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Promoting Clean Energy in Central Asia – USAID's Approach

CAREC Energy Sector Coordinating Committee Meeting
11-12 May 2017

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Our approach includes three interrelated priorities

- Cost-competitive utility-scale renewable energy
- Energy efficiency to reduce losses and operational costs
- Regional collaboration for cross-border electricity trade

These priorities cannot be advanced without close and sustained coordination with the countries and the development partners

Elements of our program

- **Energy Links** provides support to regional organizations and CA countries
  - CASA-1000 Secretariat
  - Regional power market
  - Bi-lateral support to Tajikistan and Turkmenistan
- **Power the Future** provides TA for deployment of renewable energy and energy efficiency in all five Central Asian countries
- **U.S. Department of Energy – National Renewable Energy Lab** to strengthen countries capacity in power system planning and grid-integration strategies.

Our technical assistance to host governments includes:

- Power sector planning/policy framework
- RE forecasting to improve integration into existing transmission and distribution systems
- Regional energy trade
- Improving legal and regulatory frameworks and corporate government structures
- Engagement with the private sector
- Training for cost-effective RE deployment and integration
- Enhanced coordination and knowledge management

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Power Transmission Expansion Connectivity (PTEC)

Corporate Management Improved

- Strengthen and expand generation, trans and distro.
- Help the country's utility company become financially sustainable; strengthening corporate governance, management, and operations.
- Supporting a power utility management software suite that helps automate its business processes.
- Customer bills are now generated electronically and payments done on-line.
- Increased revenues by 33% and increased revenue collection by 35%.
- Public utility no longer depends on government subsidies; profitable since 2011.

Power Transmission Expansion Connectivity (PTEC)

Generation and Transmission

- **Arghandi-Ghazni Transmission Line –** 111km 220kV double circuit transmission line from Arghandi Substation through Sayedabad and Ghazni City (98% complete)
- **Arghandi-Ghazni Substations –** two 220/20kV substations at Sayadabad and Ghazni (93% complete)
- **Salang Tunnel Substation -** high voltage 220kV Substation and a 20kV network. (Notice to Proceed was issued)

Other Energy Infrastructure Programs

- **Afghanistan Infrastructure Trust Fund (ADB)** USAID funded projects include 500 kV transmission line, 220kV transmission line, and more.
- **Kajaki Hydropower plant -** Installation of a third turbine to increase the generation capacity by approximately 18.5MW
- **Sheberghan Gas Generation Activity -** Technical assistance/engineering services to support the development of natural gas resources.
- **Engineering Support Program -** Engineering support/TA in transportation, vertical structures, energy, and water/sanitation.

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Signature Projects & Results

Projects

- Improvement of distribution systems;
- 128 MW added to Tarbela Dam;
- 90 MW to be added to Mangla Dam;
- Completion of Gomal Zam & Satpara Dams;
- Rehabilitation of thermal and hydropower plants;
- Kurram Tangi Dam Project (Kaitu Weir, Dam and hydropower)

Results – Successes

- 2,800 MW capacity added to electricity system;
- ~33 million people benefited;
- $400 M annual increase in DISCOs revenue;
- Liquefied natural gas (LNG) terminal operating;
- National Power Policy 2013 developed;
- Key studies: cost of load shedding, circular debt, grid audit and integration studies.

