

Financing the Transition to Energy Efficient Lighting

Aiming Zhou
Senior Energy Specialist

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Asian Development Bank

Basics of Asian Development Bank (ADB)

- Multilateral development finance institution established in 1966
- Poverty reduction is overarching mandate
- Provides financial and technical assistance
- 67 members – 48 from Asia and Pacific region
- Financial assistance:
 - \$21.57 billion approved financing in 2012
 - ADB invested US \$2.3 billion in clean energy projects in 2012

ADB's Asia Pacific Region

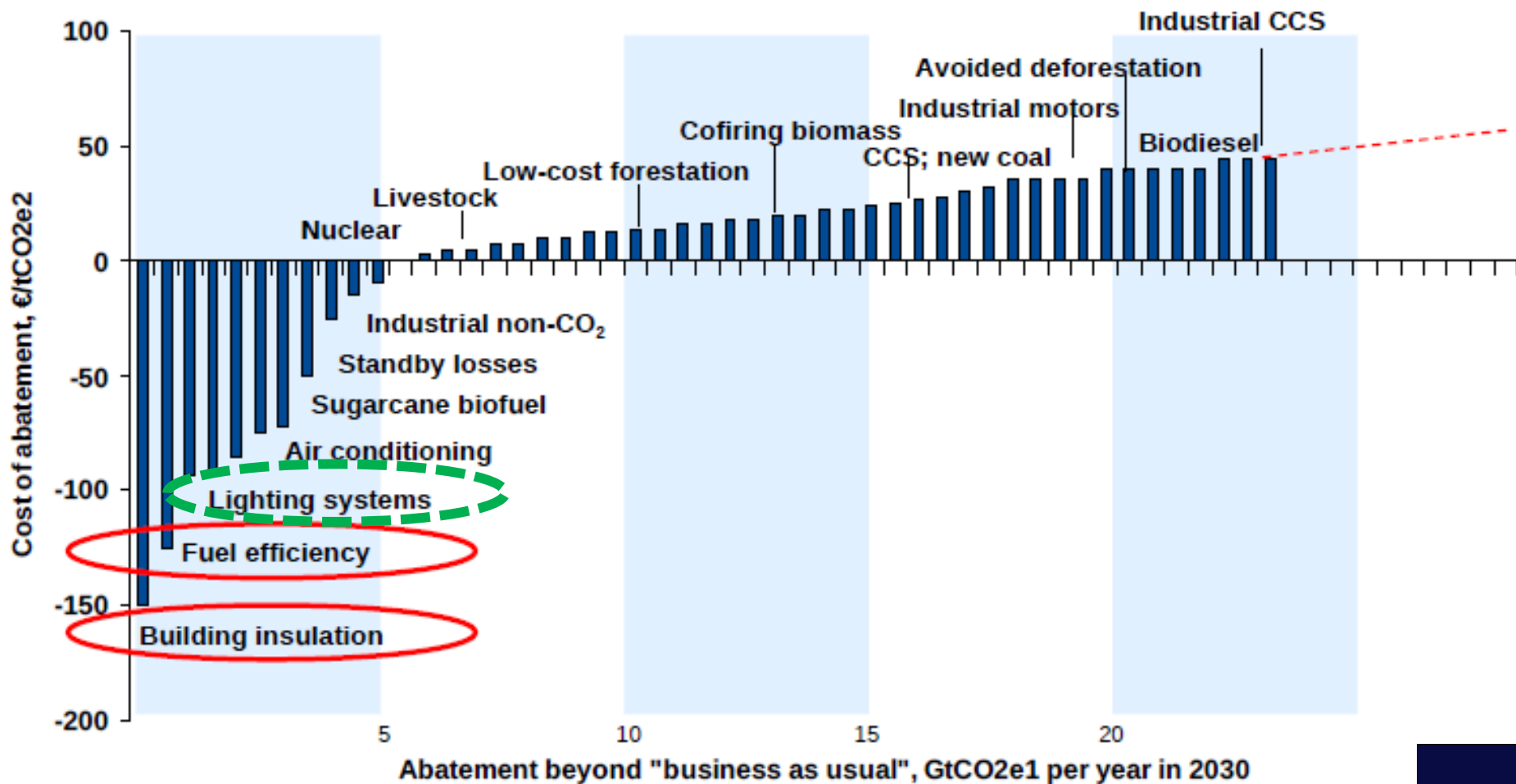


ADB's Operation : Instruments and Responsible Departments

- **Sovereign Loans** (Government Pipeline, Fiscal Guarantee, normally 25-26 years loan period with interest rate of LIBOR + 0.2-0.4%, 5-6 year grace period, and a commitment charge. The PPTA supports the project preparation) – **Regional Departments**
