

The Challenge of Institutional Investment in Renewable Energy

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Climate Policy Initiative (CPI) is dedicated to the analysis of the effectiveness of policies relevant to climate change

Climate Policy Initiative (CPI) is a global policy effectiveness analysis and advisory organization

Our mission is to assess, diagnose, and support nations' efforts to achieve low-carbon growth

We seek to understand the impact of institutions, finance, and private firms on policy and program effectiveness

CPI's headquarters are in the United States, and we have regional offices and programs in Brazil, China, Europe, India, and Indonesia

Summary of Findings

Institutional investors are a very important segment of potential investors in renewable energy

The impact of institutions depends on what they invest in and how they invest

Investment in renewable energy projects provides the best opportunity to lower renewable energy financing costs, but also suffers the most serious investment barriers

There is no single solution to these barriers - we have identified five ways forward

Policymaker questions over the role of institutional investment in clean energy and infrastructure drove our analysis

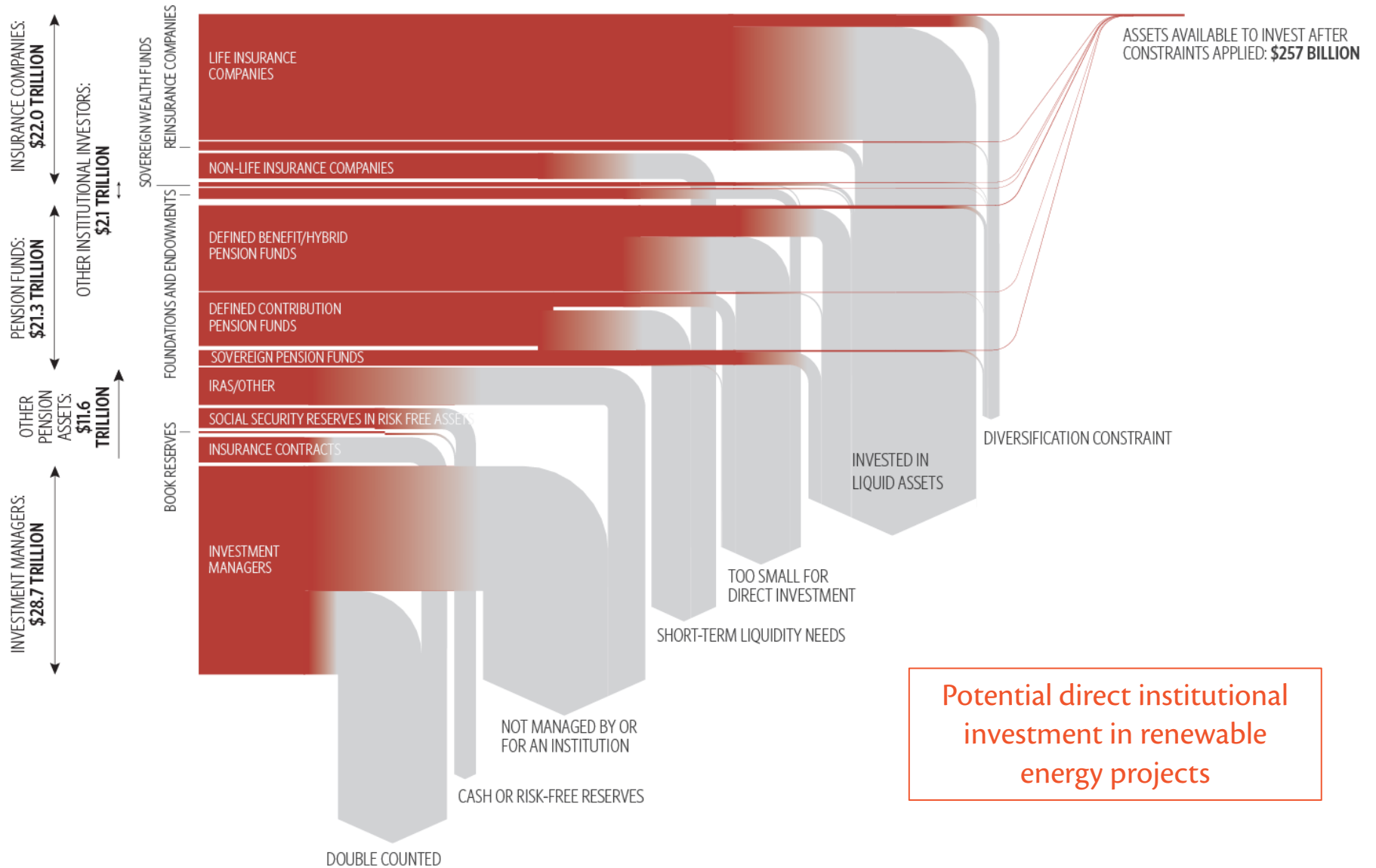
1. Can institutional money help relieve a shortage of investment in renewable energy?
2. Can institutional investment help reduce the cost of financing renewable energy?
3. What should be the role and impact of government policy?

