Clean Energy Finance Outlook: Opportunities for Green Banks and Green Bonds in Chile?

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1. CURRENT SITUATION IN CHILE

2. BARRIERS TO FINANCING

3. WHAT ARE GREEN BANKS AND GREEN BONDS?

4. INTERNATIONAL EXPERIENCE

5. POTENTIAL APPLICATIONS IN CHILE

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Current Situation in Chile: Clean Energy and Financing Needs
Crosscutting agreement on the importance of boosting clean energy in Chile’s energy matrix

Various Initiatives (Energía 2050, Agenda de Energía 2014, etc.), highlight the role NCRE and EE will play in the country’s energy future.

Various factors have contributed to a growing participation of clean energy in recent years

In March 2016, NCRE installed capacity represented 12% of total installed capacity, compared to 2.6% in 2007 (CIFES)
Current Situation: Clean Energy and Financing Needs (2)

The evolution of the clean energy market is strongly related to the evolution of the financing available for these projects.

Periods: growth (2007-2010), boom (2011-2014) and slow down (2015 to date)

Until 2015: Chile was one of the most attractive places to invest in clean energy.

Today: Changes in market conditions, slow down in development.

Increase in perception of risks, financial institutions are reestablishing requirements and conditions.

Projections: Financing needs could amount to between US$1 billion and US$1.4 billion per year.
Barriers to Financing
Barriers to Financing

The clean energy market has grown significantly in recent years, **HOWEVER** there are still hurdles to further expansion of these technologies.

There are market subsectors where capital does not flow despite commercial potential.

**WHY?**

Barriers to financing persist
Principal Barriers Identified

**NCRE Projects (Medium and Large) Interconnected to Electric Grids**

- SME-sponsored projects:
  - Lack of ability to provide guarantees or equity, lack of track record, high cost of structuring financing

- Innovative technologies:
  - Projects considered risky due to unfamiliarity with technology

**NCRE Projects (Small-scale) Net-metering or Self-Supply**

- Lack of interest from financial institutions due to small project size
- Inability to provide guarantees, equity, etc. due to the size of the sponsor
- High cost of structuring financing
- Unfamiliarity with technical and operational profile of the technologies
- Difficulty perceiving the economic benefits
- Lack of specific financial instruments

**Energy Efficiency Projects**

- Difficulty perceiving the economic benefits
- Perception that payback periods are too long
- Lack of specific financial instruments
- Incipient level of development of ESCOs

Innovative technologies: Projects considered risky due to unfamiliarity with technology.
Actions to Overcome Barriers

International Experience:

Green Banks and Green Bonds

Mobilize capital toward sectors where traditional financing does not reach

Drive private investment in clean energy

Standardize clean energy financing practices

Reduce perceived risk associated with clean energy projects

Decentralize access to financing
What are Green Banks?
What are Green Banks? (1)

- Public or semi-public financing institution with a mission to accelerate clean energy market development (financial innovation)
- Facilitate access to financing (credit enhancement and direct financing)
- Contribute to the development of liquid financial markets for clean energy projects that are available but have limited development
- Leverage public funds and use a wide range of financial products to attract private investment.
- Have the ability to adjust as necessary to particular needs
What are Green Banks?

- **Green Bank**
  - Implements new market structures and reduces the cost of clean energy solutions.
  - Helps grow demand for these initiatives / solutions.
  - Leverages public capital in an efficient manner to maximize private investment.
  - Helps reduce inefficiencies and barriers in the capital market.

**Development of Clean Energy Market**
International Experience: Green Banks
International Experience: Green Banks

**Australia: Clean Energy Finance Corporation**
Accelerate the transformation of Australia into a more competitive economy in a world with less carbon, by catalyzing greater investment in emission reductions.

**Malaysia: GreenTech Malaysia**
Develop sustainable and widespread green technology markets and strengthen local green technology industry.

**Japan: Green Finance Organization**
Support the development of local communities to address the impacts of slow economic growth.

**United Kingdom: Green Investment Bank**
Achieve ambitious emissions reduction targets.

**Connecticut, United States: Connecticut Green Bank**
Prioritize reducing carbon emissions and reducing energy costs, while contributing to the creation of local jobs by investing in clean energy.

**New York, United States: New York Green Bank**
Transform and accelerate the deployment of clean energy in the State of New York through funding and collaboration with the private sector.
Clean Energy Finance Corporation (Australia): Bioenergy Fund

- US$150 million fund
- Bioenergy projects in forestry, agriculture, etc. sectors
- CEFC provides US$75 million
- Credit enhancement techniques (co-financing)
Connecticut Green Bank (United States): Residential Solar Lease

Potential Green Bank Offerings

- US$60 million fund for small-scale solar (residential/commercial).
- Lease contracts with option to buy.
- CTGB provided US$10 million in subordinated debt and equity capital.
- Credit enhancement techniques.
Connecticut Green Bank (United States): Commercial Scale Energy Efficiency Program

Loans for energy efficiency in commercial properties.

