



Lesson on energy efficiency from evaluation

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IEG's Climate Evaluation Series





Phase I:
Win-win Energy Policies
2009

Phase II:
Mitigation
2010

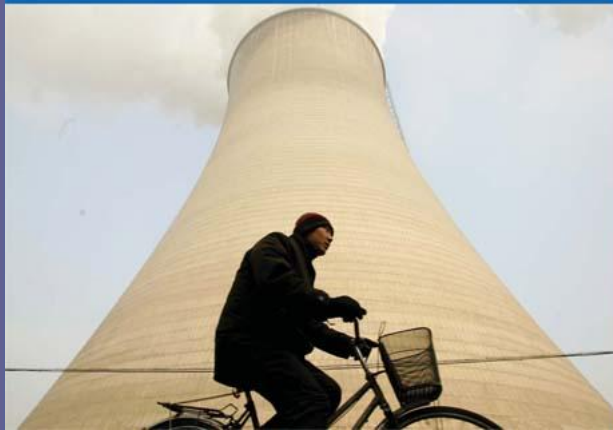
Phase III:
Adaptation
2012

IEG
INDEPENDENT EVALUATION GROUP



Climate Change and the World Bank Group

Phase I: An Evaluation of World Bank Win-Win Energy Policy Reforms



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PHASE II: THE CHALLENGE OF LOW-CARBON DEVELOPMENT

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IEG Study Series

A woman wearing a red sari and a colorful headscarf is focused on her work. She is using a small, white, hand-operated tool to work on a piece of light-colored material, possibly a textile or craft project.

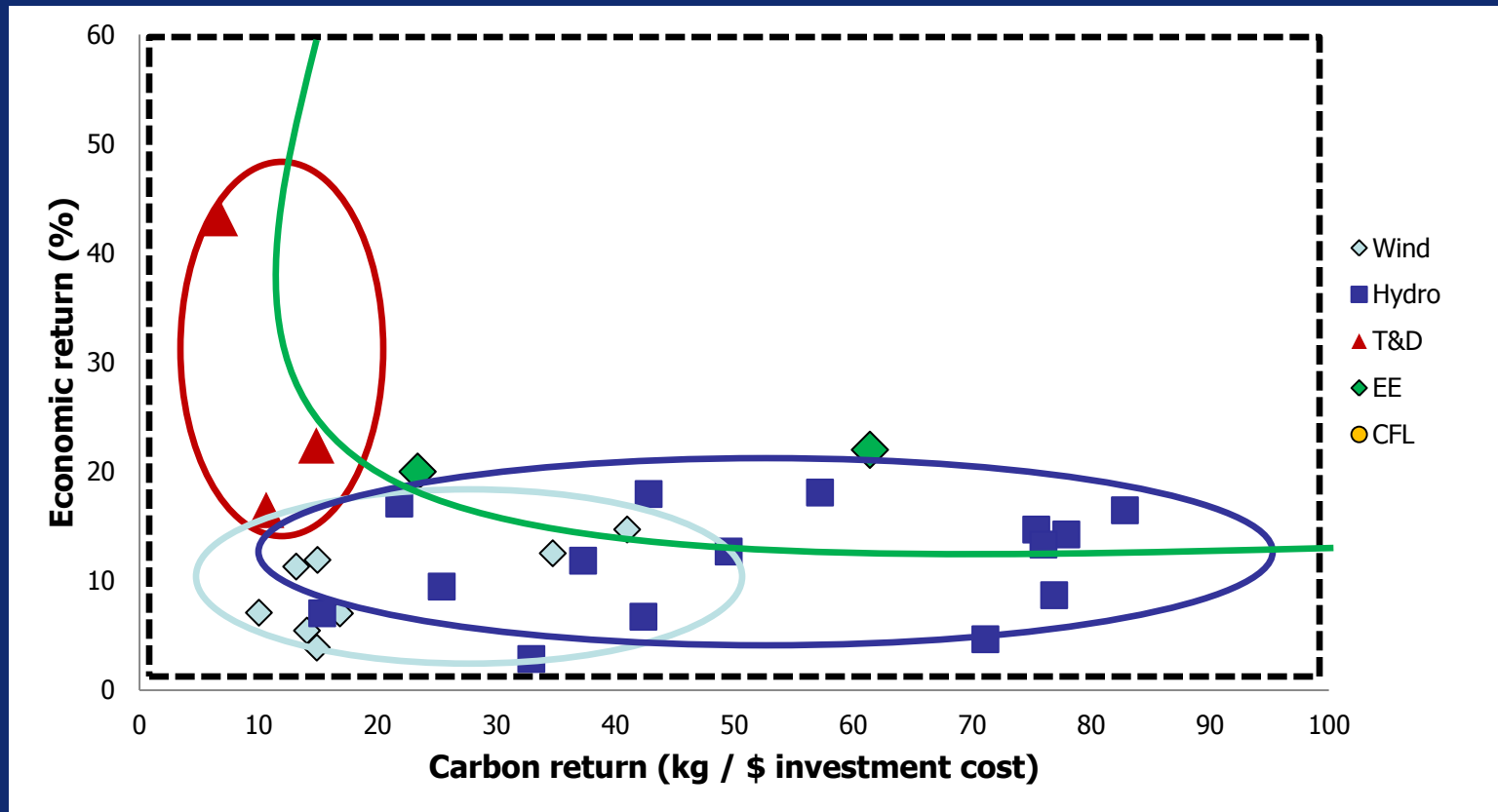
HURRICANE ISABEL GOES-12/VISIBLE 11:45UTC 11 SEP

