THE ROLE OF INSTITUTIONAL INVESTORS IN FINANCING SUSTAINABLE ENERGY

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Workshop on “Infrastructure Investment in Emerging Markets and Developing Economies: Systems-Thinking for New Institutions and Global Challenges”

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University of Oxford
1% of large OECD pension fund assets invested directly in infrastructure


* based on large OECD pension funds, covering $10+tn

** BNEF estimates
OECD policy recommendations: Overcoming barriers and mobilising institutional investment in sustainable energy

- Ensure a stable “investment grade” policy environment - evaluate and fix unintended regulatory impacts
- Address market failures (incl. lack of carbon pricing & remove fossil fuel subsidies)
- Provide a national infrastructure road map & pipeline
- Facilitate the development of liquid financing instruments and risk mitigants
- Promote market transparency, standardisation and improve data on infrastructure investment
- Reduce the transaction costs of green investment
- Establish a “green investment bank” or refocus existing public finance institutions

Wind and solar getting cheaper all the time. Small changes in cost of capital have outsized impact.

- Empirical base of 70 project and corporate investments
- Used to identify **barriers** and inform policy **recommendations** on how to mobilise investment by pension funds and insurers in sustainable energy through **different channels**
- Proposes a framework that **classifies** investments according to different types of financing **instruments and funds**
- Highlights the “**risk mitigants**” and “**transaction enablers**” that intermediaries can use to mobilise capital.
- Promising channels highlighted in report are now being analysed in depth by OECD e.g. **Green Bonds** and “**Blended Finance”** – Danish Climate Investment Fund
- Annexed to the Communiqué of G20 Finance Ministers in Feb. 2015

Source: OECD, 2015: http://dx.doi.org/10.1787/9789264224582-en
1. **Understand and compare** different investment channels available in practice and in theory;

2. **Illuminate** where investment is or is not flowing;

3. **Highlight** potentially promising channels

4. **Target** and undertake data collection

5. **Fit** channels to economic geography

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Shift to Northern Europe (and the UK in particular)

INSTITUTIONAL EQUITY INVESTMENT IN EU RENEWABLE PROJECTS (€ MM.) BY COUNTRY

Source: HgCapital data (OECD interviews)
Technology Key

Wind - Offshore
Wind - Onshore
Wind - Diversified
Solar - PV
Solar - CSP
Solar - CPV
Geothermal
Biofuels
Biomass
Waste to Energy
Hydro
Diversified
Sustainable Energy

Sustainable energy projects have not yet independently listed on public markets

No public disclosure of pension fund investment in specific corporate green bonds available. Many issuances noted to have significant institutional investor interest such as EDF Energies Nouvelles

No public disclosure of pension fund investment in green bond funds available

No public disclosure of pension fund investment in index funds or ETFs available
### Risks and barriers are heightened for institutional investment in emerging markets and developing countries

<table>
<thead>
<tr>
<th>Market Risks</th>
<th>Developer risk</th>
<th>Desire for proven track-record of asset developer, or guarantee from a larger parent or sponsor to backstop development risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPA counterparty credit risks</td>
<td>Desire for high quality off-taker of energy, be it a nationalized energy company or investor owned utility; for prepayments, concern about being paid back in falling rates environment without attracting reinvestment alternatives</td>
<td></td>
</tr>
<tr>
<td>Currency and rate risks</td>
<td>Ability of non-OECD investors to hedge foreign exchange risk if investment is outside OECD jurisdictions; concern about interest rate fluctuations and impact on market value of debt</td>
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<tr>
<td>Concentration risk</td>
<td>Lack of investor depth requires significant hold position on original lender’s balance sheet</td>
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<tr>
<td>Liquidity risk</td>
<td>Concern on ability to exit investment, particularly for smaller-size opportunities</td>
<td></td>
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<tr>
<td>Market risk</td>
<td>Concern about the borrower’s ability to weather extreme fuel price dynamics that could undermine specific sustainable energy technology’s competitiveness relative to alternatives</td>
<td></td>
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<tr>
<td>Business model and execution risk</td>
<td>This concern is most pronounced for impact investors considering opportunities in energy access</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Political Risks</th>
<th>Retroactive policy change risk</th>
<th>Change in regulatory of legislative support for green investment undermines economic outlook for underlying credit of investment asset by changing revenue, tax or contract profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sovereign risk</td>
<td>The degree of state-owned ownership in the energy sector is cited as a deterrent by many investors but it can also be a risk mitigant when SoEs are co-investors in projects. There is also a lack of creditworthiness of many state-owned power utilities as off-takers</td>
<td></td>
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<tr>
<td>Communication risk</td>
<td>Currency convertibility and availability; repatriation and expropriate risks</td>
<td></td>
</tr>
</tbody>
</table>

