



THE WORLD BANK

TREASURY
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World Bank **GREEN BONDS**



Daiwa
Impact Investment Forum

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October 2012

The World Bank Treasury

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<http://treasury.worldbank.org/greenbonds>



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What is the World Bank and how does it finance its activities?



The World Bank

- **The World Bank is a development cooperative owned by 188 member countries**
- **The World Bank works with members to achieve economic growth and social and environmental sustainability**
- **World Bank is called IBRD (“International Bank for Reconstruction and Development”) and rated AAA/Aaa**
- **Investments in World Bank bonds support member efforts to achieve economic growth, a cleaner environment, and poverty reduction**





The World Bank's Financial Strength

- IBRD's Aaa/AAA rating is based on a solid financial structure, conservative financial policies and consistent performance, as well as support and capital backing from its shareholders.

Strong Credit Quality

Quality Loan Portfolio

Prudent Risk Management

Substantial Liquidity

Diversified Shareholder Base



The World Bank's headquarters are in Washington, D.C.



Key Balance Sheet Items and Risk Management

Highlights:

- **Loans Outstanding** have increased since FY2007; the overall credit quality of many borrowers has improved.
- **Liquid Assets** are held to ensure timely payments can be made for disbursements and debt service and are managed against strict guidelines and conservative benchmarks.
- **Borrowings and loans** are managed to mitigate the interest rate risk and eliminate currency mismatches between assets and liabilities.
- **Swaps** are used for hedging purposes; collateral is held to manage counterparty credit risk.
- **Equity** is primarily comprised of paid-in capital and retained earnings. Every year, the priority use of net income generated is to strengthen the capital base. The Equity-to-Loans ratio was 27% on June 30, 2012.

Key Balance Sheet Items^(a)

(as of June 30, 2012, billions US\$)

Investments & due from banks ^(b)	39	Borrowings	145
Net loans outstanding	134	Equity	37
Other ^(c)	165	Other ^(c)	156
Total Assets		338	Total Liabilities & Equity
			338

(a) Fair value basis; see financial statements for additional details
 (b) Of this amount, the liquidity portfolio is US\$ 34.2 billion
 (c) Mostly swap payables and receivables

Focus

What is the relationship between Japan and the World Bank?



The World Bank and Japan - Borrower

- Japan is the World Bank's 2nd largest shareholder
- 157 Japanese citizens work at the World Bank
- Japan joined the World Bank as a shareholder in 1952 and borrowed to help reconstruct after WWII
- The first loans to Japan were for
 - power generation
 - heavy industrial production
 - transportation



Japan becomes a member of the World Bank in 1952



World Bank headquarters in the 1950s

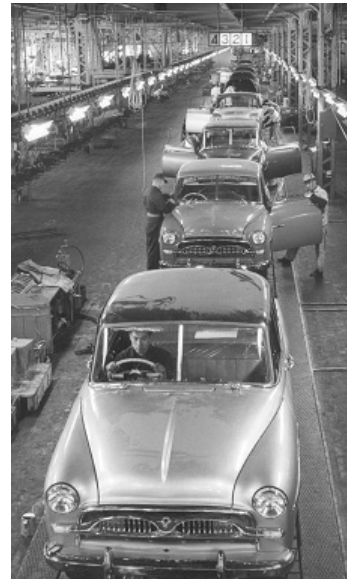


The World Bank and Japan – Projects

- **Power generation:**
 - Kansai, Kyushu, Chubu Electric
 - Hokuriu Hydroelectric
- **Heavy industrial production**
 - Kawasaki Steel
 - Yawata, Nippon Steel
 - Kobe Blast Furnace
- **Transportation**
 - Mitsubishi Shipbuilding
 - Toyota Motor Company
 - Meishin, Tomei highways
 - Bullet train
- **Japan's final loan was in 1966**
- **31 loans with a total amount loaned \$863 (1953-1966)**



Mitsubishi Shipbuilding



Toyota

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Shinkansen





40 years in the Japanese Capital Markets

- By 1971, Japan had transitioned from being a borrower from the World Bank to being a source of funding
- Over 40 years, USD 150 billion equivalent raised through World Bank bonds sold to retail and institutional investors
- **Milestones:**
 - 1971 - first World Bank “Samurai” bond
(JPY bond issued in the domestic market by foreign issuer)
 - 1985 - first “Shogun” bond
(foreign currency bond issued in the domestic Japanese market)
 - 1987 - ‘daimyo’ bond
(JPY bond that settles through European clearing systems)
 - 1992 – First JPY global bond
 - 1990s to today – Uridashi bonds
 - 2007 and 2010 World Bank bond funds managed by Nikko AM
- Japan is at the forefront of investing that incorporates social, environment and governance criteria, such as impact investing



Focus

Why is the Bank raising financing through Green Bonds?