Energy efficiency investments are highly cost effective

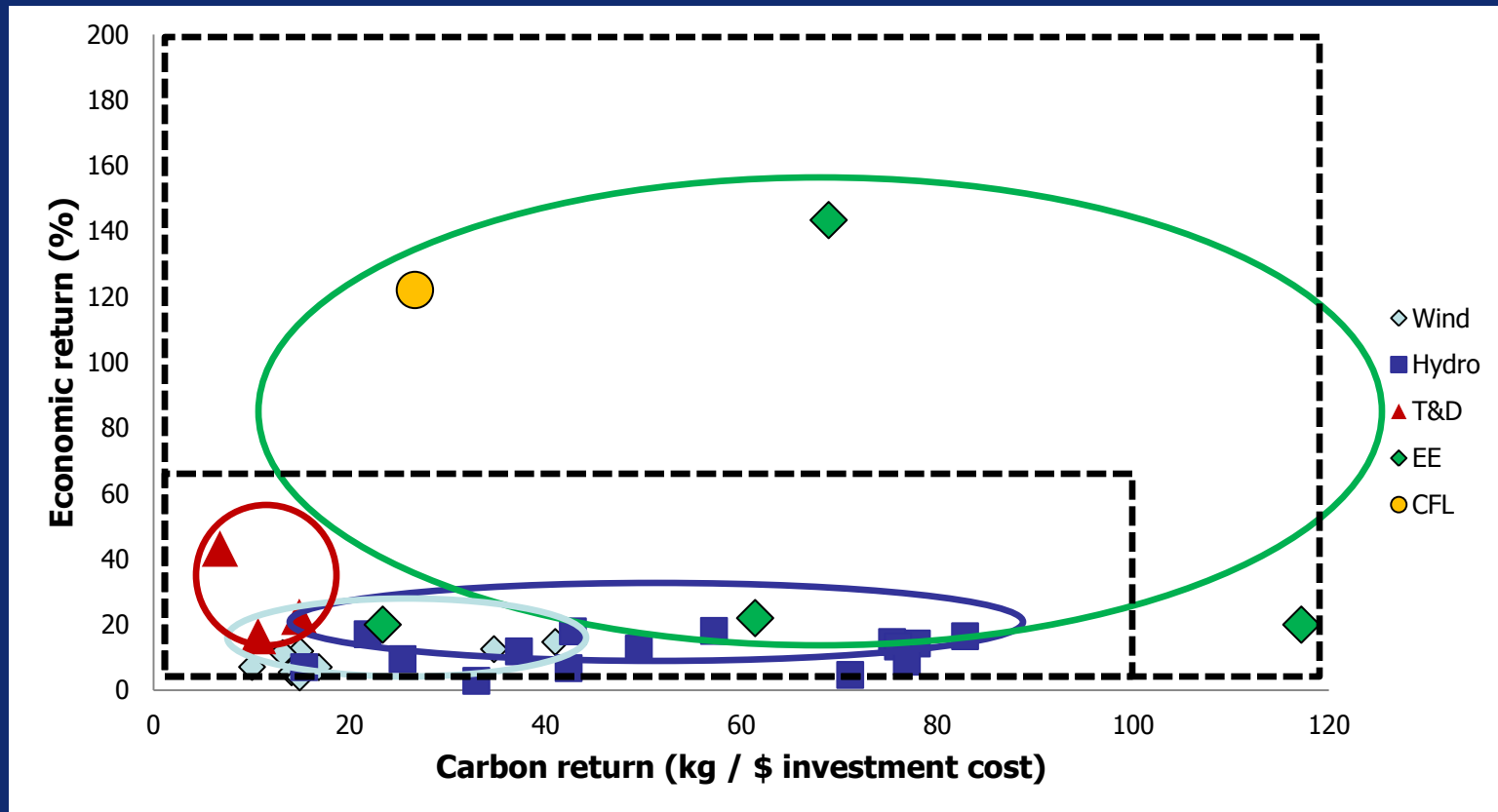
- ▶ \$1 of GEF support catalyzes:
 - 2.2 tons CO₂ reduction from energy efficiency
 - 0.4 from renewables
- ▶ Some energy efficiency investments offer paybacks in weeks