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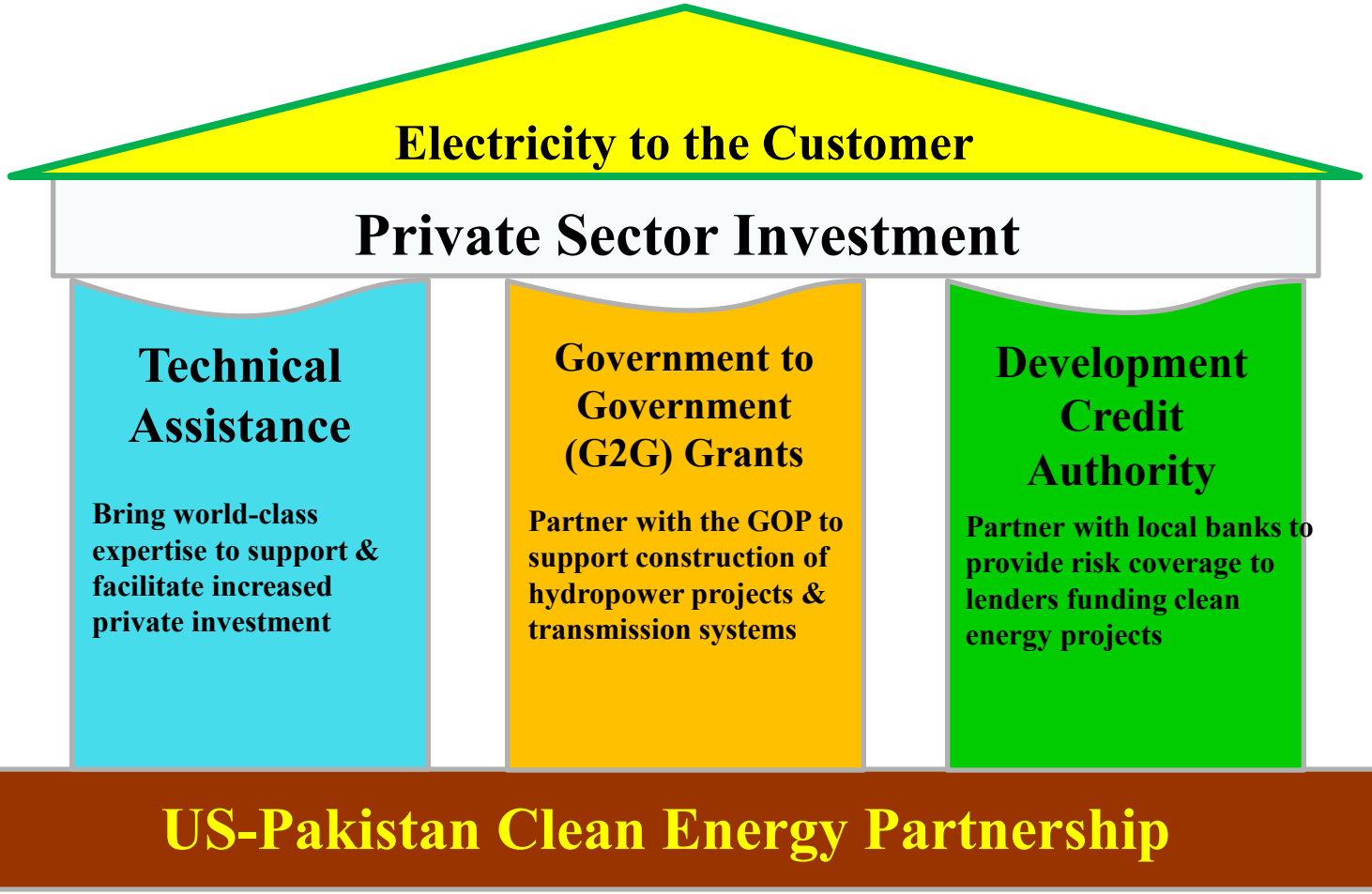
Path Forward: Increased Private Sector Investment through the Clean Energy Partnership