Working with our partners, we addressed these questions through interviews with institutional investors, modeling and analysis

The answers differ depending on the type of institutional investor, and what investment vehicle they choose to invest in and how

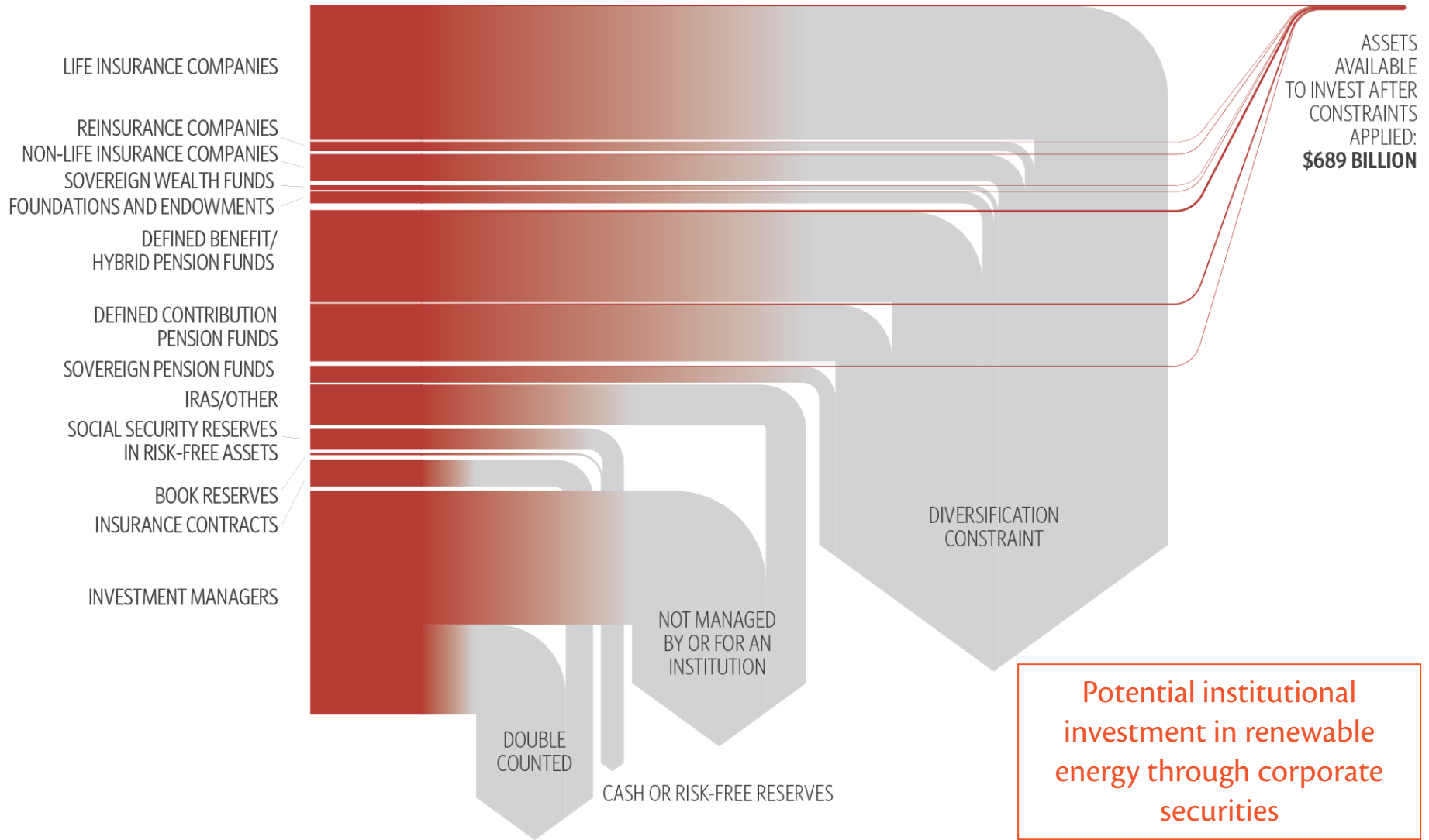
Who are institutional investors	Types of investment assets	Investment Channels
<p>Insurance companies (\$22 Trn)</p> <ul style="list-style-type: none"> - Life, reinsurance - Property and casualty <p>Pension funds (\$21.3 Trn)</p> <ul style="list-style-type: none"> - Defined benefit - Defined contribution <p>Other pension assets (\$11.6 Trn)</p> <ul style="list-style-type: none"> - Pension reserve funds - IRAs, insurance contracts, etc. <p>Foundations and Endowments (\$1.5 Trn)</p> <p>Sovereign wealth funds (\$587 Bln)</p>	<p>Investment in Corporations (38%)</p> <ul style="list-style-type: none"> - Equity (Shares) - Debt (Bonds) <p>Project equity (23%)</p> <ul style="list-style-type: none"> - Levered - Unlevered (whole asset) <p>Project debt (39%)</p>	<p>Direct investment</p> <ul style="list-style-type: none"> - In corporate securities - In projects <p>Through intermediaries</p> <ul style="list-style-type: none"> - Investment managers - Private equity funds - Infrastructure funds - Other pooled investment vehicles