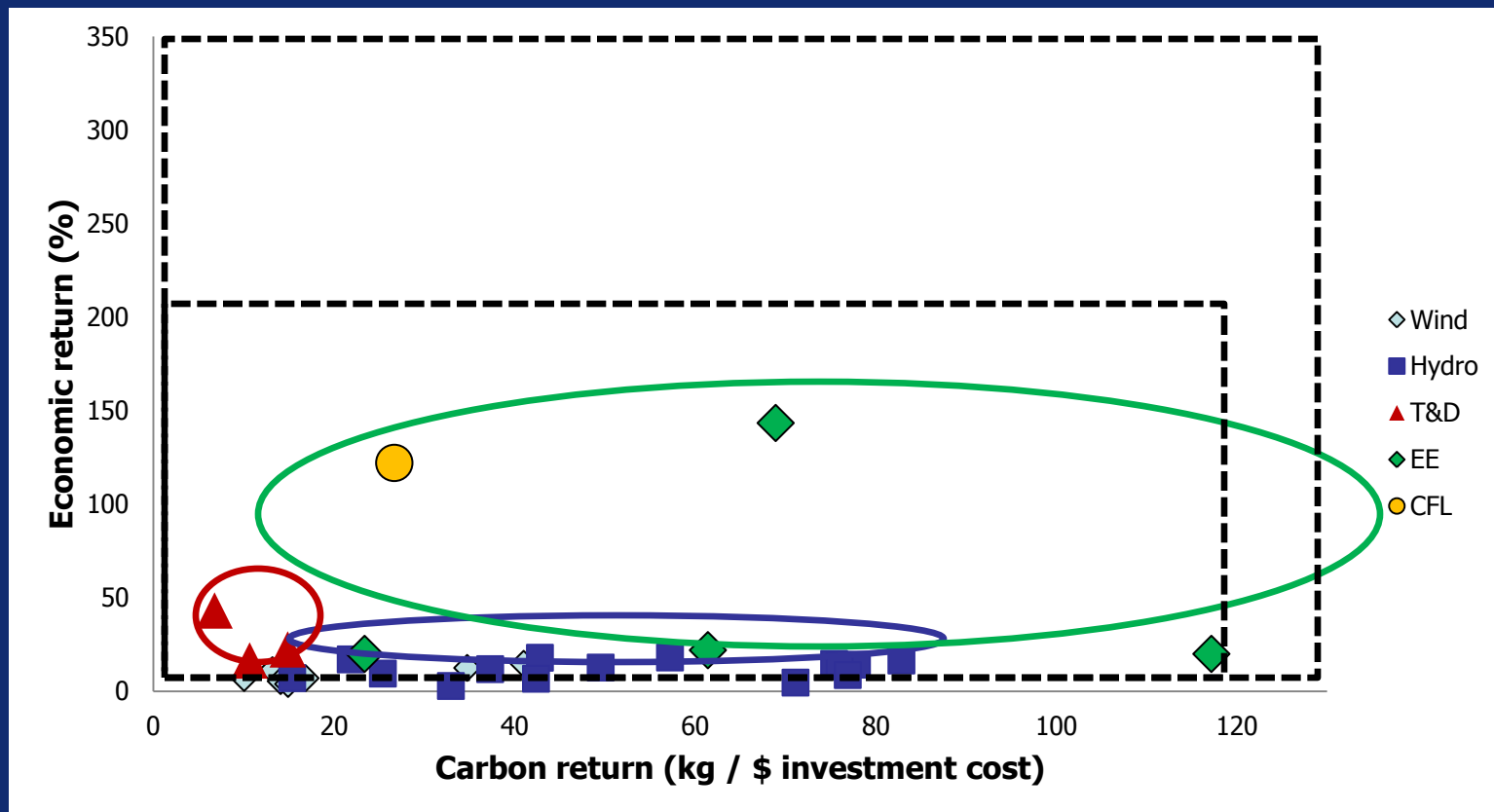
Economic and carbon returns to renewable energy and energy efficiency projects