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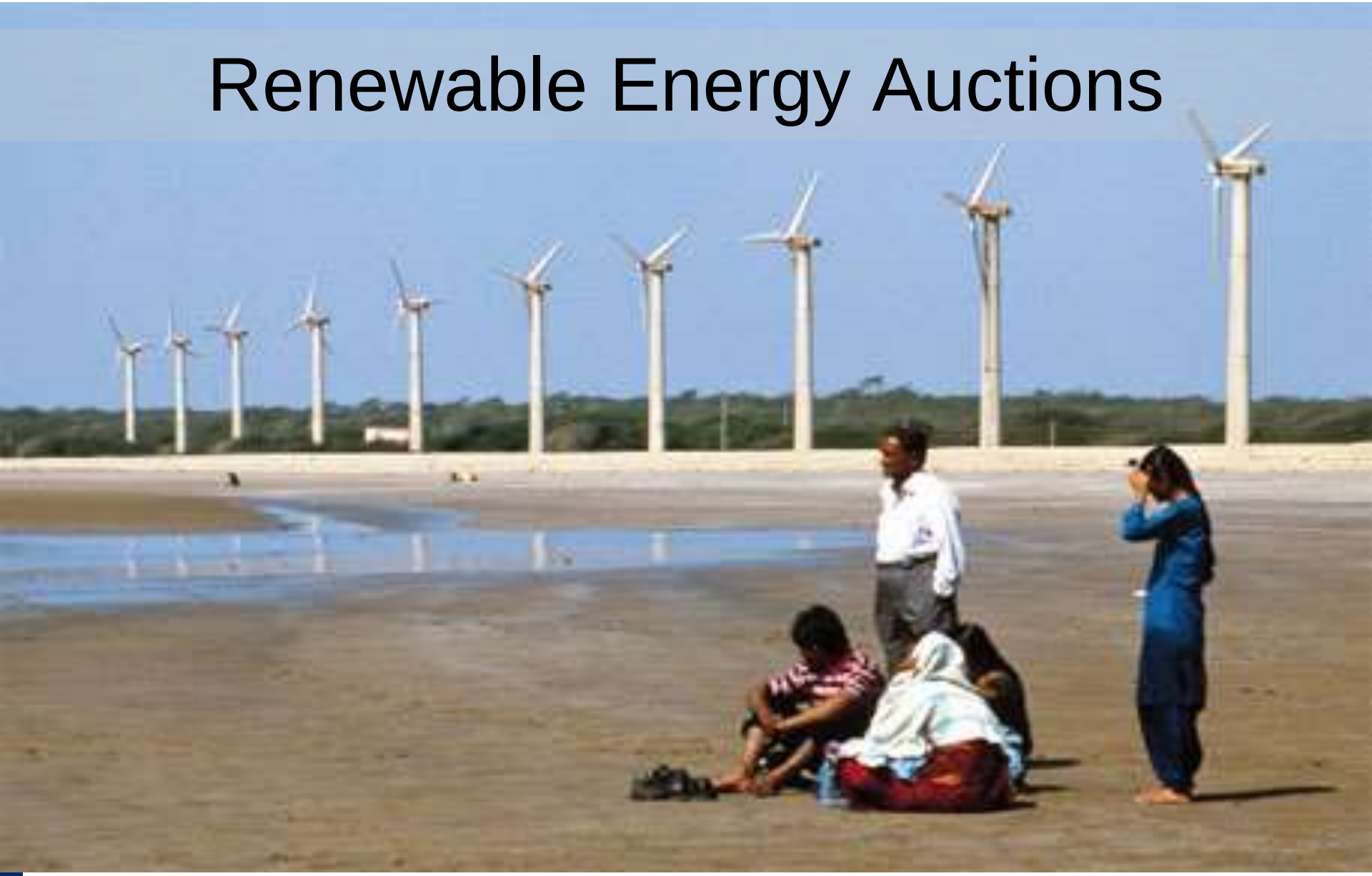