Climate Change

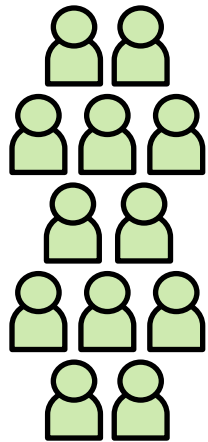
can be tackled on many levels.

Investments in developing countries
are part of the global solution.





The Green Bond Story – The Search for a Green Investment



Investors

Swedish & Norwegian public pension funds

Green Investment?

Challenges

- 1) Project Selection, Due Diligence, Monitoring?
- 2) Project / Country Risk?
- 3) Liquidity Risk?
-- Long Maturities?
-- Ability to trade?
- 4) Return?
- 5) Currency?

Green Projects



Wind Power



Solar Power



Technologies to Reduce GHG Emissions



Waste Management



Transport Efficiency



Energy Efficiency



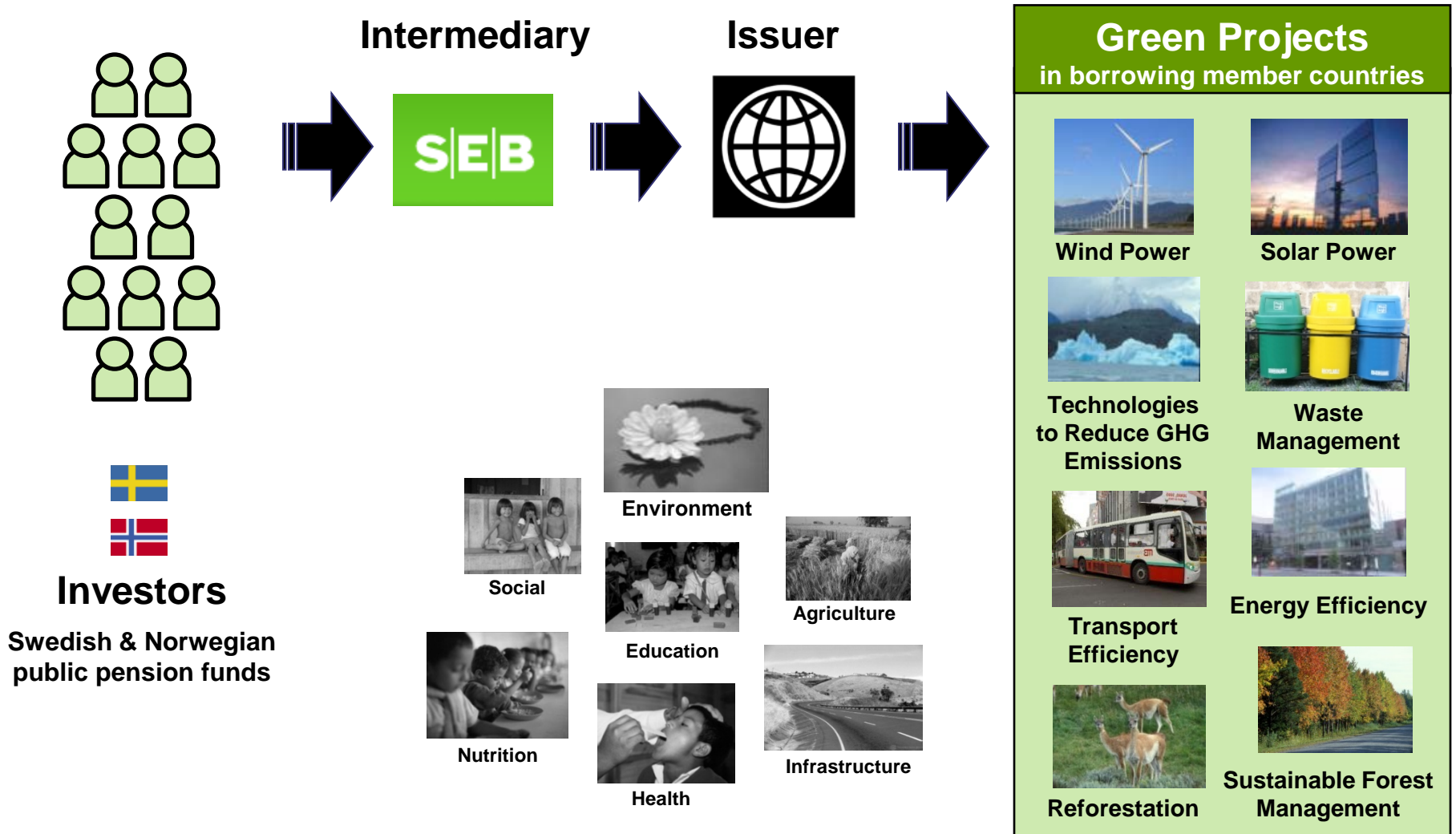