- **Nonsovereign Loans** (No requirement for government pipeline and fiscal guarantee, Government's no-objection required, LIBOR+risk premium, grace period, commitment charge and front-end fee). - **Private Sector Operation Department**
- **Technical Assistance and Grants** (to assist policy studies, capacity development and project preparation) - **Private Sector Operations Department, Regional Departments, and Regional Sustainable Development Department**

Why Energy Efficiency

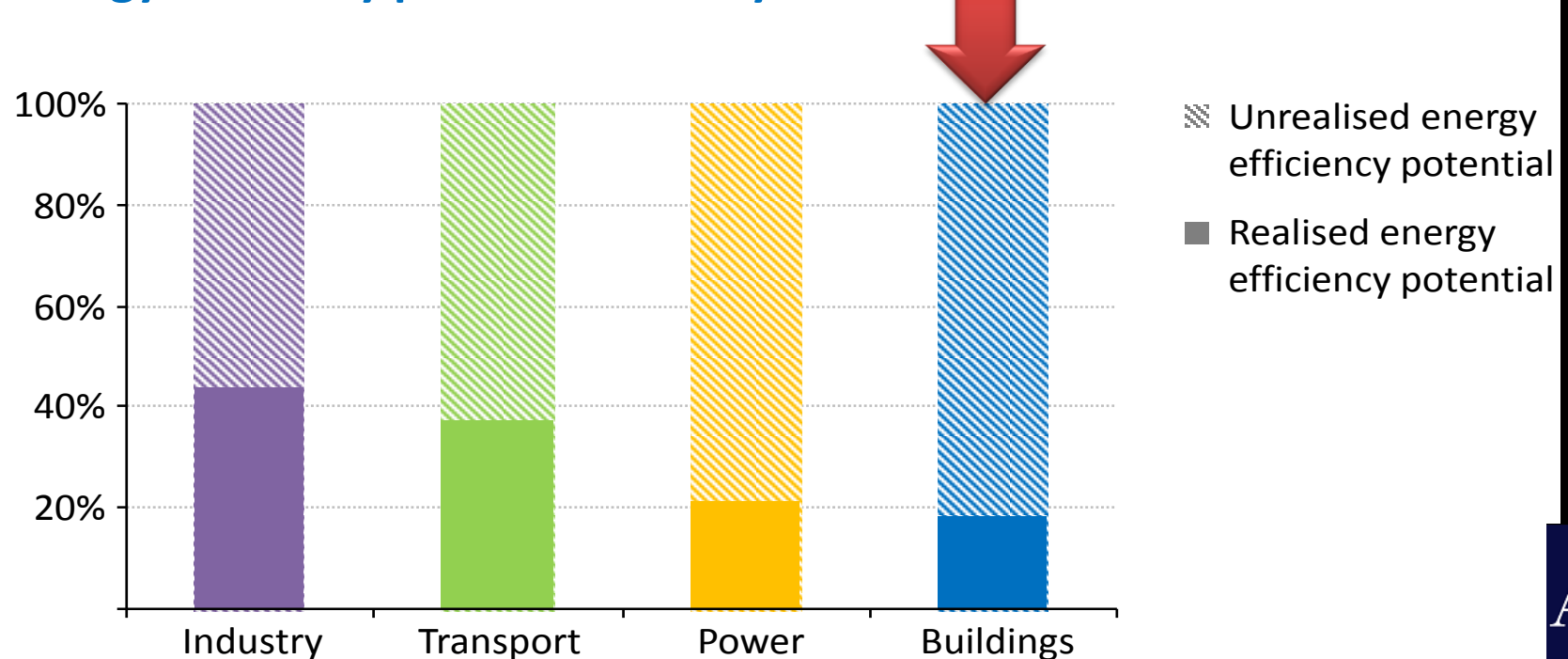
Cheapest Low-Carbon Solution: Energy Efficiency



A Huge Opportunity

- **Two-thirds** of the global economic potential of energy efficiency remains untapped to 2035, mostly due to non-technical barriers
- Economically viable efficiency measures can halve world energy demand growth to 2035 and delay “lock-in” of CO₂ emissions permitted under a 2 °C warming trajectory by **five years**
- EE creates net economic gains estimated at \$18 trillion to 2035, after additional investments of \$11.8 trillion, concentrated in Asia.