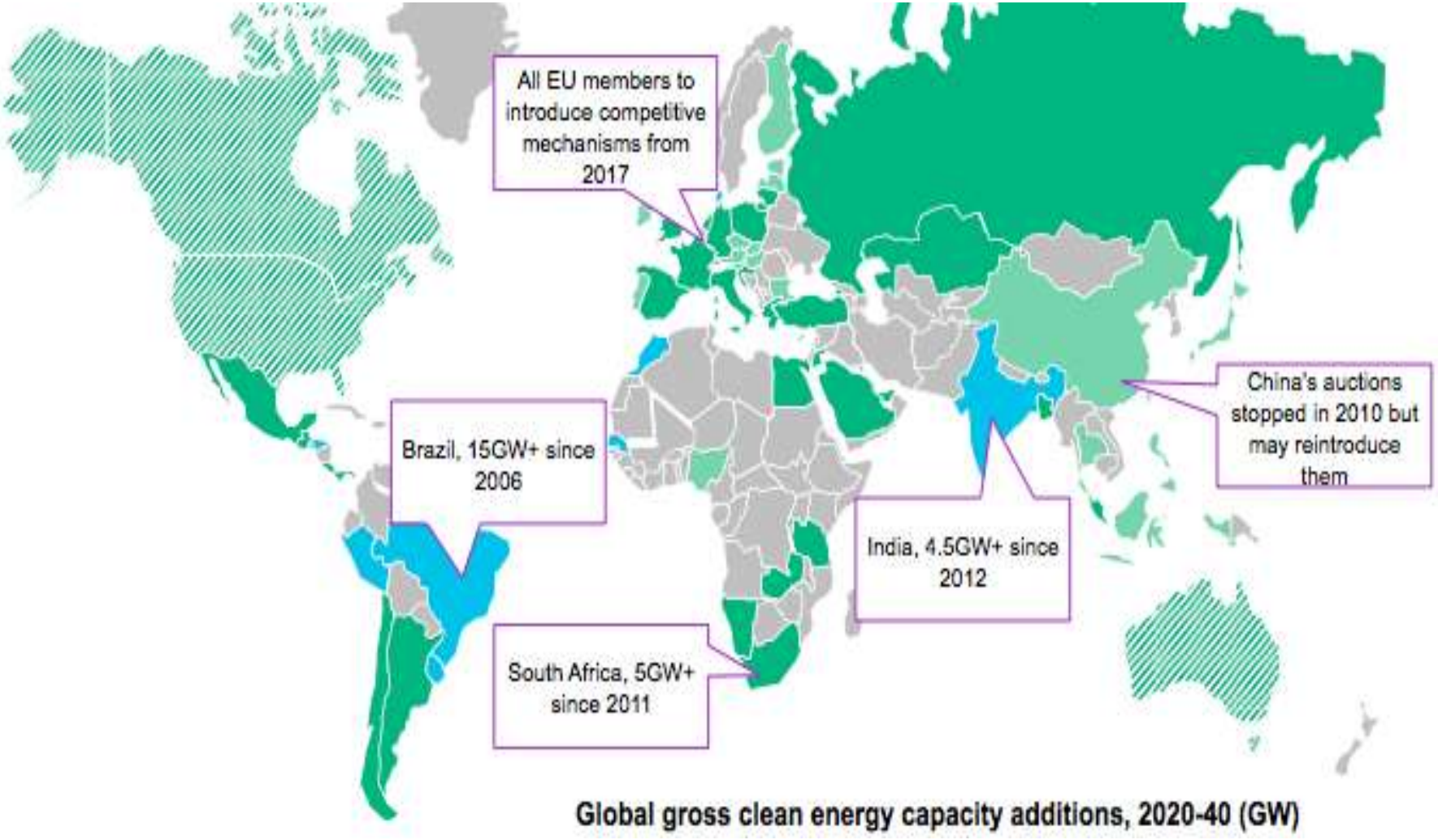
Renewable Energy Auctions



