Connecting the Americas 2022 Initiative Evaluation

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Evaluation Focused on 3 Questions

1. Did the Connect 2022 initiative affect the motivation and behavior of power sector agents to trade electricity in the Central American (CAM) regional market (MER)? If so, how did it affect them? What factors affect their decisions to trade electricity?

2. How did the initiative influence CAM power sector agents’ decisions on whether and how much to invest in power infrastructure (including generation capacity expansion, transmission and distribution)? If no influence, why not? What other factors affected their decisions to invest?

3. What top three steps can be taken to improve the effectiveness of the initiative in spurring power trade and new investment in CAM?
Data Collection Effort to Develop a Baseline Assessment

(a) Factors motivating Central American participation in regional power markets;

(b) Related investment decisions by power sector companies; and

(c) Connect 2022’s effectiveness in enabling these factors.
Institutional Capacity Building of Regional Electricity Market (Mercado Eléctrico Regional-MER)

**INPUTS**
- Reduce investment barriers
- Develop longer term contracts
- Increase market size
- Improve quality of regional grid
- Develop SOPs
- Develop standards
- Train staff

**STEPS**
- Harmonize regional infrastructure
- Strengthen functioning of CRIE
- Harmonize bidding and procurement
- Dispatch more intermittent power
- Decrease price volatility
- Increase RE share in energy supply
- Avoid GHG emissions

**DATA**
- Trends in new non-fossil fuel installations
- Trends in regional energy trade (# & size)
- GDP and related data
- Types & shares of RE resources deployed
- Installed capacity of RE generation facilities
- New generation capacity installed
- Price of energy
- Trends in CO$_2$/capita, CO$_2$/GDP, etc.
- Estimated GHGs avoided over time
Regional Energy Market Institution Building

Regional Energy Market is important because:
• Individual national markets less efficient
  • Supply/demand not matched evenly
  • Currently rely on spot-prices (could hinder market development)

• Reduce Market Inefficiencies
• Improve T&D Grid Quality
• Decrease Power Price Volatility
• Improve Distribution Efficiency
• Improve Transparency in Pricing & Ops

• Increase in regional energy trade
  (number & size of transactions)
• Decrease price volatility
• Track number of new non-fossil installations ($, MW, #)
• CO₂/capita, CO₂/GDP
• Frequency/intensity of energy shortages
  load shedding
• Frequency/intensity of problems putting
  power on the grid
• Government warnings/restrictions on
  energy use
SUPPORT FOR NATIONAL AND REGIONAL INSTITUTIONS

- Develop procurement & transmission rights
- Improve preparedness

Establish/strengthen effective national institutions that support LED (GCC IR)

Improved national investment climate for CE (DOS)

Improved enabling environment for CE (GCC IR)

- (DSM)
- Technological
- Industrial
- Public
- Environmental

“Sustainable” Energy Use at Regional Level

“Sustainable” Energy Use at National Level

Harmonized laws, regulations, tariffs, procurement & bidding practices, etc.

- Increased economic development
- Stabilize/decrease electricity tariffs

Cleaner Base Dispatch (Vol / %RE) [“Dirty” marginal dispatch reduced]

Establish energy pool based on long-term contracts

Develop Regional Energy Markey

Improve dispatch conditions for RE

Improved regional investment climate for CE (DOS)

Increase energy security (DOS)

Energy Consumption Reduction

Energy Intensity Reduction

Reduced GHG Intensity in Grid (national & regional)

GHG Emissions Reductions (tCO₂e)
The evaluation team interviewed key stakeholders, completed a desk review of literature, and conducted a mini-survey.

The evaluation concluded that Connect 2022:

- Has successfully supported the development of national energy plans that are key building blocks for robust, well planned national energy sector initiatives;
- Has yet to convince CAM countries to include specific strategies, timelines, targets or operational guidelines for regional energy trade in their national planning processes;
- Should continue promoting regional integration through more focused support to regional institutions that are currently weak; and
- Could further enhance regional electricity trade by helping CAM countries design long-term transmission rights that help international and private investors.
Connect 2022 has successfully supported the development of national energy plans that are key building blocks for robust, well planned national energy sector initiatives.

- All stakeholders stated that this support has resulted in effective dialog on energy sector issues in CAM;
- Energy sector resources are well documented;
- Multilateral development banks have been able to build on this support to increase investment flows; and
- Private sector investors reported increased interest in CAM as a result of reductions in perceived risk of doing business
Connect 2022 has yet to convince CAM countries to include specific strategies, timelines, targets or operational guidelines for regional energy trade in their national planning processes.

- CAM countries envision pursuing their national agendas without necessarily harmonizing their efforts with regional priorities;
- Nations prefer bilateral arrangements with partners;
- CAM countries are reluctant to support institutional strengthening of the regional bodies associated with the MER;
- Without more focused support to regional institutions, these bodies will continue to be weak and regional integration will not be possible;
- Stakeholders would benefit from a clear articulation of the connections between lower energy prices, reliable energy supply, and increased access to energy to broader national and regional concerns related to economic development, immigration, health outcomes and worker productivity.
Connect 2022 could further enhance regional electricity trade by helping CAM countries design long-term transmission rights that help international and private investors.

- The issue of long-term transmission rights was brought up by all stakeholders;
- There is no consensus on the definition of “long-term” and on whether establishing such rights would ultimately lower energy prices in CAM; and
- There is consensus on the need for such rights as a way to lower the risks associated with investing in the CAM energy market.
Connect 2022 could work with CAM partners to facilitate private sector investment flows into the energy sector.

- Create an energy exchange (or an energy users’ group) that buys the lowest-cost energy and increases the efficiency of dispatchers to clear markets;

- Persuade the CAM nations to invite Mexico and Colombia to join a treaty that allows these two countries to work directly with the MER on energy trading issues and integrate national and regional energy planning into a larger dialogue on economic development, immigration and regional security issues; and

- Help strengthen existing MER institutions, regulations and guidelines to:
  - Establish long-term transmission rights;
  - Support trans-national projects.
Thank you!
Questions?