Energy efficiency potential used by sector in the New Policies Scenario



CFL Projects Invested by ADB

Philippine Energy Efficiency Project (2008)



Project Cost: \$46.5 million

- ADB Loan – \$31.0 million
- ADB Grant – \$ 1.5 million
- Government – \$14.0 million

- Reduce peak demand by about **450 MW**
- Defer power generation investment of **\$450 million**
- Reduce oil imports by about **\$120 million per year**
- Clean Development Mechanism (CDM) revenue (**350,000 tons reduced CO₂**)

1 million CFL = 50 MW power plant

With the Same Lumen Output

	9 W = 40 W	
	13 W = 60 W	
	18 W = 75 W	
	25 W = 100 W	

1,000,000 CFLs
13 Watt each



13,000,000 watts



13 MW

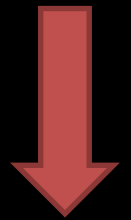
1 million CFLs cost
\$1.5 million

Savings of about
50 MW of
equivalent generation

1,000,000
incandescent
60 Watt each



60,000,000 watts



60 MW

50 MW Power Station costs
\$50 million

Philippine Energy Efficiency Project (PEEP)

Component 1:

Efficient Lighting Initiative

- Retrofit Government Office Building
- National Residential Lighting Program
- Public Lighting Retrofit Program
- Energy Efficiency Testing and Lamp Waste Management

Component 2:

Efficiency Initiatives in Buildings and Industries

- Super ESCO
- Efficient Building Initiative

Component 3:

Communication and Social Mobilization

- Communication for Efficient Lighting
- Promoting Efficiency in Everyday Life

Component 4:

Project Implementation Support



Philippine Efficient Lighting
Market Transformation Project
(PELMATP)



Communication and Social Mobilization



SAVE



P400
a year

Switching to CFL lowers
electric consumption,
guarantees longer
lamp life, and helps protect
the environment.



**Simple
Message is
No Lecture!!**

2 YEARS
warranty

XYZ, Inc.

**COMPACT
FLUORESCENT LAMP**



75 watts = **15 watts**

Lamp Life 10,000 hours



10 x 1,000 hrs **10,000 hrs**

**If this lamp fails to work,
return for replacement
by or before
December 2010.**

**Text DOE 2920
for more information.**





Pakistan Energy Efficiency Project (2009)

- Procurement: 2 supply contracts for 30 million units signed in 2012 (100% financed by ADB/AFD loans)
- Distribution : Each utility responsible within its operation region, using its own resources (counterpart co-financing)
- Lessons and Experience
 - Cost effective to help addressing power supply deficit
 - Tailored technical specifications (country standards, public acceptance, wide available suppliers, rapid technology shift)
 - Country-wide rollout – commitment, planning and public awareness/education
 - CDM opportunities – require advance actions

Nepal Energy Access and Efficiency Improvement Project (2009)