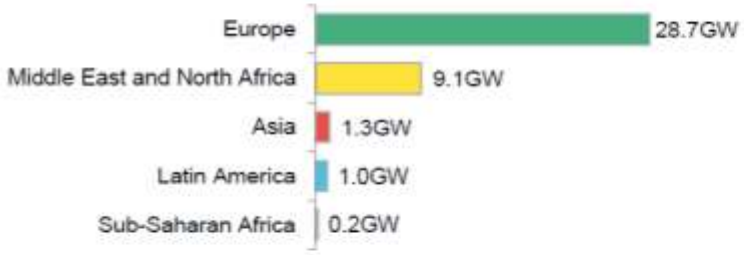
To look at emerging prices, we look at auctions. Why? Because they drive prices down.



There has been a three-fold increase in auctioned RE capacity in 2016

Planned auctions

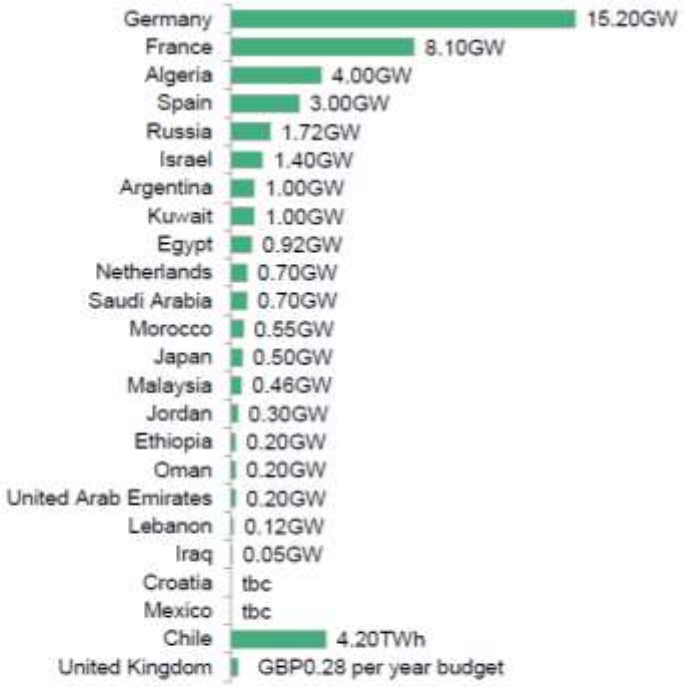
Capacity to be auctioned by region



Capacity to be auctioned by sector

Source: Bloomberg New Energy Finance

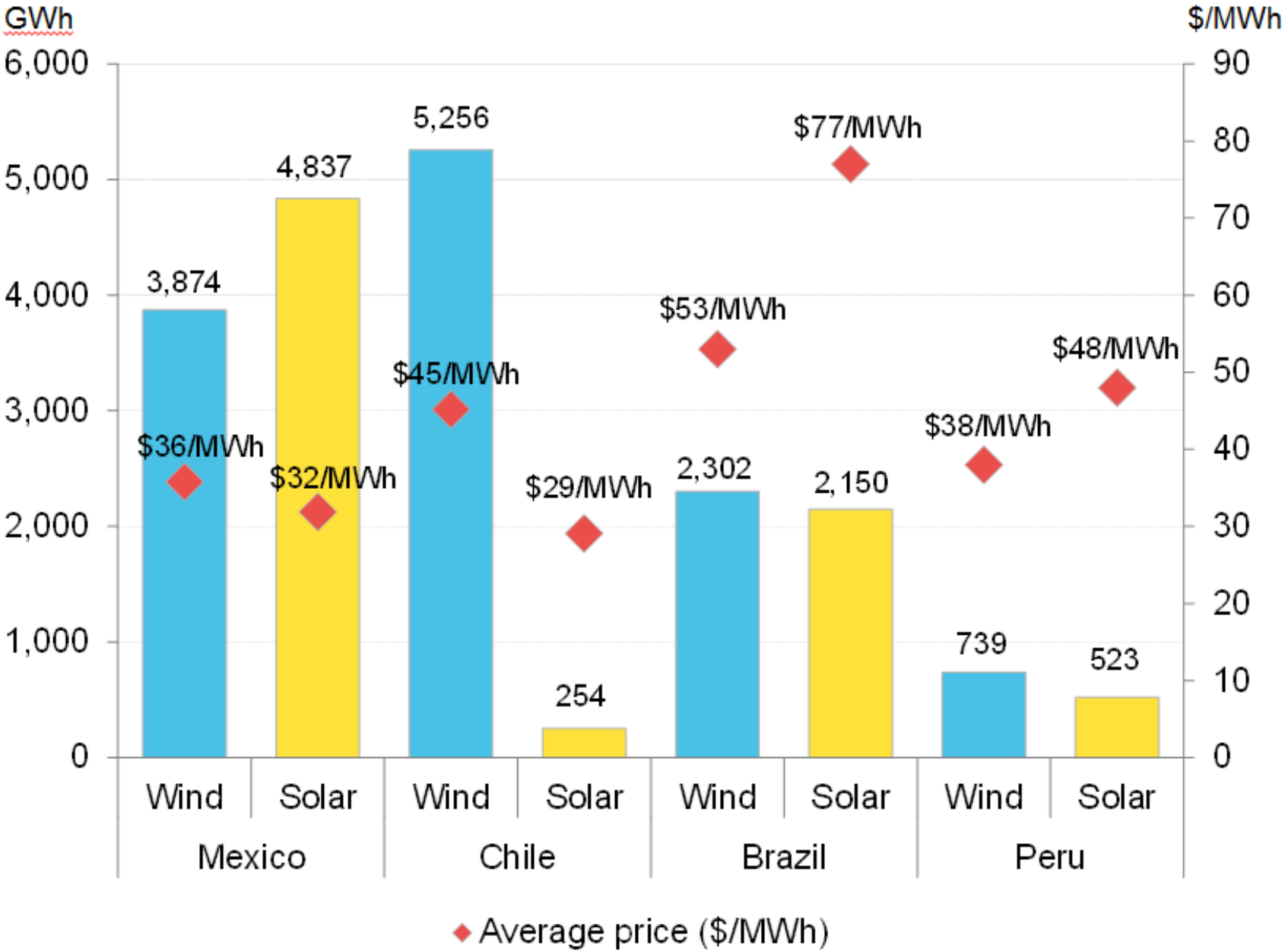
Capacity to be auctioned by country