Reforestation



Sustainable Forest Management

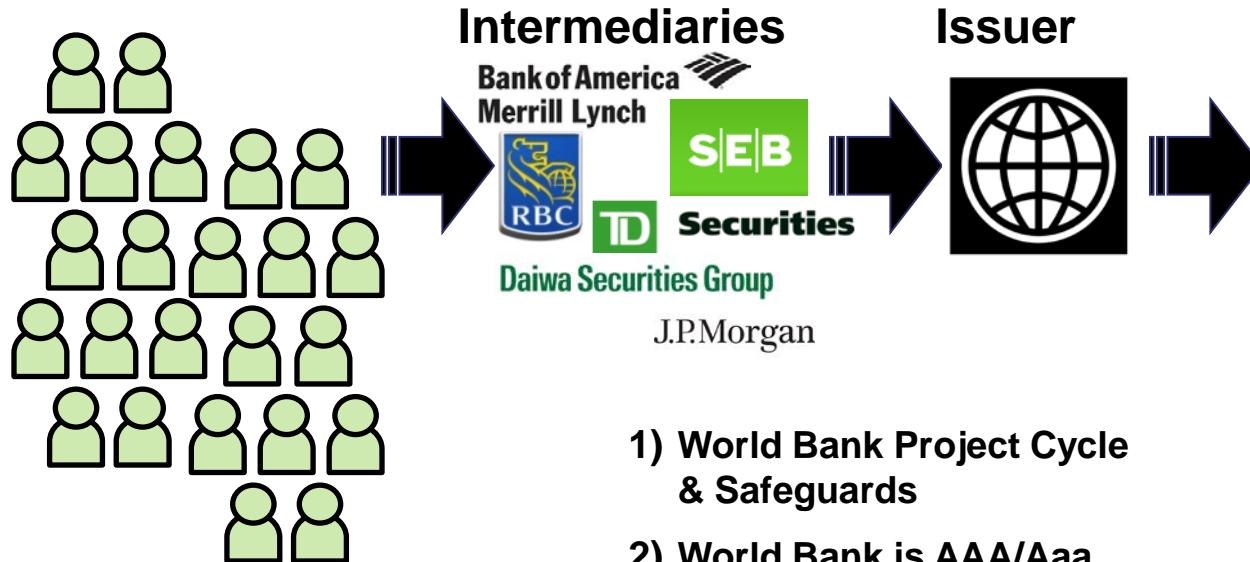


The Green Bond Story – Designing the Product





The Green Bond Story – The Green Bond is Launched



- 1) World Bank Project Cycle & Safeguards
- 2) World Bank is AAA/Aaa
- 3) Bond – Transferable (Secondary Market)
Maturity Selection Flexible
- 4) Return
- 5) Currency – Flexible

Green Projects

in borrowing member countries

 Wind Power	 Solar Power
 Technologies to Reduce GHG Emissions	 Waste Management
 Transport Efficiency	 Energy Efficiency
 Reforestation	 Sustainable Forest Management





Types of projects Green Bonds support

MITIGATION project examples:

- Solar and wind installations
- Funding for technologies that result in significant reductions in GHG emissions
- Rehabilitation of power plants and transmission facilities to reduce GHG emissions
- Greater efficiency in transportation, including fuel switching and mass transport
- Waste management (methane emission)
- Energy efficient building construction
- Reforestation and avoided deforestation

ADAPTATION project examples:

- Protection against extreme events, such as floods and droughts (including reforestation and watershed management)
- Food security improvement and stress-resilient crops (to slow down deforestation)
- Sustainable forest management and avoided deforestation





World Bank Green Bonds

Over USD 3.3 billion has been raised with 51 World Bank green bonds issued in 17 different currencies.



List of Select Investors

AP2 - Second Swedish National Pension Fund
AP3 - Third Swedish National Pension Fund
Adlerbert Research Foundation
BofA Merrill Lynch Wealth Management Network
California State Treasurer's Office
Church of Sweden
CalSTRS
Calvert Investments
FMO (Netherlands Development Finance Co.)
LF Liv
MISTRA
Everence Financial
New York Common Retirement Fund
Rathbone Greenbank
SEB Ethos Rantefund
SEB Fonden
SEB Trygg Liv
Sarasin
Skandia Liv
Trillium Asset Management, LLC
UN Joint Staff Pension Fund
WWF-Sweden (Världsnaturfonden)
ZKB (Zürcher Kantonalbank)

(Japan)

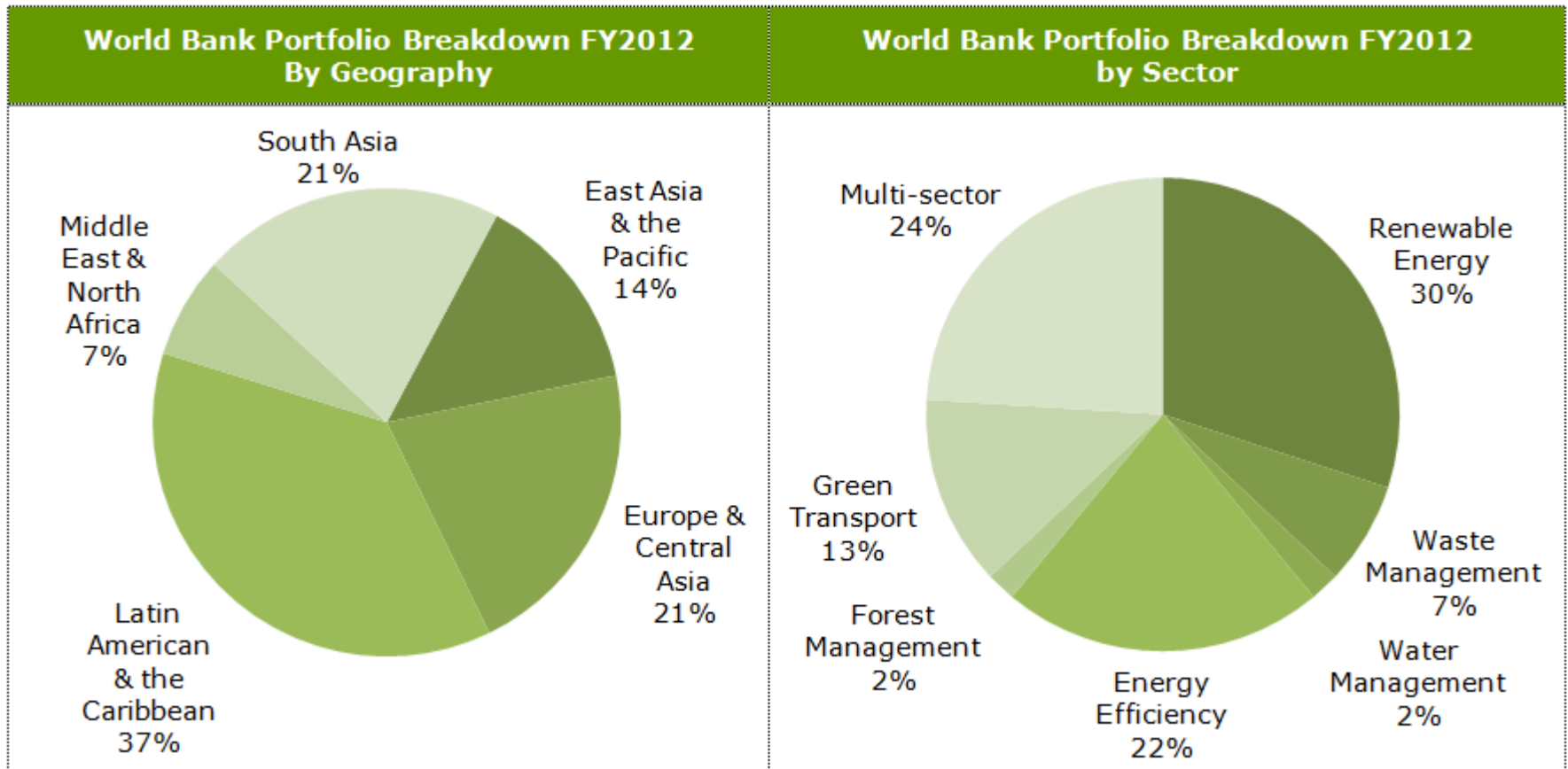
Iyo Bank
Sanin Godo Bank
Iwate Bank
Kiyo Bank
Kagawa Bank
Aichi Bank
Fukui Bank
Daishi Bank
Sanin Godo Bank (2nd)
Hokuyo Bank
Nanto Bank
Oita Bank
Musashino Bank
Ogaki Kyoritsu Bank
Waseda University
Chiba Kogyo Bank