Grant 0182/Grant 0183





CFL program and Waste Management

■ CFL program design prepared

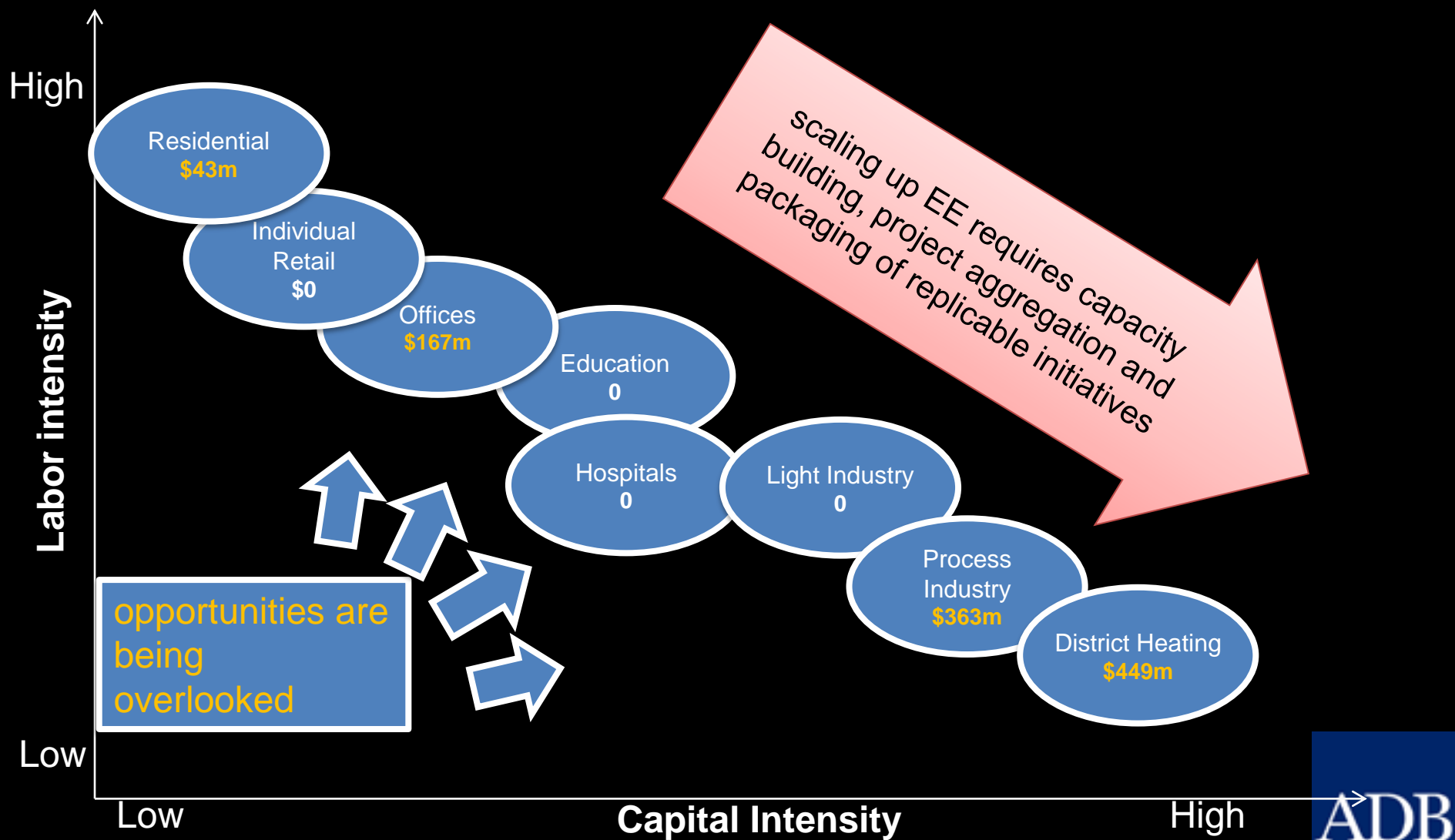
- CFL procurement from international supplier.
- 8 regional centers selected for distribution and no. of CFL for each center determined.