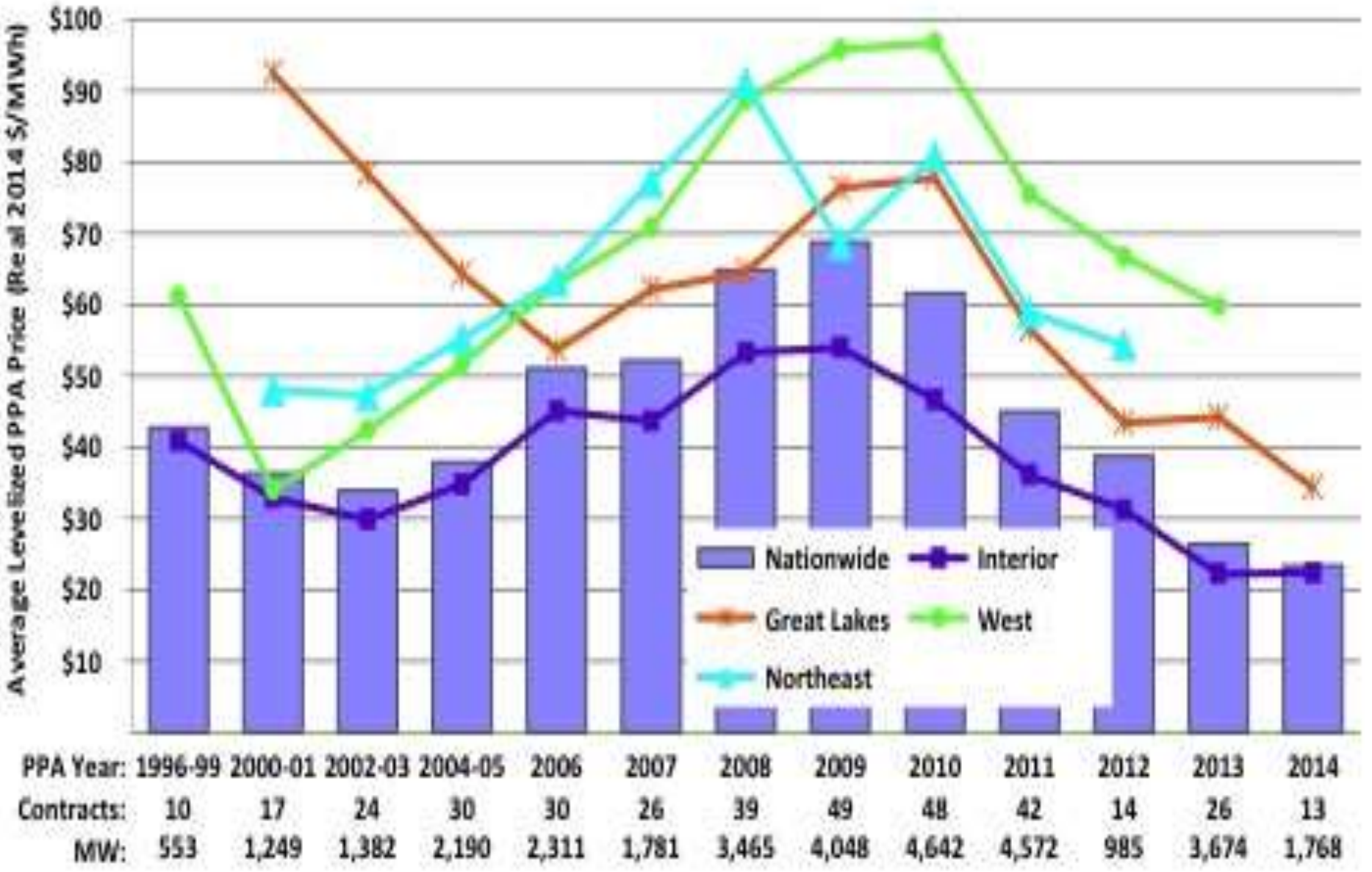
Source: Bloomberg New Energy Finance

Bloomberg New Energy Finance

Comparison of Recent Latin American Auctions



South Africa: Auctions get low prices



India: Towards 175 GW of RE

India's Madhya Pradesh auctions nation's lowest-priced solar

Today's reverse auction for capacity at the 750 MW Rewa solar farm in the Indian state attracts record-low bid of just INR 3.59/kWh ($0.053/kWh).