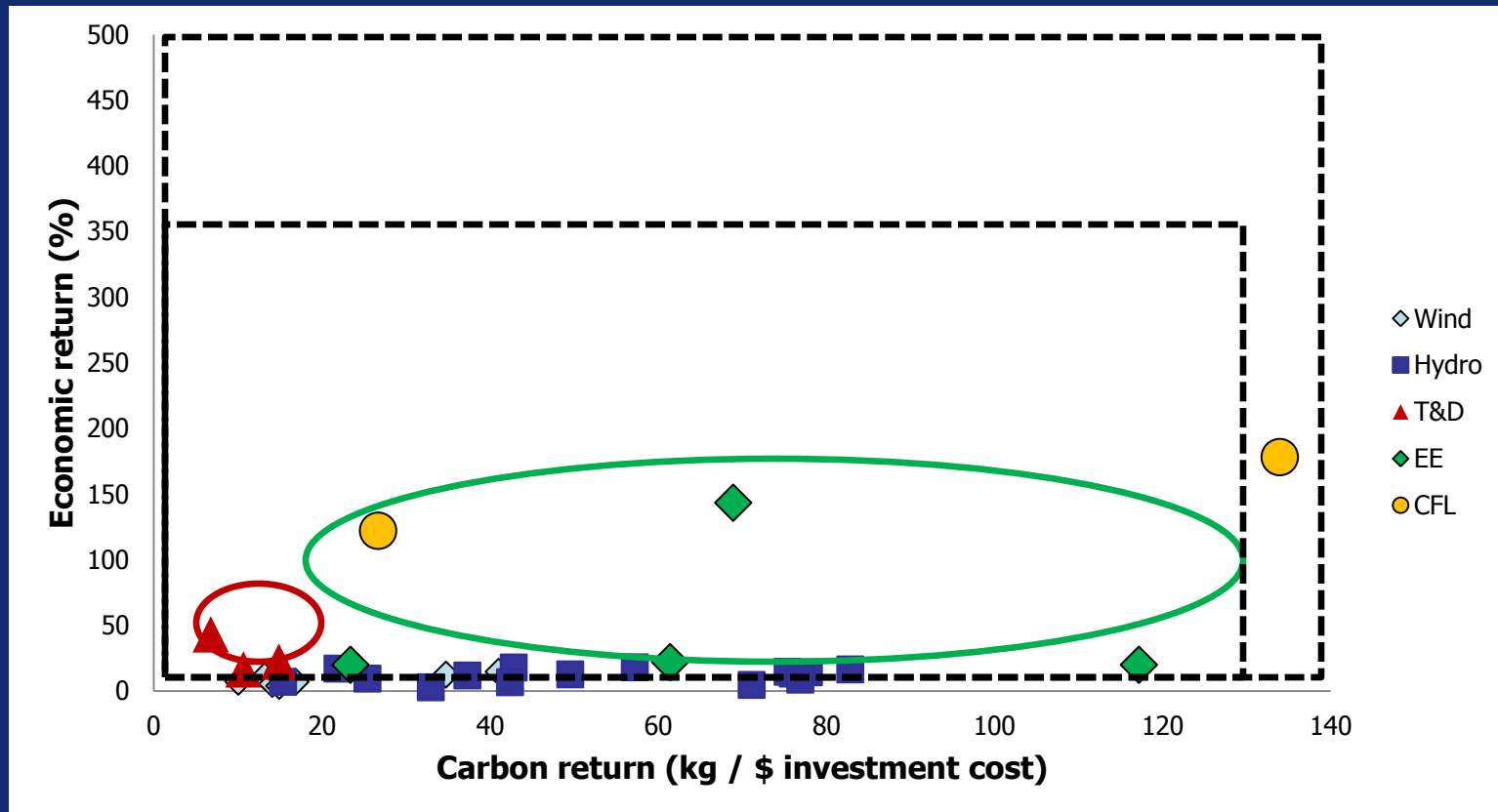
Economic and carbon returns to renewable energy and energy efficiency projects



