



Massive Energy Efficiency Implementation through Financial Innovation

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Kendall Foundation & Climate Change

- Trustees transformed mission to Climate Change in 1999
- In view of climate imperative, passive philanthropy is not sufficient
- We use the Advocacy, Entrepreneurial and Collaborative Approaches throughout our programs and grant decision-making
- Climate and Energy Team with more than 100 years of entrepreneurialism, private sector experience and policy leadership





Background

- Private Sector RE and EE Developer – Energia Global in Latin America
- Directed \$250M Massachusetts Renewable Energy Fund
- Chairman and Founder in 1984 of International Institute for Energy Conservation (IIEC)
- U.S. Congress and State Energy Policy Development over 25+ Years





Themes:

Focus on Reducing GHG Emissions

1. Massive Energy Efficiency Implementation
 - Energy efficiency, distributed generation (combined heat & power, renewable energy), demand-response
2. Innovative Financing & Leverage
 - Leverage public funding with private finance opportunities
 - Work with private investors in U.S. and international funds (such as development banks) on new financing solutions





Massive Energy Efficiency Implementation

- High Penetration rates in Commercial, Industrial, Government, Agricultural & Residential Sectors
- Critical mass for financing; reducing marketing and transaction costs
- Emphasis on Retrofitting existing buildings including homes; engage new construction as well
- Use all measures: lighting, HVAC and control systems, appliance standards and building practices
- Install Distributed Generation (Renewable Energy and Combined Heat & Power Facilities) wherever possible; emphasize demand response to reduce peak electricity use
- High profile campaigns involving government, private sector and citizen leadership





Innovative Finance & Leveraging

- Maximize new or existing public funding to leverage by a factor of 4–8x energy efficiency implementation
- International and state funding can serve as the “equity,” allowing the bulk of the financing to come in as private debt
- Revolving lines of finance can be utilized, which are replenished as energy savings are paid back
- Innovative financing can truly revolutionize clean energy implementation, both in US and internationally





\$100 Million City Project

“Cambridge Energy Alliance”

- \$100 million, 5 year, massive energy efficiency project in Cambridge, MA, with a population of 101,000
- High profile campaign led by the city, with peer pressure helping to generate participation among companies, organizations and residents
- All sectors – commercial, industrial, government, universities, hospitals and non-profits, housing and residents
- Goal of reducing peak demand by 50 MW and fossil fuel use by 5% over 5 years, major GHG emission reductions
- Best way for city, companies and consumers to stabilize energy costs and reduce pressure on the grid
- Significant number of new jobs and economic development





Cambridge Energy Alliance

Financial Model - Overview

- Assembling up to \$70 million revolving line of finance
 - \$15 +/- million in public funding (ISO-NE, utility, clean energy attribute sales)
 - \$5 million in private equity or subordinated debt financing
 - \$50 million in private project financing debt
- \$50 million in private debt raised from pension and annuity providers, life insurance companies, and potential financial institution lending programs
- Low risk debt, attractive interest rates
- Because savings are paid into revolving line, approximately \$100+ million in energy efficiency implementation will result over 5-7 years