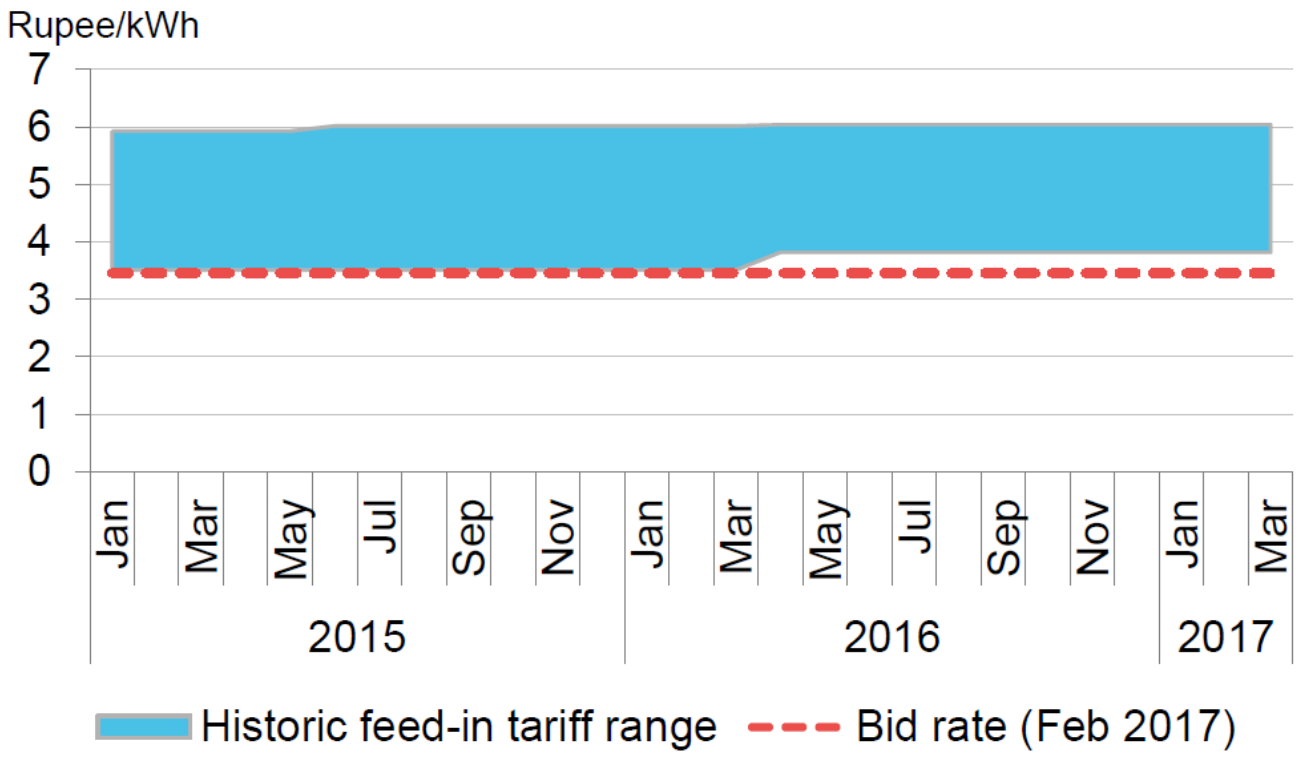
FEBRUARY 9, 2017 IAN CLOVER

INSTALLATIONS UTILITY-SCALE PV INDIA

India now has 10 GW of solar capacity installed, and could add that amount again in 2017 alone.