Illiquidity, size constraints, and diversification requirements limit direct investment in renewable energy projects

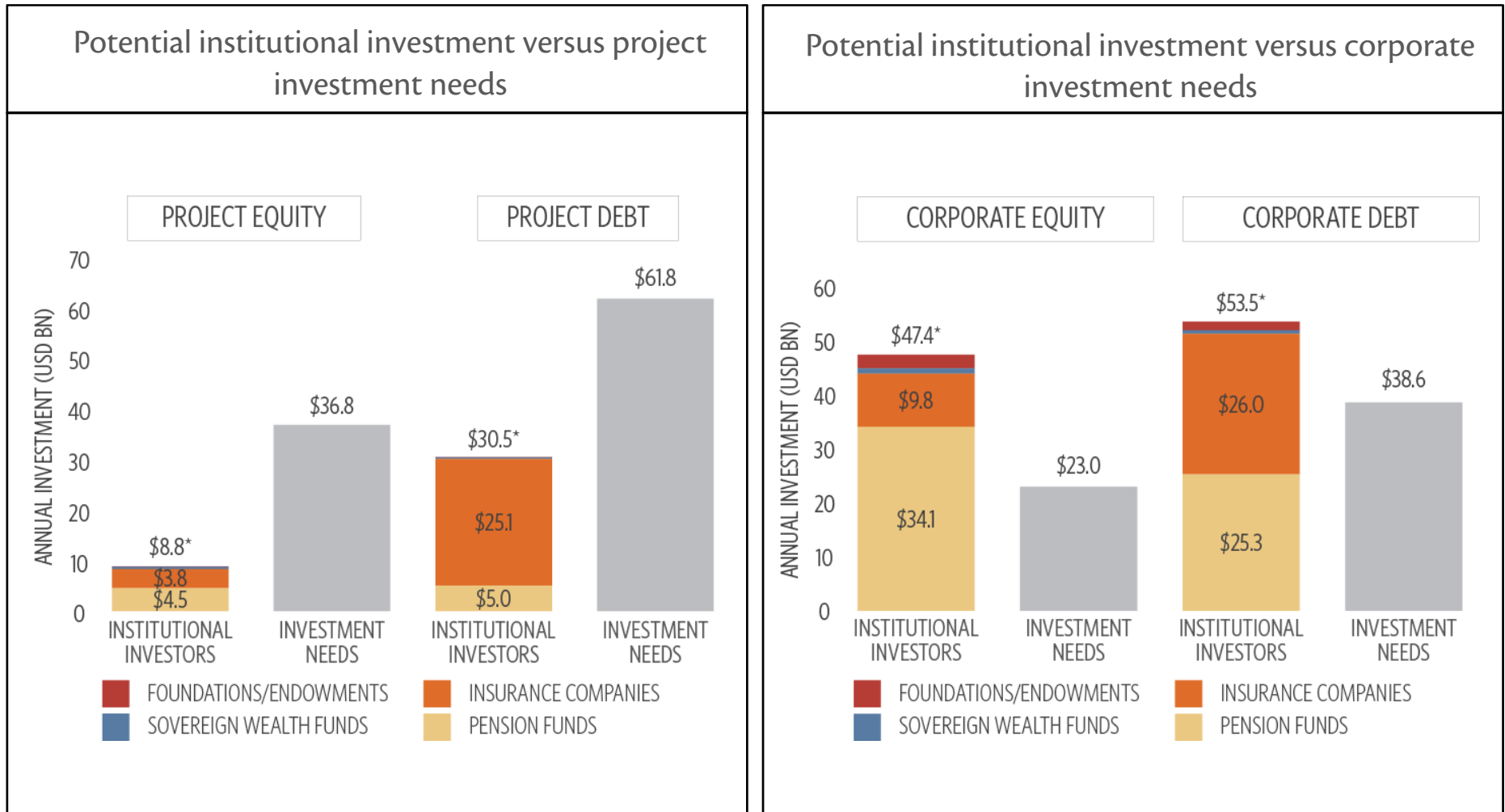


Potential direct institutional investment in renewable energy projects

Fewer factors limit investment in corporations that then flow through to renewable energy

