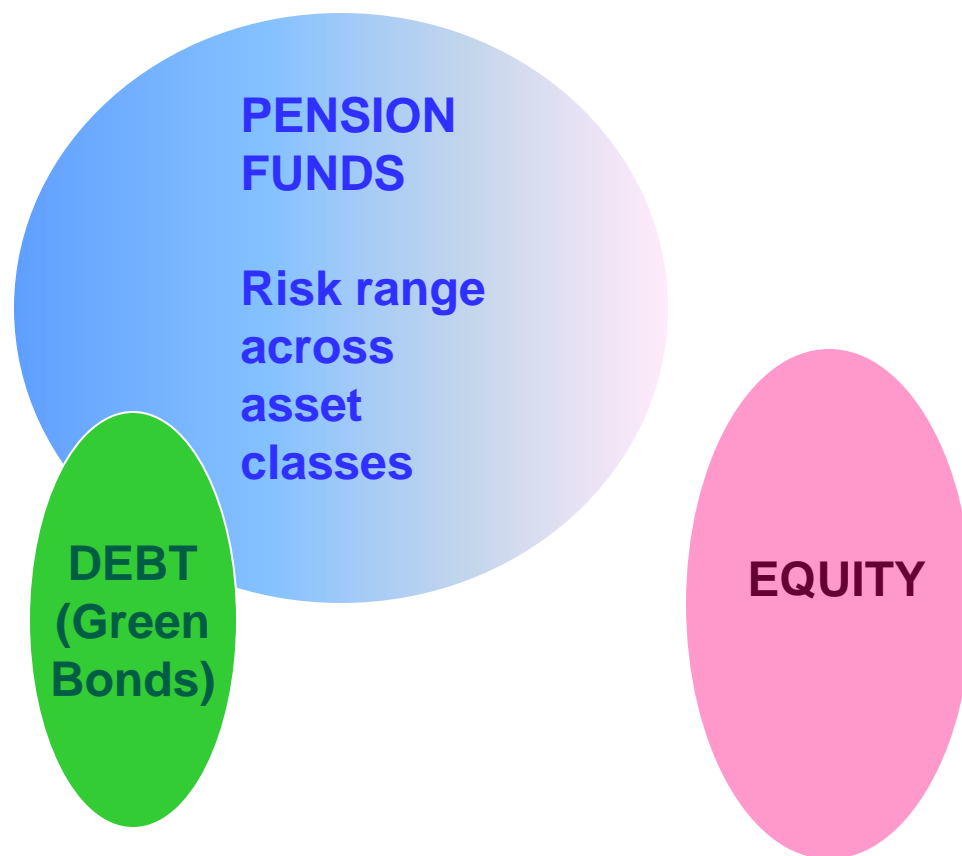
Pension Funds and Green Investments

Closing the risk spread



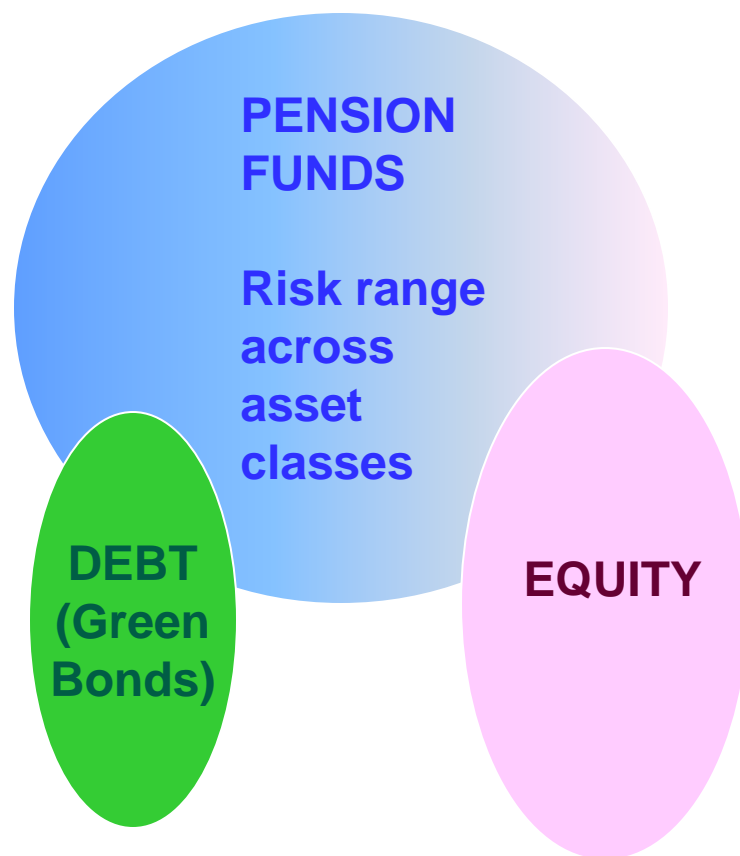
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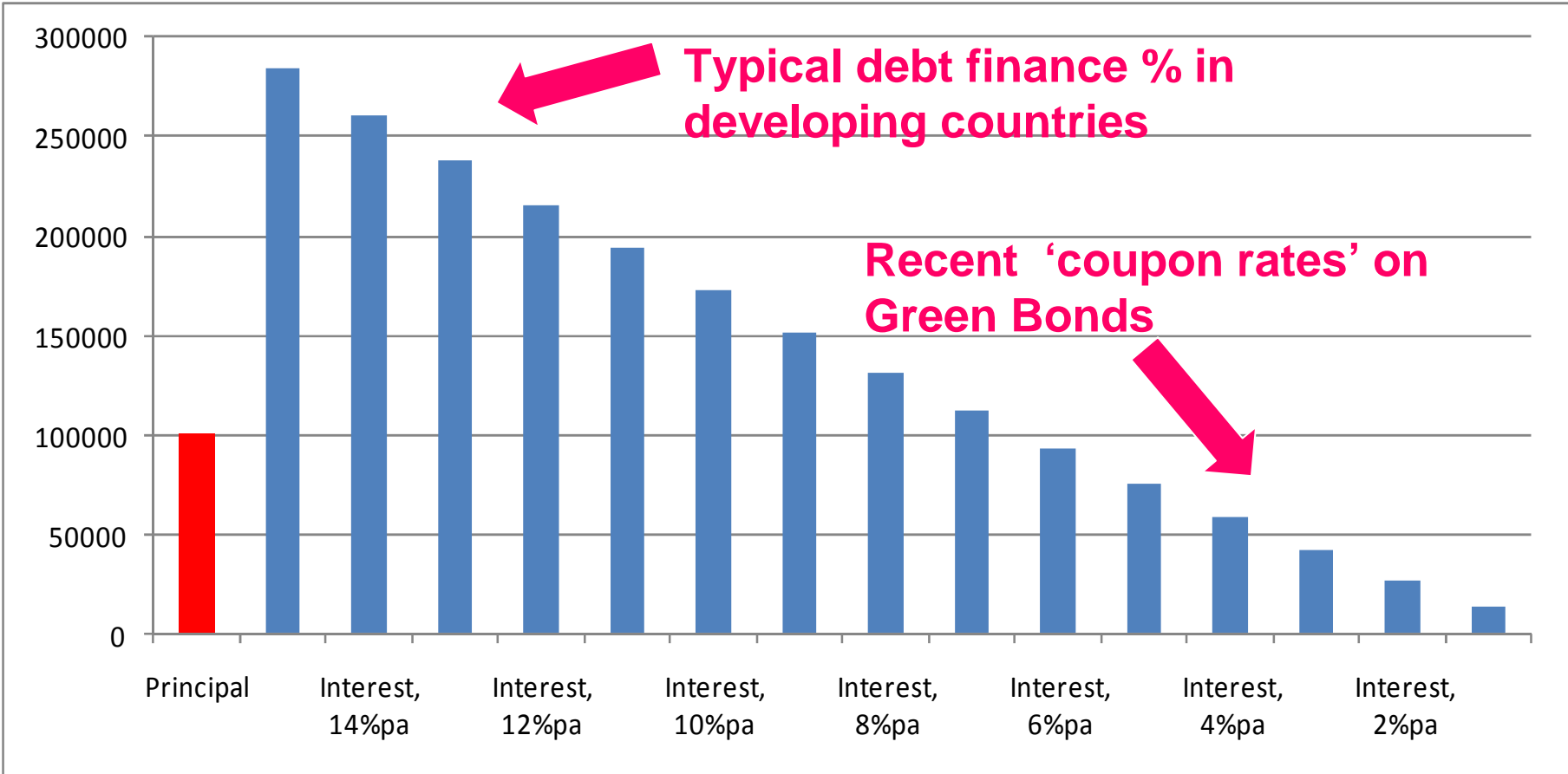
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Closing the risk spread



Cost of capital and the 'green gap'

DEBT side

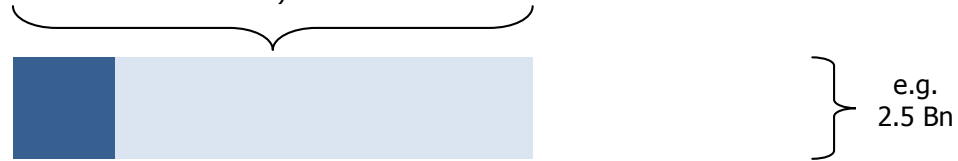


A two tier public-private fund for EQUITY