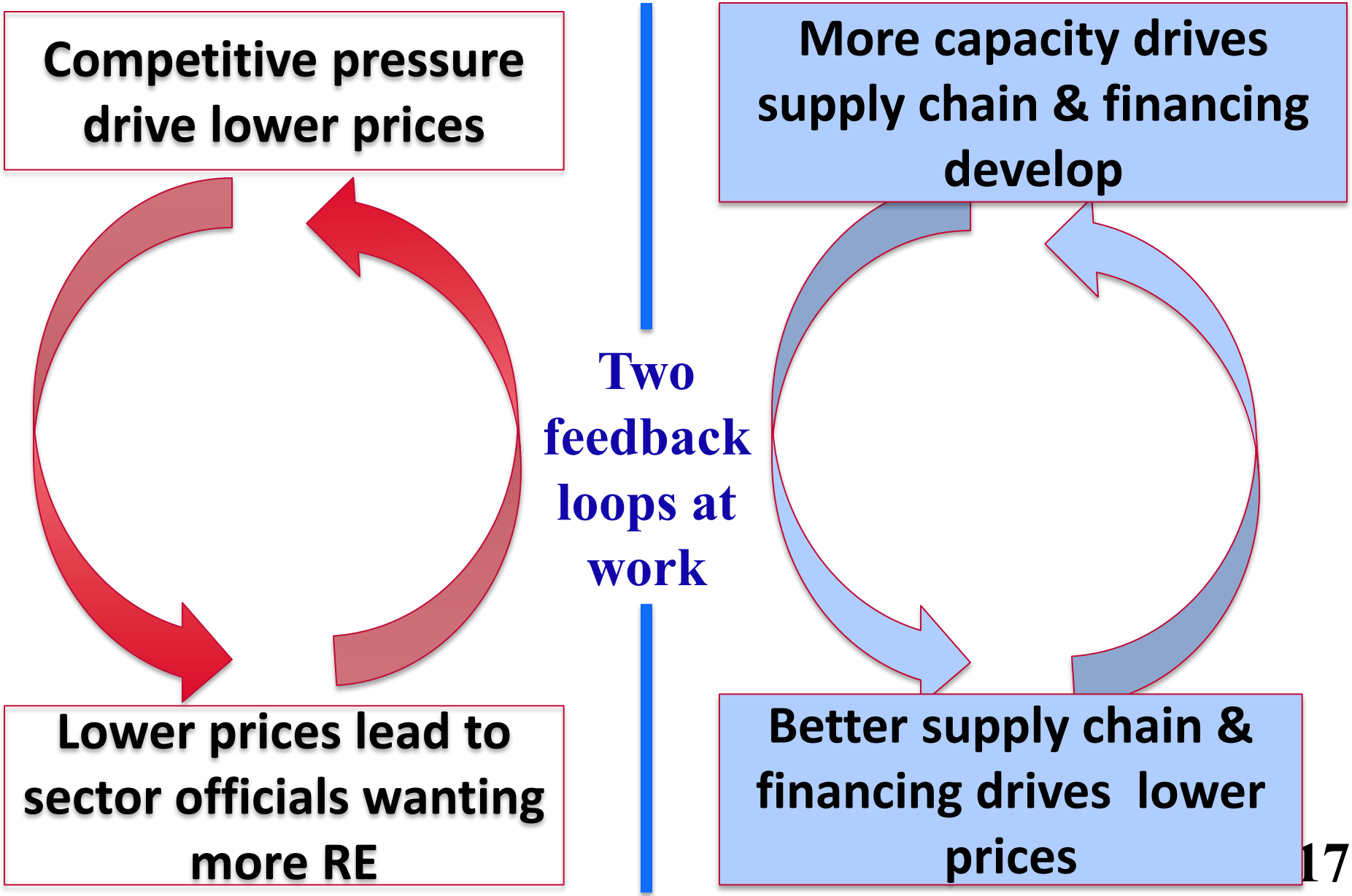
- National renewable energy target: **175 GW** – highest target in world!
  - 100 GW of solar
- More large-scale solar farms planned

Indian wind auction rings a death knell for feed-in tariffs



Source: Bloomberg New Energy Finance, Note: $1 = 66.8 Indian rupees, tariffs shown are for projects not claiming accelerated depreciation benefits which are offered a lower tariff.

What's going on here?



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Thank you

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