Tradeoffs

Feasibility vs. Impact

Payoff vs. Impact

False Choice
Financing Options

- A Public-sector backed CDM
- International Climate Trust
- Mobilize Private Capital
- Corporate Finance
- Carbon Tax
- Cap and trade
Action Today

- **Finance** Energy Efficiency in Buildings
- **Market** Clean Investment Bonds
- **Incentivize** Private Investment
- **Advocate and Shape** the Green Climate Fund
Financing Energy Efficiency in Buildings

Buildings represent 32% of global energy consumption /source: IEA
ENERGIEAUSWEIS für Wohngebäude

gemäß den §§ 16 ff. der Energieeinsparverordnung (EnEV) vom 1

Berechneter Energiebedarf des Gebäudes

Registriernummer

(oder: „Registriernummer wurde beantragt am...“)

Energiebedarf

CO₂-Emissionen

kg/(m²·a)

Endenergiebedarf dieses Gebäudes

kWh/(m²·a)

Primärenergiebedarf dieses Gebäudes

kWh/(m²·a)

Anforderungen gemäß EnEV

Primärenergiebedarf

Ist-Wert kWh/(m²·a) Anforderungswert kWh/(m²·a)

Energetische Qualität der Gebäudehülle H₁

Ist-Wert W/(m²·K) Anforderungswert W/(m²·K)

Sommerlicher Wärmeschutz (bei Neubau) eingehalten

Für Energiebedarfsberechnungen verwendetes Verfahren

- Verfahren nach DIN V 4108-6 und DIN V 4701-10
- Verfahren nach DIN V 18599
- Regelung nach § 3 Absatz 5 EnEV
- Vereinfachungen nach § 9 Absatz 2 EnEV

Endenergiebedarf dieses Gebäudes

[Pflichtangabe in Immobilienanzeigen]

kWh/(m²·a)
Home Energy Score

Score

Address: 12345 Honeysuckle Lane
Smithville AR 72466

Home size: 2,800 square feet
Year built: 1970
Air conditioned: Yes

Score with improvements: 7

Your home’s current score: 5

Uses more energy

Uses less energy

Estimated 10 year savings: $3,900

The Home Energy Score is a national rating system developed by the U.S. Department of Energy. The Score reflects the energy efficiency of a home based on the home’s structure and heating, cooling, and hot water systems. The Home Facts provide details about the current structure and systems. Recommendations show how to improve the energy efficiency of the home to achieve a higher score and save money.

Assessment type: Official Score
Assessment date: 01/07/2014
Score ID: 1913375
Qualified assessor #: 101019
Home Energy Score Version: 2014
Front-end
- Banks provide retrofit funding
- Loans paid through energy savings

Back-end
- Institutional and private Investors provide capital to banks in return for ROI

Banks and Market Makers

PACE, EEM, and Universal Standards

Securitization

Institutional and Private Investors
Energy Efficiency in Buildings

March 2014: Deutsche Bank closes 1st ever PACE-loan securitization

CA Solar & Insulation Upgrades

$104mm: 11YR, AA rated, 4.75% fixed

May 2014: CEFIA bundles and sells C-Pace Loans

CT Commercial Energy Eff. Upgrades

$30mm: avg. life 8.7 years. 5.1%
Energy Efficiency in Buildings

- Institute International Standards
- Streamline retrofit loan procedures
- Market retrofit loans
Clean Investment Bonds

Attracted $6 Billion of new financing in less than 6 years
World Bank Green Bonds

Based on IBRD’s FY2013
World Bank Green Bonds

- $6 billion in bonds since 2008 with the AAA backing of the World Bank
- Attracts capital into developing markets
  - Generate large environmental returns
  - Low-risk
- The opportunity is there!
  - Participate & Incorporate
Incentivize Private Investment
Kick-Start the Adoption Process

Early Movers → The Early Majority → The Late Majority → The Laggards

Incentives Needed → Private sector takes over
Incentivize Private Investment

Reduce the cost of energy efficiency investments by:

Proposal 1
• Extend the above-the-line mortgage interest tax deduction to EEM and PACE loans.

Proposal 2
• Raise returns by eliminating federal income tax for green bonds.
Our Proposal

Donor Countries

Green Climate Fund

Approved local NGOs and Development Banks
Implementation Today

Broad Attraction

- Private Investors
- Institutions
- Non-Profits

Broad Impacts

- Industrialized
- Emerging
- Developing

Energy Efficiency Financing
Private Investment Incentives
Clean Investment Bonds
Green Climate Fund
Questions?

Many thanks to:
The Cost of Delayed Action

*Source: McKinsey & Company 2010*
Integrated scenarios – emission pathways

Global GHG emissions
GtCO₂e per year

- Business-as-usual
- Least common denominator
- Developed world in the lead
- Varying sector success
- Global action
- Potential of technical measures <€60/tCO₂e
- Green world

Source: Global GHG Abatement Cost Curve v2.0; Houghton; IEA; IPCC; den Elzen; Meinshausen; OECD; US EPA; van Vuuren
Energy Efficiency in Buildings

*Source: Greentech Media*
Energy Efficiency In Buildings

*Source: IEA*
<table>
<thead>
<tr>
<th></th>
<th>Perfect World Scenario</th>
<th>Targeted Efforts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worldwide participation</td>
<td>100%</td>
<td>50-85%</td>
</tr>
<tr>
<td>Level of Investment</td>
<td>1 % of GDP</td>
<td>0.3% of GDP</td>
</tr>
<tr>
<td>Total Investment</td>
<td>$717 billion</td>
<td>$108-$186</td>
</tr>
<tr>
<td>Investment Focus</td>
<td>All GHG emissions</td>
<td>Non-market emissions</td>
</tr>
<tr>
<td>Potential abatement/ year</td>
<td>38 GtCO$_2$e</td>
<td>12 GtCO$_2$e</td>
</tr>
</tbody>
</table>
Prevent annual global temperature increases above 2%

Challenges:

- long-term, low to negative return investments
- $1.5 trillion in investments needed by 2020 (IEA 2013)
- Cost of doing nothing = $5 trillion to get back on track
- High discount rates lead to underinvestment
- Policy mechanisms do not take account true social costs of fossil fuels

Potential

- Socially Responsible Investments increased fivefold over past 20 years
- High net-worth Millennials are more interested in social responsibility than peers of previous generations
- Creation of Green Investment instruments
January, 2014
Bank of America, Citigroup, Crédit Agricole CIB, Deutsche Bank, JPMorgan Chase, BNP Paribas, Daiwa, Goldman Sachs, HSBC, Mizuho, Morgan Stanley, Rabobank and SEB agree on
Green Bond Principles