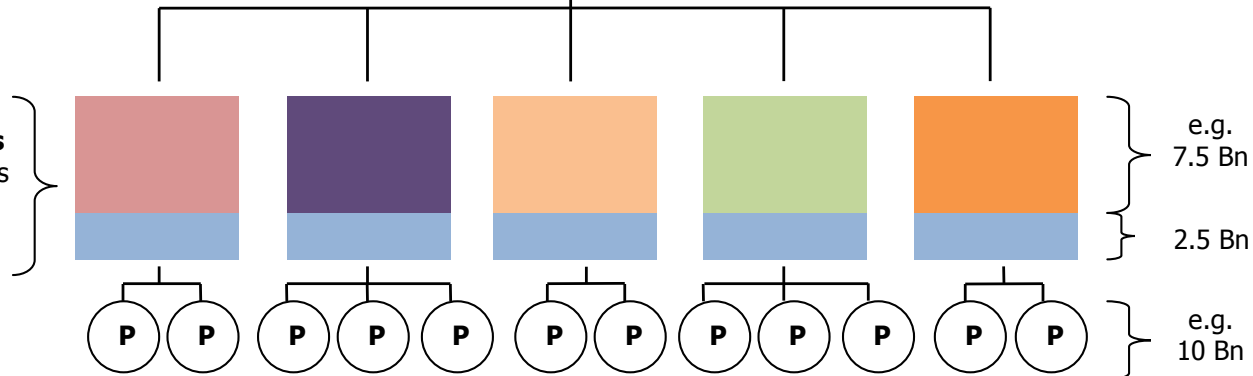
De-risk package
'wrapping'

Top Fund

- Public (e.g. 20% - from Govts, MDBs)
- Private (e.g. 80% - from Institutional Investors)



Top Fund seeds
in-region managed funds
that raise additional investors
and invest their funds in
Projects and Programmes



THANK YOU

Further information:

murray.ward@gtriplec.co.nz

www.GtripleC.co.nz



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