Focus

How are Green Bonds making a difference?



Green Project Portfolio as of end FY2012



As of June 2012, almost \$3 billion has been allocated to green projects across the world, These graphs illustrate the geographic and sector breakdown.



Locations of Eligible Projects





World Bank Green Bonds – Conclusion

- Buyers of World Bank green bonds have a high-quality fixed income product that meets their financial risk and return objectives
- These investments also support the World Bank's efforts to help developing countries combat climate change
- Thank you!





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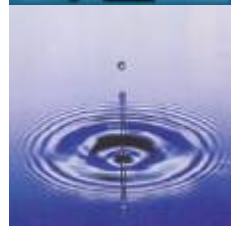
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Project Example in Mexico

Project summary:

Purpose: To reduce carbon emissions and increase public transportation efficiency

Project Term: 2010 - 2015

IBRD Financing: US\$150 million



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Urban Transport Transformation Program

Mexico's transport sector is high carbon-intensive

Accounts for 18% of Mexico's total GHG emissions

The rise in traffic, crowded roads, small/polluting buses contributed to overcrowding and high GHG emissions in Mexico's many cities.

Project increases urban transportation efficiency in Mexican cities by building exclusive bus lanes, dedicated passenger stations and other infrastructure

Old buses are scrapped and replaced with larger cleaner buses transporting passengers faster and more safely

These measures help reduce CO2 emissions and improve overall quality of service

More Information:

<http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P107159>



Morocco: Ouarzazate Concentrated Solar Panel

Project Summary:

Purpose: To build a 160 MW solar power plant

IBRD Financing: US\$200 million

Project Term: 2012 - 2018



More Information:

<http://operationsportal2.worldbank.org/wb/opsportal/ttw/about?projId=P122028>

Ouarzazate Concentrated Solar Panel

Concentrated Solar Power (CSP): demonstrated technology in need to be scaled-up to bring costs down

This project accelerates deployment of CSP in a suitable location.

Morocco Southern region of Ouarzazate has exceptional solar potential and eventual access to European Union electricity markets favoring carbon-free electricity.

Together with other multilateral, bilateral agencies, and the Clean Technology Fund, the \$200 million World Bank loan helps finance the first phase (160 MW) of a 500 MW CSP system in Morocco.

Activities include:

- Setting a public-private partnership to build the 160 MW plant and facilities;
- To support the higher operational costs associated with the initial years of CSP

The Project is expected to reduce 240,000 tons of CO₂ per year



Project Example in Montenegro

Project Summary:

Purpose: Improve energy efficiency in buildings used for health and education services

Project Term: 2008 - 2012

IBRD Financing: US\$9.4 million



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Energy Efficiency in Public Buildings

Montenegro imports about one-third of its power to feed its growing electricity demands and to make-up for diminishing electricity production from the run-down plants and assets of the state-owned electricity company. A legacy of highly inefficient buildings and other facilities contribute to the drain on energy supplies in Montenegro.

