



Structuring Financing for RE Companies

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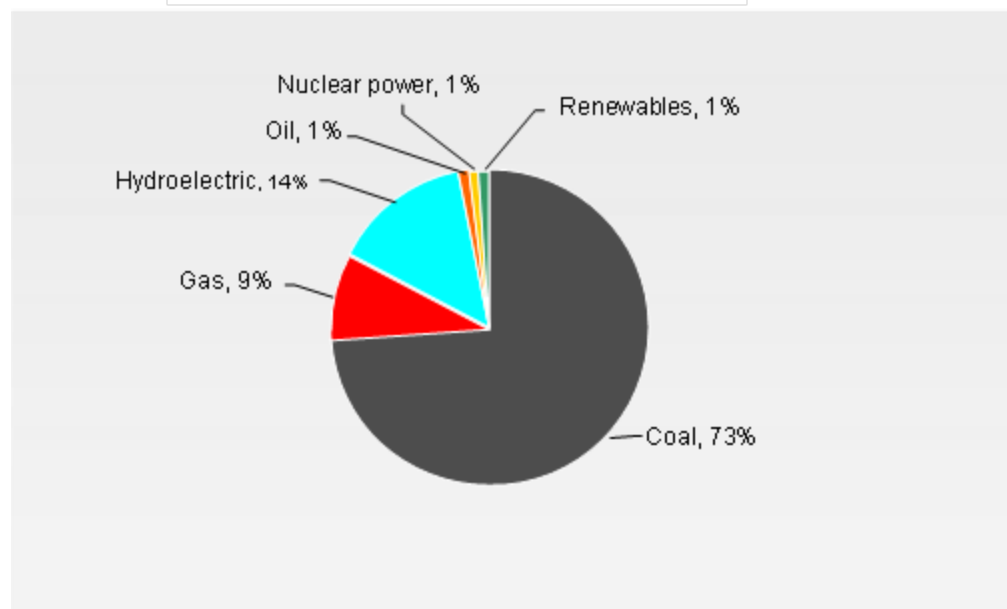
Key points

- Financing gap between would-be developers and investors
- Various challenges to developing RE projects in the region. Lack of access to funding cited as main barrier. Others are relative cost of RE and perceived/actual high risk. Various factors in combination are likely to change this
- No standard model for financing. Depends on nature/ size/ track-record of company, type of RE technology. Traditional project finance models or alternative structures can be applied
- Adjustments are necessary to address the specific characteristics of the relevant country, renewable technology and resource and the sector
- Non-recourse RE project financings still rare in the region - large scale projects with government and multilateral backing

Impetus for development of RE projects in region

- Increased energy demand
- Energy security
- International treaties, aggressive policy targets and carbon credits (CDM)
- Large untapped capacity
- Environmental / socio-economic
- Process industries: captive use
- Investors: Long term returns with lesser operational risks plus short term incentives
- Aid / development assistance

Power Generation Mix in East Asia 2009



Winds of Change, East Asia's Sustainable Energy Future,
The World Bank and AusAID, May 2010

Obstacles to development of RE projects in the region

Governmental

- Regulatory uncertainty / overlaying regulation
- Number authorities involved / lack co-ordination
- Biased energy policies
- Inadequate physical infrastructure
- Inadequate financial infrastructure