■ Lamp waste management strategy for Nepal prepared

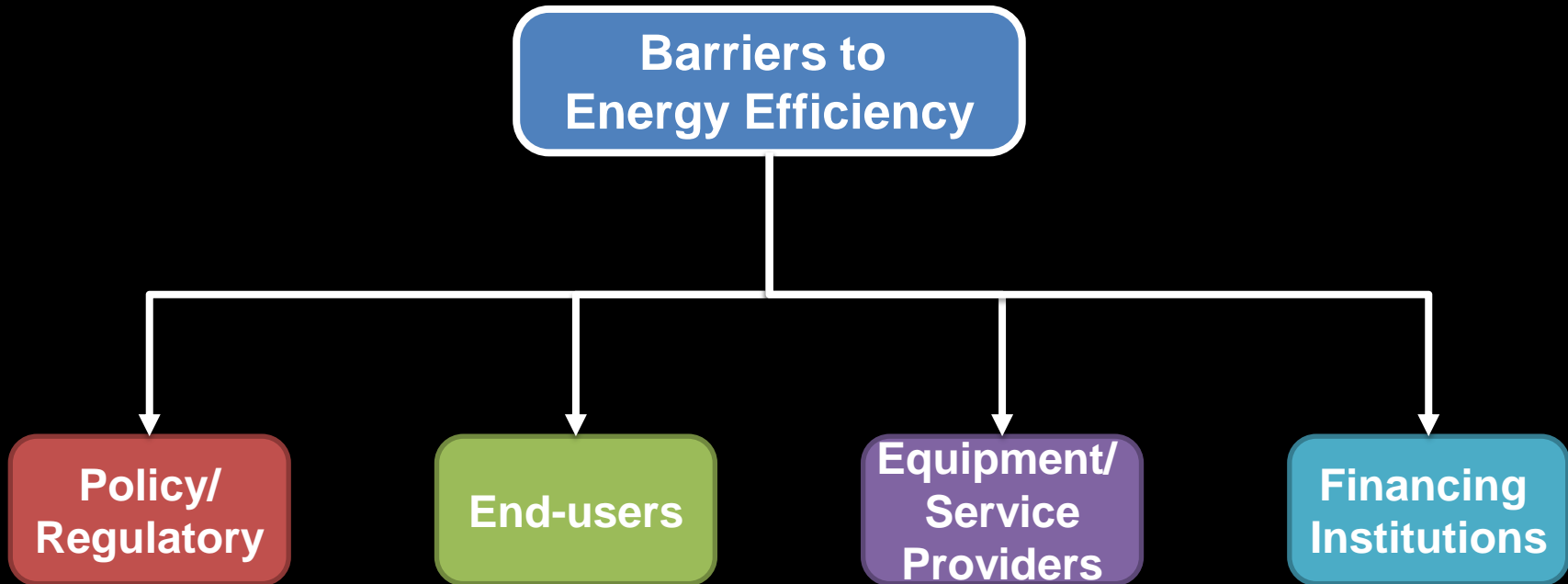
- Extended Producer Responsibility
- Consumer Awareness on Hazardous of Mercury- *awareness campaign/ distribution of leaflets*
- Handling and Disposal of Incandescent Bulbs- *recycling/ use of bulb eaters and disposal in landfill sites*
- Transportation and Treatment of disabled Incandescent Bulbs- *use of bulb eaters*
- Handling of Fluorescent Lamps- *various procedure*
- Collection of Spent Lamps- *at NEA/ retailers*
- Transportation and Processing- *Lamp Crushing and Filtering of dust particles and mercury & Disposal of Activated Carbon Filter to landfill sites and recycling of glass*