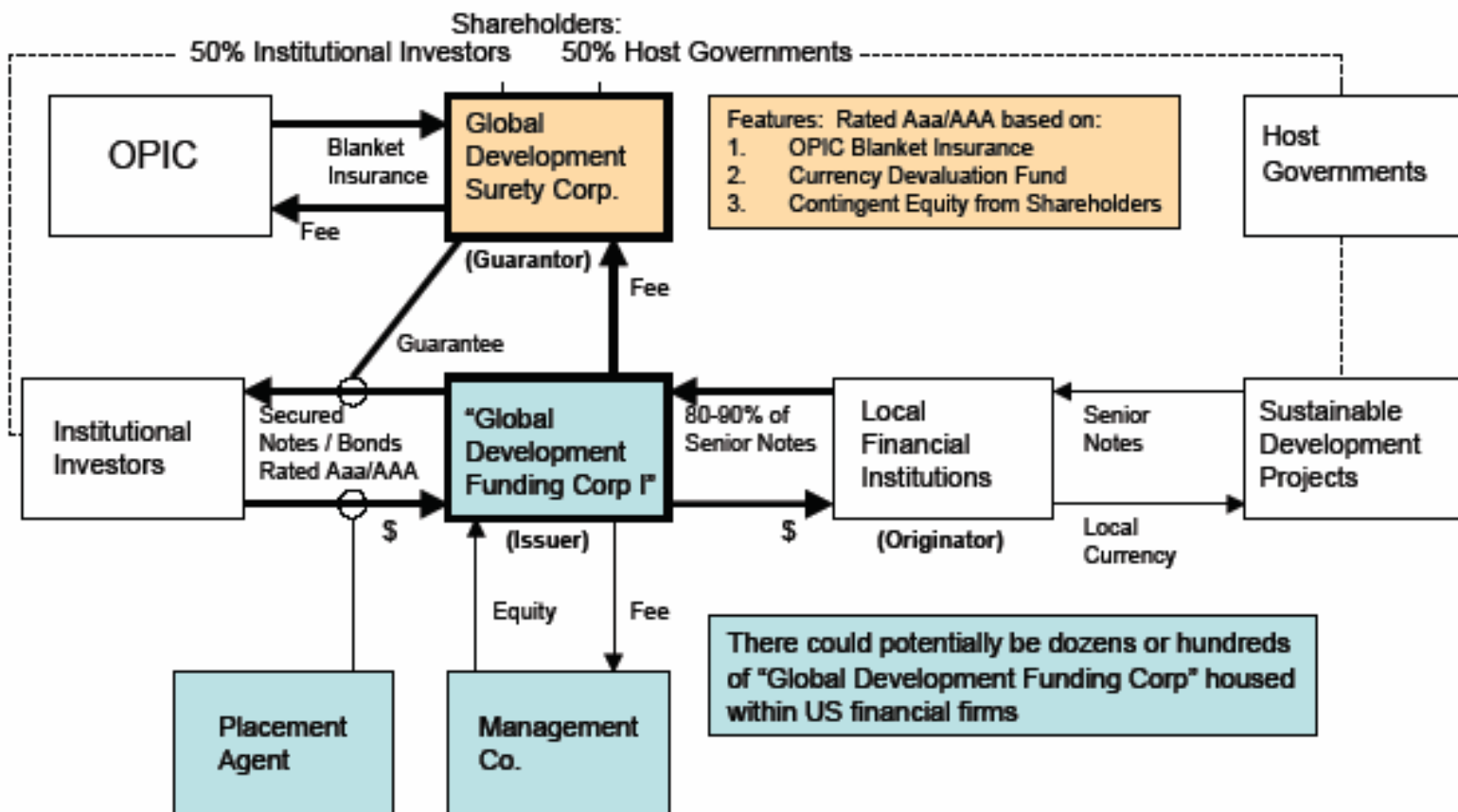


New International Investment Models Needed

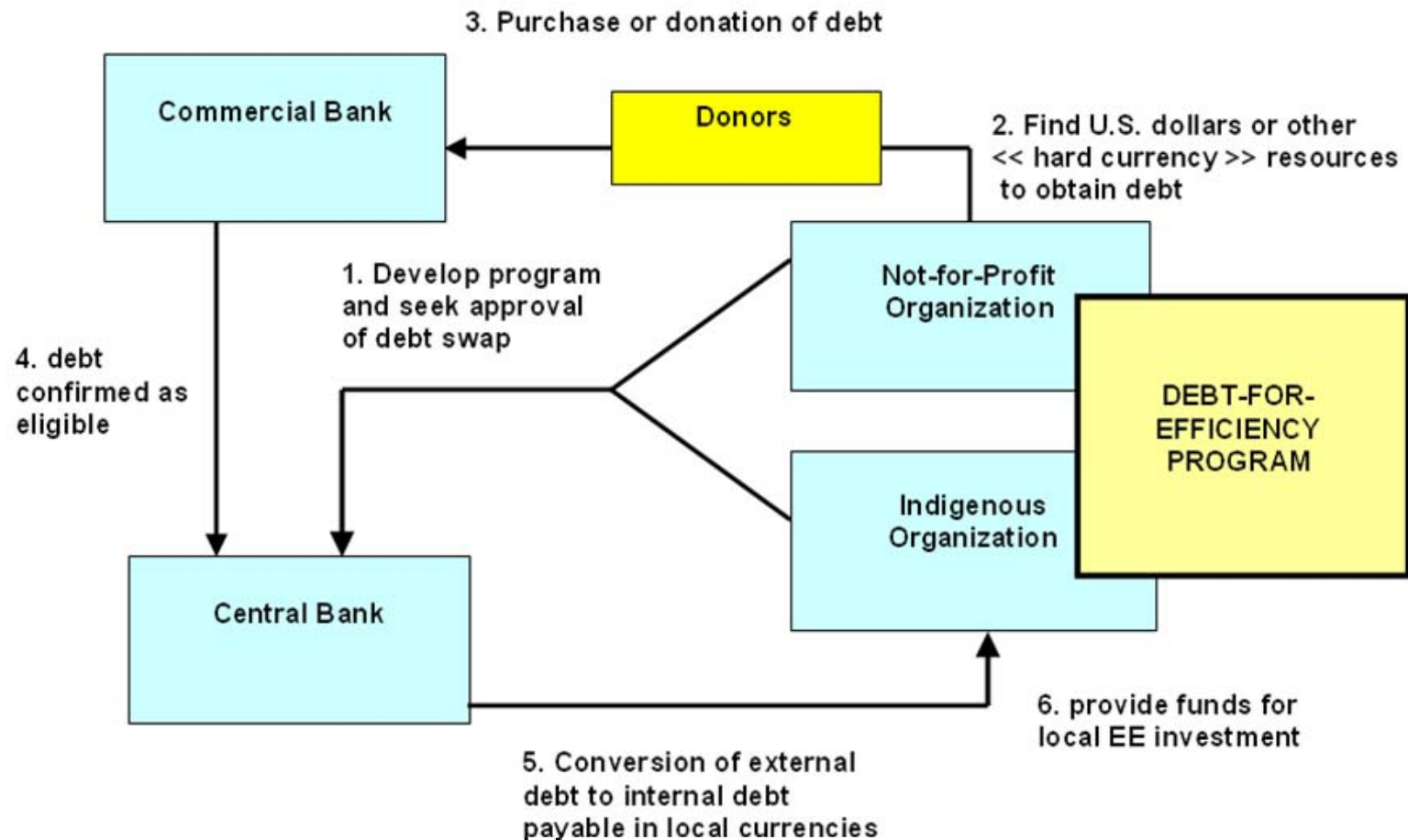
- With Energy Efficient infrastructure urgently needed in developing countries, private investment should be increasing dramatically
- Can leverage private investment through innovative multilateral mechanisms
 - Risk management solutions needed to facilitate capital flow
- Craft Public-Private Investment Partnerships
 - Global Development Bonds
 - “Debt-for-Efficiency” Swaps
 - Carbon Offsets for Project Finance



Global Development Bonds: Credit Enhancement to Obtain Private Capital



“Debt-for-Efficiency” Swap: Convert Non-Performing Debt to EE Investment



Carbon Offsets: Valuation of GHG Emission Reductions can Improve Project Bankability

Prices in 2003-2004 (in U.S.\$ per tCO₂e)





Jobs & Economic Development: Cambridge Energy Alliance example

- \$100+ million investment over 5 years creates good jobs at all levels
- Partnership with MIT, Harvard and other universities, as well as entrepreneurial sector, will create new companies and economic development
- Efficiency reverses flow of money out of city and state
- Projection of Economic Multipliers





Call to Action

- Identify opportunities – municipal and state governments, private sector clients, energy utilities, large institutional customers like universities
- Achieve buy-in from multiple sectors based on energy reliability, energy independence and climate goals
- International finance institutions such as the Asia Development Bank and the World Bank catalyze financing opportunities; consider setting up revolving lines of finance and guarantee mechanisms
- Work aggressively to identify new financing vehicles and partnerships at local, state, national & international levels





Conclusion

- Financing massive energy efficiency can often be done with public and private funding
- Given imperative of climate change solutions, must find ways to implement now
- Innovative Finance can lead the way

“Make no small plans.”

- Philosophy of Henry P. Kendall