Financiers

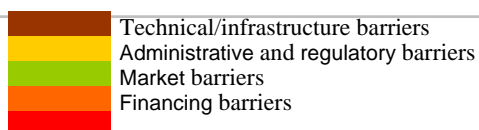
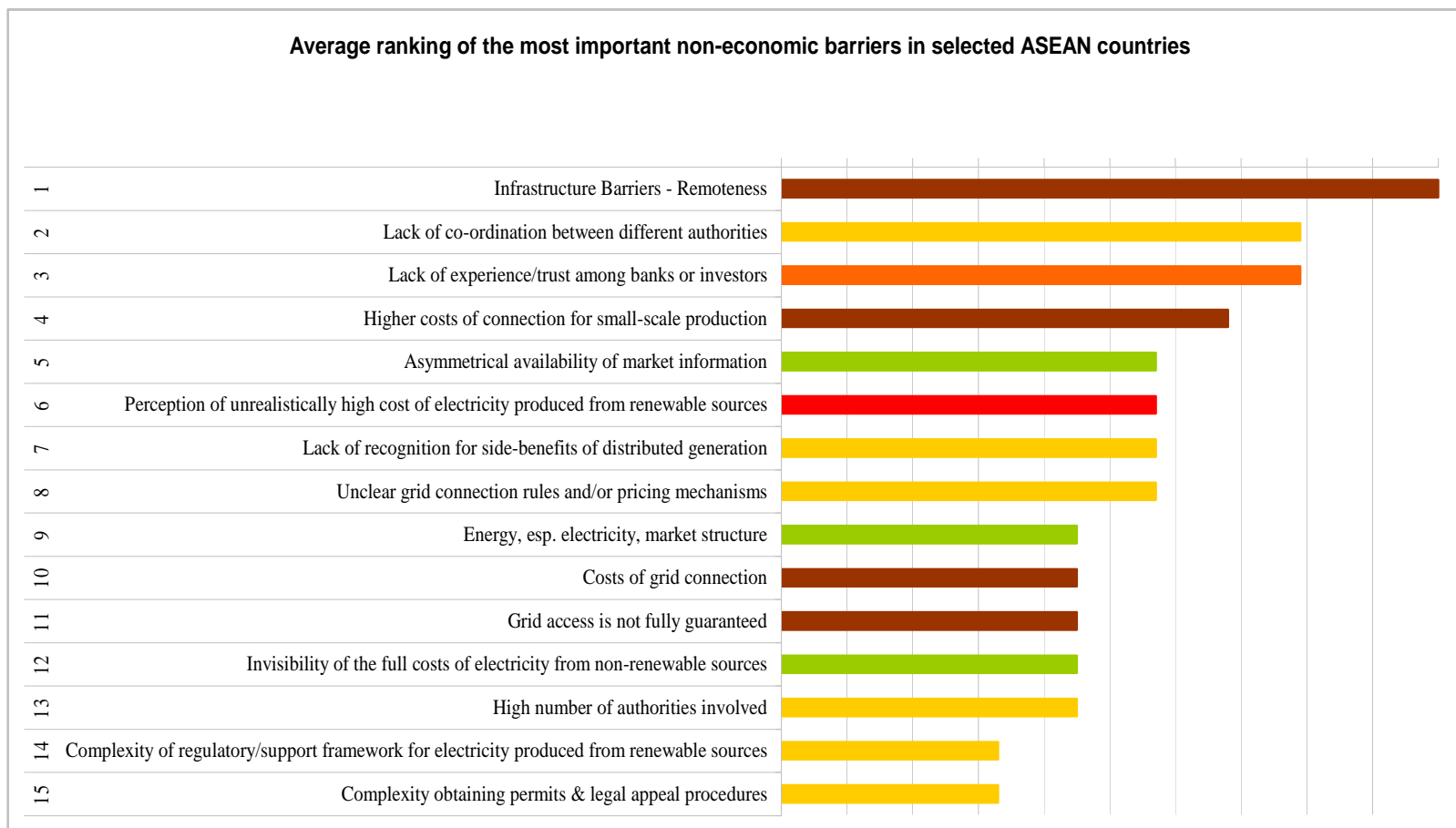
- Unclear risk profiles & perceived high risk
- Lack of technology experience
- Collateral / Security issues
- Long timelines & repayment periods
- High transaction costs

Developers

- Access to funds
- Limited track record
- Technology uncertainties and competition from existing technology
- Limited exit routes

Non-economic barriers to RE in the region

Average ranking of the most important non-economic barriers in selected ASEAN countries



Source: *Assessment of Non-economic Barriers to the Development of Renewable Electricity: Global Recommendations*, Confidential report prepared for the International Energy Agency, Ecofys Germany GmbH, Berlin. P Lamers, 2009

RE investment and financing in the region

- Global Trends in Sustainable Energy Investment 2010, Bloomberg New Energy Finance:
 - 2009 new financial investment in Asia/Oceania US\$40.8bn
 - Excluding China and India – decline from US\$3.1bn in 2008 to \$2.5bn in 2009
 - Reduced PE equity expansion capital and venture capital (2009 down 45% from 2008 levels)
 - M&A – also sharp decline. Wind sector most activity but biomass well positioned. Recent spate of clean energy IPOs HKSE. M&A as an exit route for funds.
- Shrinkage in available funds – funding demand outstrips supply
- Reduced risk appetite financiers
- Valuation ‘gap’ between sellers and acquirers
- Investment in RE not market driven but largely governments and international entities