Why Low Hanging Fruits Unpicked

ADB's Demand-Side Energy Efficiency Investment



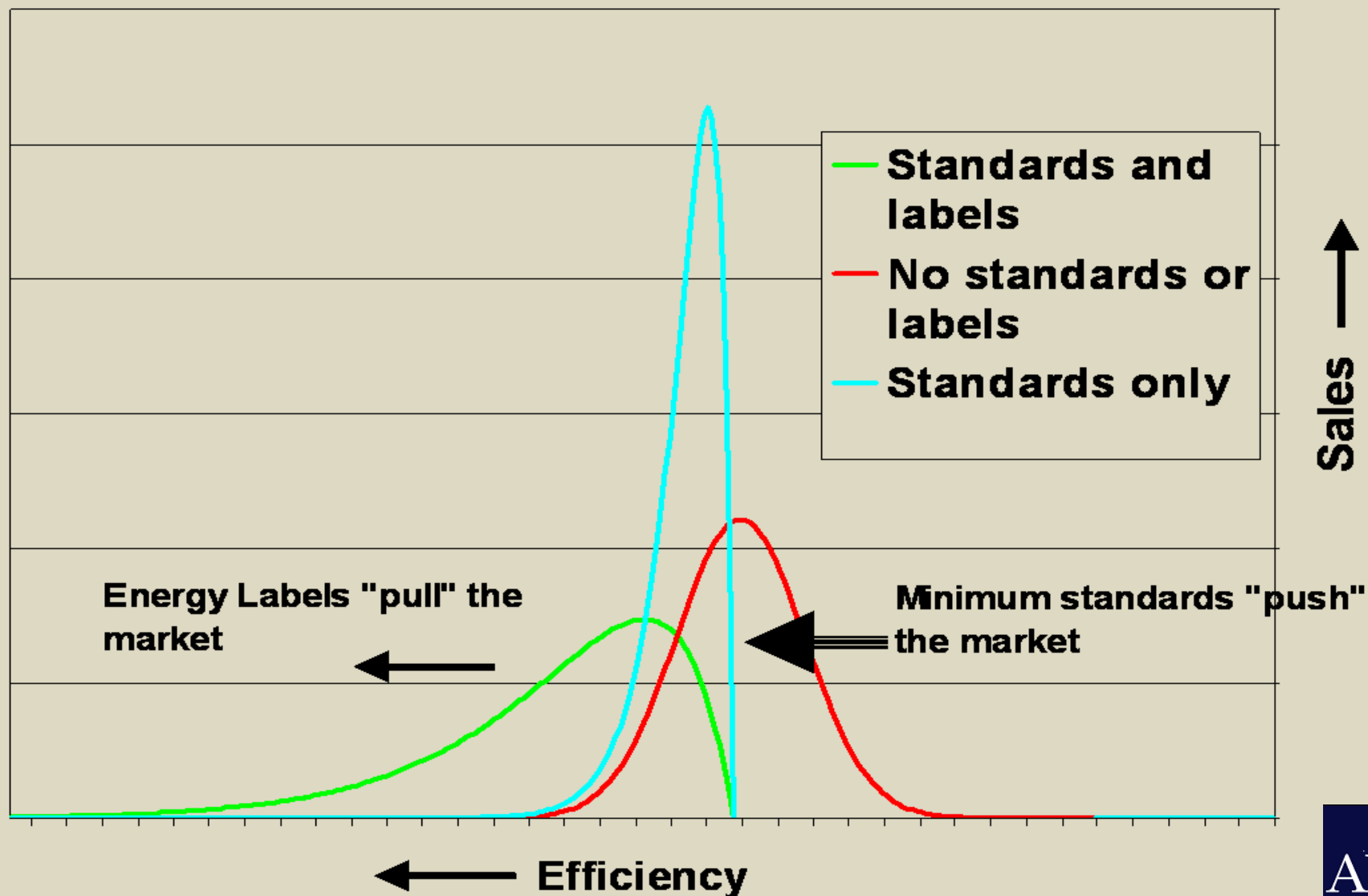
Barriers



- Limited policies and enforcement
- Lack of management awareness
- Limited knowledge, information and services
- Lack of financing