Direct financing until market is established.

Warehousing of loans until commercially attractive scale is reached.

Sale of first set of loans to private investors for US$20 million (bank recapitalization).
Green Bank Network

Green Banks

UK Green Investment Bank
Connecticut Green Bank
NY Green Bank
Green Finance Organization (Japan)
Malaysian Green Technology Corp.
Clean Energy Finance Corp. (Australia)

Project Managers

coalition for green capital
NRDC
What are the objectives and structure of the network?

1. Collaboration and information exchange between Green Banks
2. Attract more private capital for clean energy
3. Facilitate the creation of new Green Banks

Online Platform and Membership Organization
What are Green Bonds?
What is a green bond?

Debt instruments that operate like conventional bonds with the additional requirement that funding be used for green projects.

Offered for a fixed term, and usually at a fixed interest rate to raise capital to finance projects (larger scale NCRE and aggregated small projects).

Can be issued by multilateral organizations, development banks, government agencies, municipalities, financial institutions and private companies.

Provide a way to verify compliance of financed project with environmental standards: use of proceeds is specifically defined.

Key to making market work is ensuring transparency and accountability.
International Experience: Green Bonds
International Experience: Green Bonds


Source: The Climate Bonds Initiative
International Experience: Green Bonds

**Mexico (NAFIN)**
- Development Bank
- US$ 500 million bond issuance. Registered demand of more than US$ 2.5 billion
- Diversified investor base
- International certification by Climate Bonds Standard Board

**Peru (Energía Eólica S.A.)**
- Private company
- US$ 204 million
- Refinanced project at a lower cost
Potential Applications in Chile
Potential Applications in Chile: Grid connected NCRE

**Potential Applications in Chile**
- First time solar/wind/biomass/minhidro project proposed by a small or medium enterprise

**Financing Barriers**
- Inability to offer guarantees, equity and/or track record

**Green Finance Solutions**
- Capital investment, loans, risk mitigation instruments
- Risk mitigation instrument (credit enhancement techniques)

**Innovative technologies for energy storage or generation**
- Project considered risky due to lack of familiarity with the technology
Potential Applications in Chile: Self Supply Projects

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<tr>
<th>Potential Applications in Chile</th>
<th>Financing Barriers</th>
<th>Green Finance Solutions</th>
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<tbody>
<tr>
<td>Small-scale residential or commercial projects</td>
<td>Lack of interest from traditional financial institutions</td>
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Potential Applications in Chile:

- Small-scale residential or commercial projects
- Industrial or agro industrial self supply

Financing Barriers:

- Lack of interest from traditional financial institutions
- Lack of targeted instruments

Green Finance Solutions:

- Financing, credit enhancement, project standardization and aggregation, warehousing
- Risk mitigation products, development and sharing of information
Potential Applications in Chile: Energy Efficiency

- **Potential Applications in Chile**: EE projects or solutions for residential, commercial, industrial scales
- **Financing Barriers**: Difficulty in perceiving economic benefits of projects (M-V-C)
- **Green Finance Solutions**: Risk mitigation, standardization, (reduce individual costs), disseminate information
- **ESCO projects to retrofit equipment**: Incipient level of ESCO development: Financial institutions not completely familiarized
- **Standardization, Warehousing, Securitization, etc.**:
Other Benefits of Green Banks and Green Bonds

- Achieve Energy Targets
- GHG Mitigation
- Diversified Energy Matrix
Next Steps
Green Bank Implementation Phases (International Experience)

**PHASE 1**
Scoping and Education
- Exploratory Research
- Outreach to stakeholders

**PHASE 2**
Analysis and Investigation
- Market Analysis
- Legal Analysis
- Capitalization Analysis

**PHASE 3**
Establishment
- Stakeholder Consensus
- Enabling Legal Actions
- Product Development

**PHASE 4**
Operations
- Start of Operations
- Recapitalization
- Ongoing Operations

**Principal Stakeholders**
- Civil Society Groups
- Renewable Energy Trade Associations
- Energy Efficiency Trade Associations
- Consumer Protection Groups
- Government Ministries (Energy, Environment, Finance)
- Government Financial Institutions
- Commercial Banks/ Private Investors
Green Banks: Next Steps in Chile?

- Analysis of existing financing offered (Identify gaps)
- Identify and define sub-sectors or technologies (Potential beneficiaries)
- Detailed legal analysis (Structures, regulations, etc.)
- Education and capacity building process
- Identify and define specific programs
Green Bonds: Next Steps?

- Develop and disseminate information for bond issuers (creation, marketing, benefits, etc.)
- Facilitate aggregation of smaller projects (Green Bank/Development Institutions)
- Examine possible regulatory changes (preferential treatment)
- Help create initial issuances (Demonstrative examples)
Questions/ Discussion

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