### Source:
<table>
<thead>
<tr>
<th>Financial Capital Type</th>
<th>Financing Instruments</th>
<th>Funds</th>
<th>Risk mitigants</th>
<th>Transaction enablers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Debt</strong></td>
<td>Capital Market Securities</td>
<td>Cash</td>
<td>Infrastructure debt funds (listed and unlisted)</td>
<td>Warehousing or pooling</td>
</tr>
<tr>
<td></td>
<td>Sovereign, Supranational and Agency (SSA) bond</td>
<td></td>
<td>Private debt funds (targeting companies)</td>
<td>Co-investment</td>
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<tr>
<td></td>
<td>Project bond</td>
<td></td>
<td>Special Purpose Vehicle</td>
<td>Joint-venture or consortium</td>
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<td></td>
<td>Corporate bond</td>
<td></td>
<td>Bond fund</td>
<td>Co-investment platform</td>
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<td></td>
<td>Covered bond</td>
<td></td>
<td>Exchange Traded Funds</td>
<td>Co-operation and collaboration</td>
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<tr>
<td></td>
<td>Asset-Backed Security (ABS)</td>
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<td>Mutual Fund</td>
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<td></td>
<td>Collateralised Debt Obligation (CDO)</td>
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<td>Structured Note</td>
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<tr>
<td><strong>Mixed</strong></td>
<td>Convertibles (equity and debt) and Mezzanine Financing</td>
<td></td>
<td>Mixed debt and equity funds</td>
<td></td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td>Stock (share)</td>
<td>Unlisted Share</td>
<td>Infrastructure equity funds (listed and unlisted)</td>
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<td></td>
<td></td>
<td></td>
<td>Private equity funds (targeting companies)</td>
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<td></td>
<td>Venture capital funds (targeting companies)</td>
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<td></td>
<td>Special Purpose Vehicle</td>
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<td></td>
<td>Exchange Traded Fund</td>
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<td>Mutual Fund</td>
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<td>YieldCo and other listed structures</td>
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### The OECD Policy Guidance for Investment in Clean Energy Infrastructure

<table>
<thead>
<tr>
<th>Policy areas</th>
<th>Questions/issues for policy makers consideration</th>
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</table>
| 1. **Investment policy**           | • Non-discrimination of foreign versus domestic investors  
                                       • Intellectual property rights  
                                       • Contract enforcement                                                                                                                                 |
| 2. **Investment promotion and facilitation** | • Removing fossil fuels subsidies and pricing carbon  
                                       • Long term policy goals  
                                       • Policy incentives for investment  
                                       • Licensing  
                                       • Policy coherence and coordination                                                                                                                                 |
| 3. **Competition policy**          | • Electricity market structure  
                                       • Non discrimination in access to finance  
                                       • Competition authority                                                                                                                                 |
| 4. **Financial sector development** | • Facilitate access to finance  
                                       • Specific financial tools and instruments  
                                       • Strengthening domestic financial markets                                                                                                                                 |
| 5. **Public governance**           | • Regulatory quality of the electricity market  
                                       • Multi-level governance                                                                                                                                 |
Key takeaways: good reasons for optimism exist but key issues for government remain and require focused attention

The Challenge: We need to massively scale up and shift investment towards low carbon energy sources, especially in EMDEs. COP 21 needs to send the right signal to the whole system.

Cause for Optimism:

- There are deep pools of capital available to invest. Good projects in countries with the right policy conditions get the money.
- Costs of sustainable energy coming down fast and clean energy ambition and deployment is ramping up impressively in EMDEs (India, China, South Africa energy and climate plans).
- Direct investment in sustainable energy can provide attractive risk-return for institutional investors; particularly for liability hedging.

Key Issues for Governments:

- Focus on maintaining an ‘investment grade’ policy environment - stability and coherence.
- Then bankable and investable pipelines will emerge at scale. Close attention is also required on the higher-risk early stages of the project pipeline and on pooling small scale assets.
- How to support the development of investment channels for sustainable energy that hold potential to attract institutional investment and to lower the cost of capital for sustainable energy (e.g. direct investment, green bonds, YieldCos).
- Risk mitigants and transaction enablers are available and MDBs can to play a key role here, especially in EMDEs.