CHINA RENEWABLE ENERGY AND BATTERY STORAGE PROMOTION PROJECT
Key battery storage market drivers

Early Birds at Consumer Level

• Time-of-day tariff:
  – gap of peak and off-peak tariff enables the financial profitability of battery investment at the consumer level
  – SMEs aim at long-term engagement for BESS deployment

Renewable energy development

• Serious RE curtailment requires attention to:
  – “Provincialism” hinders power exchange across provinces
  – Transmission bottlenecks
  – Inadequate operational flexibility in power systems
  – Inefficient dispatch

• More ambitious RE development requires adequate power system flexibility – battery storage will be a key solution at generation, grid and consumer levels
Battery storage market barriers

• Access to financing for SMEs
• Reluctance to finance by commercial banks
• Policy and regulations
• Technical and environmental standards
• Limited business models
Project objectives and description

**Objective**
Promote the integration and use of RE through the deployment of battery storage systems and innovative applications of RE

**Investment Support**
- World Bank loan of US $ 300 million + Huaxia Bank of US $ 450 million
- Lending through financial institutions (Hua Xia) builds on the experience of energy efficiency lending projects
- Qualified investment sub-projects (mainly battery energy storage)

**Technical Assistance**
- National Energy Administration: Policy, regulatory, and technical and environmental standards
- Hua Xia Bank: Project implementation support, Market development, loan due diligence, skill building
Project Design and Implementation

The Proposed Project

- World Bank
- Project Agreement
- IBRD Loan
- Loan Agreement
- Huaxia Bank
- Sub-loan
- Eligible Sub-Borrowers
- Eligible Investment Subprojects
- Equity

Parallel Operations

- MOF
- Subsidiary Loan Agreement
- NEA (PMO)
- New Proposed ESMAP TA
- ESMP TF
- GEF grants
- Eligible Activities on Policy and Institutional Strengthening
- China DRE Scale-up Project & CRESP 2 Project
# China Renewable Energy and Battery Storage Promotion Project and Parallel Operations - Results Chain

**PDO:** Promote the integration and use of renewable energy through the deployment of battery storage systems and innovative applications of renewable energy

## Project Activities
IBRD loan (US$300 million) and co-finance (US$450 million) for investment subprojects in:
- **Battery storage** systems at generation, grid, and consumer levels, and DRE with storage
- **Innovative RE applications:** RE for heating (geothermal and biomass) and for hydrogen production

## Parallel Operations
- **GEF grant** (US$2 million) for:
  - Establish enabling policy environment for battery storage: development of policies, regulations, technical and environmental standards on safety, battery reuse and disposal
- **ESMAP grant** (US$1.5 million) for:
  - Due diligence review of the investment sub-projects
  - Capacity building for Huaxia Bank on market studies and survey, business development and trainings

## Outputs
- Huaxia Bank:
  - Expansion of green finance business and improved capacity to manage its green finance investment subprojects, including environmental and social management
  - Investment subproject contracts signed and implemented
  - Knowledge shared in events and reports
  - Analysis and advice to Government of China to inform new policy, regulations, standards, plans and/or targets
  - New technical and environmental standards established

## Intermediate results
1. **Battery storage capacity** installed (MWh) and financing barriers mitigated or removed
2. **DRE installed capacity** supported (MW)
3. Leverage financing mobilized for related investments: $450m debt from Huaxia Bank and about $188m equity from sub-borrowers
4. **Beneficiary satisfaction** increases - access to financing for SMEs
5. **Quality of subloan portfolio** (non-performing loans level to SMEs) improved

## PDO outcomes
1. **Increase in RE absorption by the grids** from investments (GWh)
2. **Increase in RE use from innovative RE applications** from investments (GWh)
3. **Greenhouse gas emissions reduction** (Mt CO₂e lifetime)

## Long-term outcomes
- Climate change mitigation and **Cleaner air** (less pollution)
- **Improved energy services** more affordable and reliable
- **Innovation and knowledge** with global benefits
- **Jobs** in clean energy industry including in lower-income northwestern provinces
- **Enabling environment** for battery storage investment established, market growth for project developers and banks
Role of Huaxia Bank as Project Implementing Agency

• Commits to innovative business lines with proven records
• A capable client with international experience
• National capability for pipeline origination
• Open knowledge sharing participation
• Access to finance for private sector
Operational aspects

• Project operation manual is the main basis for daily project execution
• Clear management of responsibilities and processes
• Clear qualification requirements for borrowers
• Define the eligibility requirements for the loan subproject
• Technical eligibility
• Financial eligibility
• Clear management requirements for loan subprojects
• Environmental management
• Social management
• purchase
• Financial Management
• Clarify the evaluation report requirements for loan subprojects
问题 QUESTIONS?