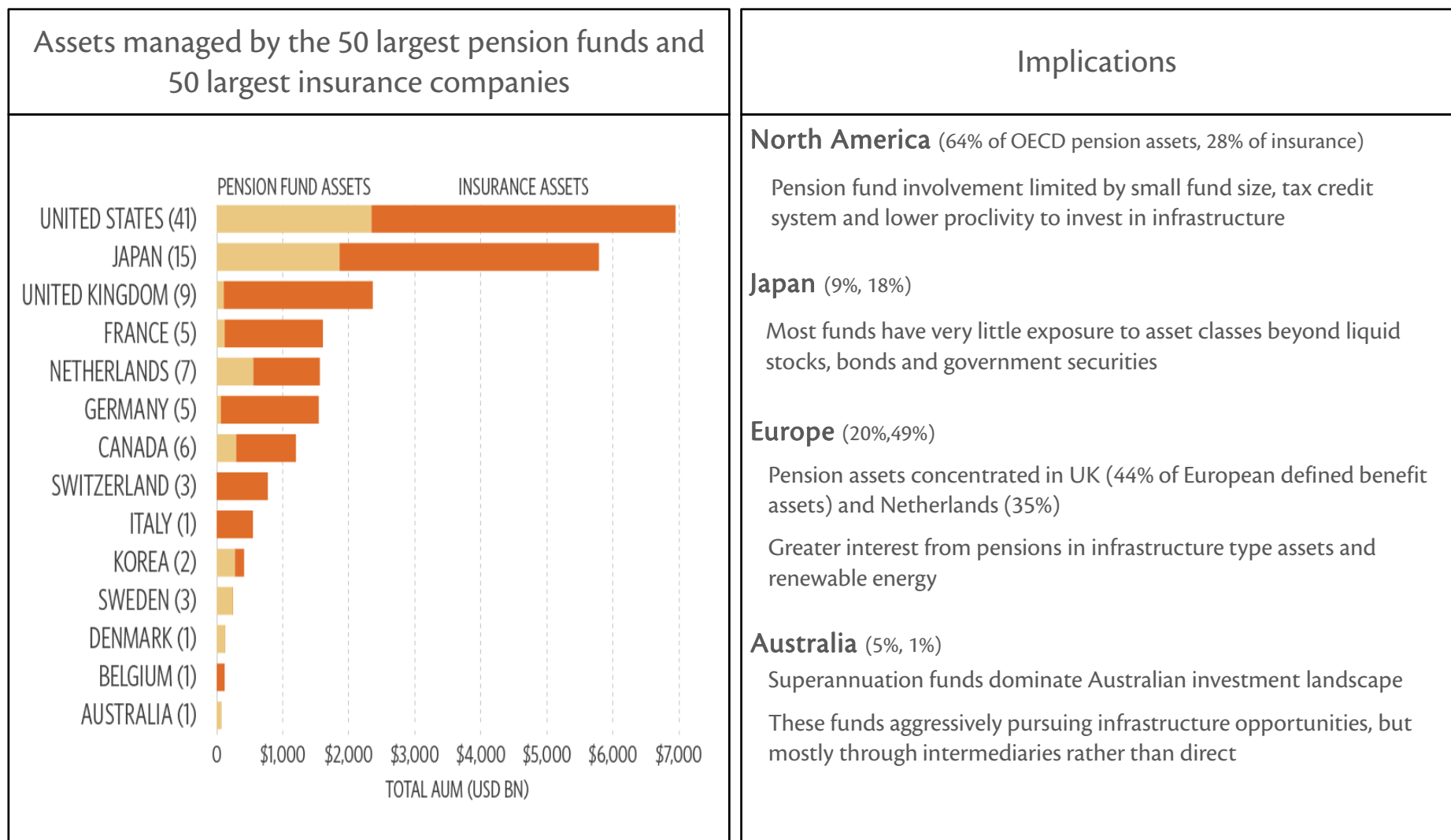


Institutions could only meet a fraction of the investment needs for projects, but could fully provide the investment needed in corporations



Note: Investment needs in renewable energy in the OECD only. Sources: IEA, CPI Analysis

The scope for institutional investment in renewable energy falls unevenly across countries due to pension regulation and renewable energy policy



Note: Total number of funds and companies in parentheses. Sources: Towers Watson, Relbanks data.

We identify five potential ways forward

1. Fix policy barriers
2. Improve investor practices
3. Evaluate pension and insurance regulation
4. Develop better pooled investment vehicles
5. Encourage corporate investment

Policy Barriers: Many policy prescriptions affect all renewable energy investors, while some have a greater impact on institutions

General policy prescriptions

1. Reduce policy uncertainty
2. Pursue long duration policy support
3. Choose renewable energy support mechanisms carefully
 - For example: Feed in tariffs vs. green certificates
4. Consider risk shifting mechanisms
 - For example: loan guarantees
 - Resource certainty
 - Construction risks

Issues with greater impact on institutions

1. Use of tax incentives
 - US example
2. Electricity and gas unbundling rules
 - EU Example
3. Inflation linkage

Policy developed to meet other objectives, often unrelated to institutional investment, should consider the collateral impact on institutional investors

Investor Practices: Project investment would benefit from improving response to external barriers and general asset management practices

Investor response to external barriers and constraints

Investor response to liquidity

Decisions to build direct investment teams

Sector diversification

Evaluation of policy risk

Management practices that may further limit investment