RE investment and financing in US/Europe

- Market and demand driven
- RE projects driver was largely tax equity (PTC, ITC, MARCS)
- Now we see more traditional project financing:
 - led by European banks
 - ‘quality’ projects: brand-name sponsors, proven technology, creditworthy and well-structured offtakes, conservative financing model assumptions
- In US/Europe wind and solar projects now enjoy structured vanilla commoditized based non-recourse financing:
 - long tenors (17yrs wind, 20yrs solar)
 - robust pricing (275-400 over LIBOR incl. periodic step-ups, 300bps upfront for structuring and lead arranger)
- Importance of ‘track record’

Financing alternatives for clean energy companies

EQUITY

- Balance sheet
- Tax equity
- JVs
- Private Equity
- Venture Capital
- Specialized Equity Funds
(private sector or multilateral sponsored)

DEBT

- Bank lending (commercial/
state banks, regional/national
development banks)
- Bonds, securitization
- Lease-back
- Contingent capital

- Bilateral, multilateral, export
credit agencies (so far key to
successful non-recourse
project financing in region)

Other / complementary sources of finance

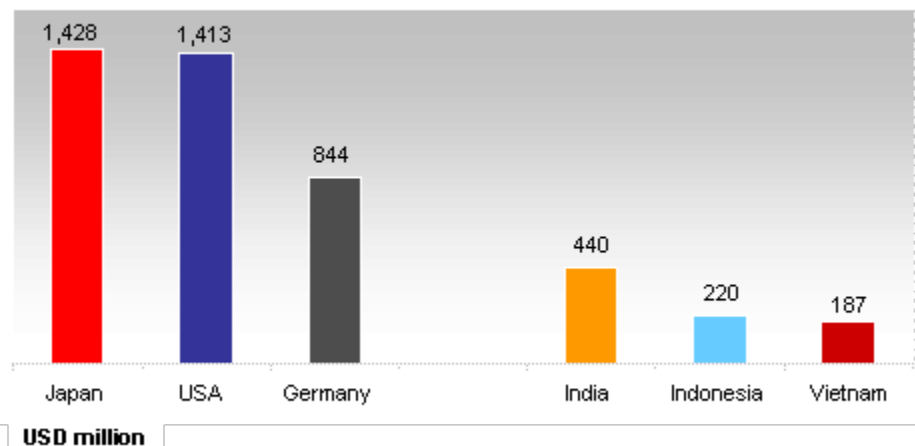
- CDM – including UN’s ‘Programmatic CDM’ for smaller projects
 - Dealer-credit model
 - Consumer-credit model
 - Supplier-credit model
 - Fee-for-service model (ESCOs/ RESCOs)
 - Lease model
 - Manufacturer sponsored (‘captive industries’)
 - Development assistance:
 - Multilaterals
 - Bilaterals
 - GEF, World Bank Group
 - Government sponsored
 - National Funds
 - Development banks
- **Multilateral agencies**
 - **Bilateral agencies**
 - **GEF, UNDP, UNEP**
 - **World Bank Group**
IBRD, IDA, IFC, MIGA, ICSID
 - **US Government sponsored**
USTDA, Ex-Im Bank, USAID, OIPC, Dept State, EPA, DOE
 - **National Funds**
(eg. Cambodia, Malaysia, Philippines, Singapore, Thailand Vietnam)
 - **Development Banks**
ADB, IDB

Developmental assistance and aid

Year 2009

- Total developmental assistance: >US\$5bn
- World Bank Group (incl IFC and MIGA 5x increase on 2008):
 - \$1.38bn for new renewables (solar, wind, geothermal, biomass, hydro below 10MW)
 - \$177m for large hydro
- GEF: 26 projects \$74m plus co-finance \$477m
- ADB: \$933m
- Bilaterals: e.g. KfW EUR284m

Aid to Energy Sector in Asia 2007 – 2008
Key Donors & Recipients



Source: OECD-ODA, April 2010

Recommendations for clean energy companies

Structuring financing

- Understand market conditions and strengths and weaknesses of project and developer to determine suitable funding mix
- Understand and maximize use of incentives (CDM, taxes, duties, grants, etc)
- Understand regulatory environment, policies, relevant stakeholders, utility issues, guarantees and contracts. Do not focus solely on technical aspects of project

Managing Risk to lower cost of financing

- Develop a clear risk profile – identify and quantify all risks as far as possible
- Look for and utilize other methods of risk management and mitigation, including insurance (traditional / credit risk / PRI), guarantees (parent / Govt / investment), financial instruments (eg. weather / interest rate / currency hedges, derivatives)
- Contractual allocation of risk (eg. to third party contractor) including fixed price turnkey construction contracts, liquidated damages for delay and performance shortfall



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