How

Market Transformation



Moving from Public to Commercial Financing

**Leveraging Commercial Financing
through Performance Contracts**

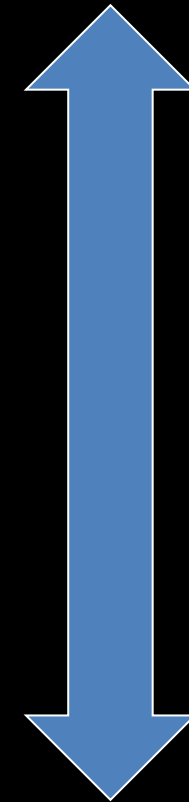
Partial Credit or Risk Guarantees

Dedicated Credit Lines

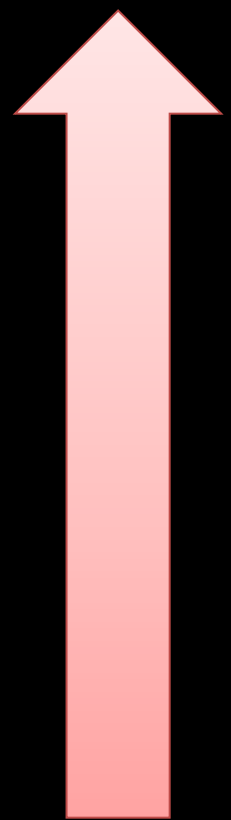
Energy Efficiency Funds

**Commercial
Financing**

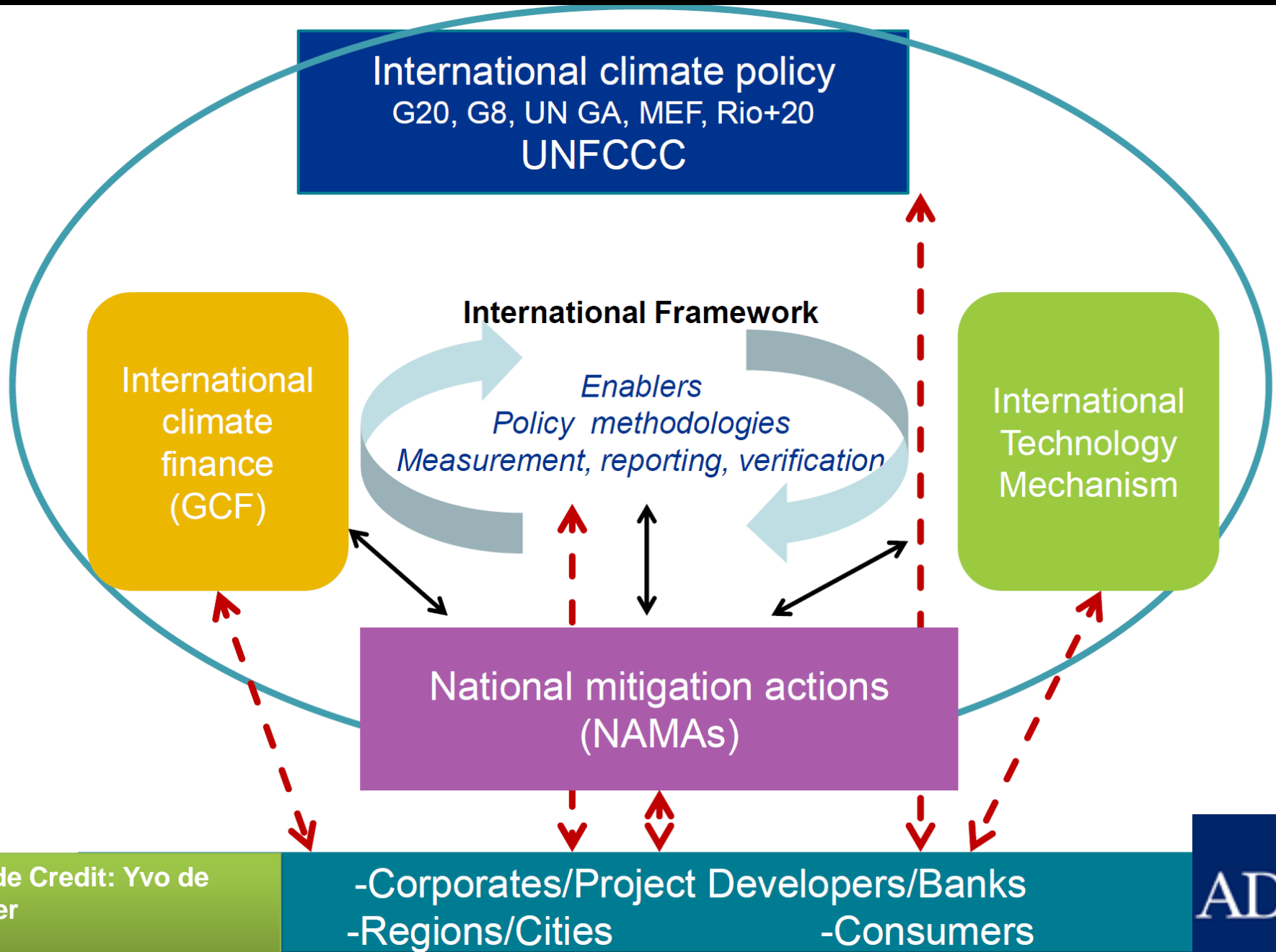
**Market
Maturity**



**Public
Financing**



Toward Low-Carbon Future



Thank You!

For more information:

Aiming Zhou

azhou@adb.org

www.adb.org/clean-energy