The World Bank funded Energy Efficiency Project mainly finances energy efficiency investments, reducing energy consumption and improving environmental quality in public schools and health centers—and promoting new energy efficiency and supply technologies in targeted public buildings across the country.

The project is designed to be a model for positive energy efficiency activities in rest of the country's public sector and private companies, reducing national greenhouse gas emissions.

More information:

<http://web.worldbank.org/external/projects/main?Projectid=P107992&theSitePK=40941&piPK=64290415&pagePK=64283627&>



Project Example in Tunisia

Project Summary:

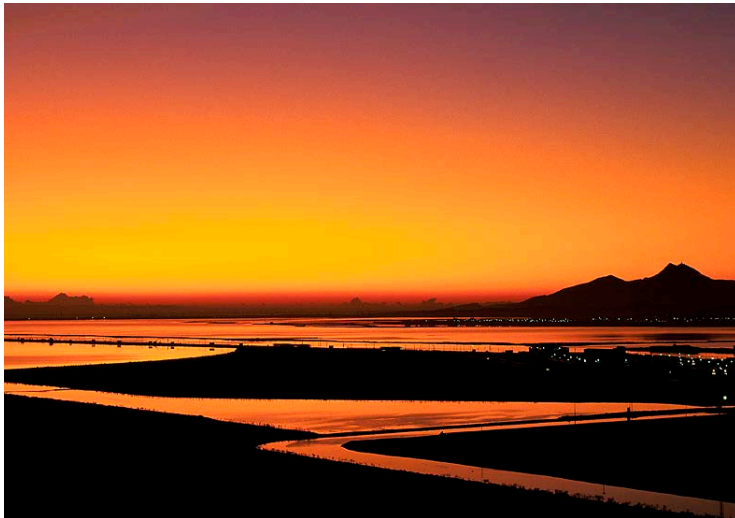
Purpose: To promote better water management

Project Term: 2009-2015

IBRD Financing: US\$30.6 million

Project ID: P095847

Adaptation: Improved efficiency in water use in irrigation and increased capacity for climate adaptation



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More Information:

<http://web.worldbank.org/external/projects/main?Projectid=P095847&theSitePK=40941&piPK=64290415&pagePK=64283627&menuPK=64282134&Type=Overview>

Second Water Sector Investment

The project promotes efficiency improvements in irrigation schemes, more reliable water supply in rural areas and increased capacity to plan for the current and future water management challenges, including climate change.

Compared to countries in North Africa and the Middle East and in spite of severe scarcity and stress in its aquifers, Tunisia has been able to capture and use more than 80% of the usable water thanks to infrastructure investments and good management policies.

Climate change will exacerbate scarcity and reliance on already-stressed groundwater. The project promotes more efficient use of irrigation water and increases capacity to plan and manage water in the future.



Project Example in India

Project Summary:

Purpose: To strengthen India's transmission infrastructure resulting in decreased greenhouse gas emissions through efficiency gains

Project Term: 2008 - 2014

IBRD Financing: US\$600 million

Project ID: P101653

Mitigation: Access to renewable energy (hydropower) in underserved areas through better interregional power exchange. Also increased efficiency of transmission



© Curt Carnemark/World Bank

More Information:

<http://web.worldbank.org/external/projects/main?Projectid=P101653&theSitePK=40941&piPK=64290415&pagePK=64283627&menuPK=64282134&Type=Overview>

Power System Development Project IV

India's weak power infrastructure constrains India's full growth potential and leaves many households without electricity services. The inefficiency of the power system contributes to environmental problems by forcing 60% of Indian firms and 40% of households to use diesel generators as back-up power sources. In addition, the poor connectivity between regions restricts India's ability to transfer surplus hydropower resulting in growing pressure to build additional coal-based power generation.

The project is will have a positive development impact by helping expand the transmission system and capacity and reduce transmission losses. It supports India's clean energy initiative by strengthening India's ability to transfer surplus hydro energy to power deficit regions in India, increase transmission efficiency, and avoid building additional coal-based generation.



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