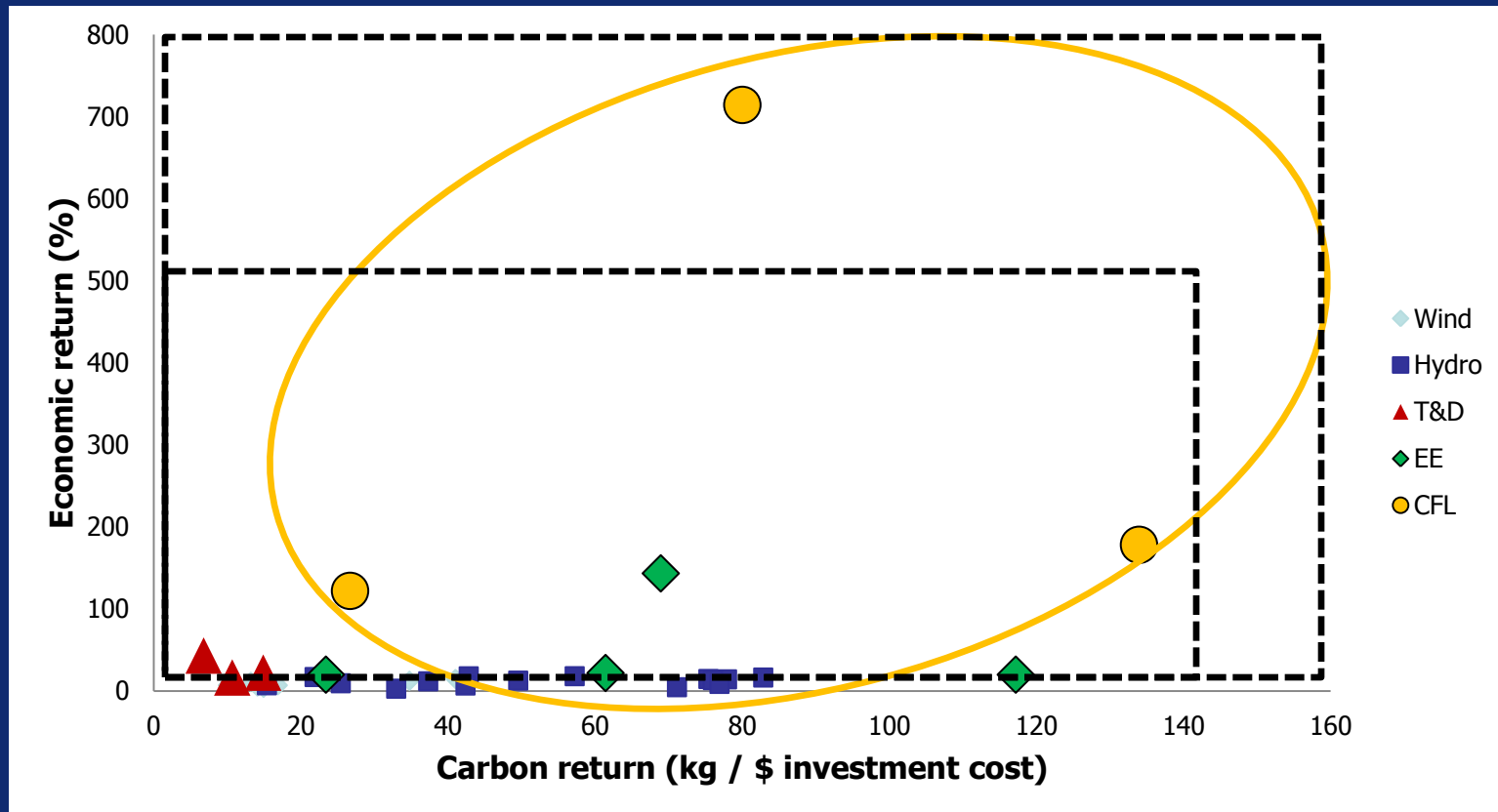
Economic and carbon returns to renewable energy and energy efficiency projects