Setting overall portfolio investment objectives

Subdividing the portfolio into distinct, more manageable mandates

Managing the distinct mandates or investment “silos”

Regulation: Pension and insurance structure and regulation also affect institutions ability to invest in renewable energy projects

Examples of regulatory issues:

1. Solvency II
2. Liquidity constraints more generally
3. Accounting treatment
 - Treatment and calculation of surplus or deficit
 - Mark to market accounting
4. Pension policy
 - Pay as you go versus asset backed
 - Defined benefit versus defined contribution
 - Mutualization or fund size

Once again, policy developed to meet other objectives, often unrelated to institutional investment, can have a huge impact

Pooled Investment Vehicles: New designs could meet institutional needs and expand institutional investment

Issues with current fund designs

High fees

“Churning” of the portfolio

Re-investment risk

Leveraging projects

Hedging out inflation

Managing the time frame

Considerations for developing pooled investment vehicles for Institutions

Fee levels

Liability matching, control and predictability

Liquidity

Deal flow

Expertise

Monitoring

But can fees be low enough and the structure good enough to lead to lower renewable energy financing costs?

Corporate Investment: The structure of the renewable energy industry itself may be impeding investment

Project finance does not have to represent 62% of total investment in renewable energy

Different industry structures, for example with more corporate investment, could unleash investment from many sources...

... but may not lower costs and may discourage innovation...

and many corporations also face limitations to invest in renewable energy and infrastructure...

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Questions?

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