Economic and carbon returns to renewable energy and energy efficiency projects



Economic returns to energy efficiency dwarf those of almost all development projects



Fossil fuel subsidies are burdensome, regressive, GHG-promoting,



- ▶ \$300 to \$600 billion annual subsidies
- ▶ Energy subsidies larger than public spending on health in many countries
- ▶ Disproportionately go to wealthier groups.
- ▶ Subsidy removal would reduce global CO2 emissions by 7%
- ▶ Subsidy removal would boost returns to energy efficiency and competitiveness of renewable energy

Social safety nets have been used to compensate for fuel price rises



Energy efficiency finance: diagnosis of barriers and prescription



▶ Diagnosis

- Firms don't understand opportunities
- Banks worry that EE investments won't be profitable

▶ Prescription

- Energy audits and technical assistance for companies
- Technical assistance for banks
- Temporary subsidized loan guarantees

▶ Expectation

- Once banks and firms are comfortable with these loans, subsidized guarantees are no longer necessary – the market will be transformed

▶ *Diagnosis not entirely correct...*

Banks finance *companies*, not *projects*

- They understand that energy efficiency *projects* are profitable.
- Their big worry: will I get paid back? Is the *company* trustworthy? Can it provide collateral?
 - *Guarantees substitute for collateral*





Conclusions on energy finance

- ▶ Subsidized guarantees can unlock profitable, GHG reducing opportunities for small and medium enterprise.
- ▶ Guarantees are often not necessary for large enterprises.
- ▶ Guarantees are not transformative.
- ▶ Technical assistance helps banks market loans to creditworthy clients.

Demonstration projects can transform markets...

- ▶ When they pay attention to *what* is being demonstrated, *why*, and *to whom*.
- ▶ GEF grant support has been important.



Potential bias against energy efficiency

Generation

- ▶ Lower return but:
 - Higher ratio of \$ volume to preparation cost
 - More visible



Efficiency

- ▶ High return but:
 - Complex to prepare
 - Low \$ volume
 - No ribbons to cut



Need for monitoring and evaluation



- ▶ Inconsistent, spotty follow up on impacts of energy efficiency projects
- ▶ Needed:
 - Real-time monitoring
 - Comparison groups
 - Economic analysis
 - GHG impact monitoring
 - Long term sustainability monitoring
- ▶ This info could help raise the profile of energy efficiency projects

Thank you!



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